Municipal waste, environmental justice, right to the city and the irregular economy: Valuing the work of informal waste pickers in the Catalan recycling sector

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Abstract

Over the last 50 years, the implementation of municipally-run integrated waste management systems in Europe has led to the professionalization of the sector, leaving little room for the informal recycling sector. However, since the last decade, new social groups have emerged, usually immigrants, who have found in this sector a new way of life. In many Catalan cities, the informal collection of waste is an increasingly present activity, providing economic income to people who cannot work in the formal labor sector, either because of their citizenship status, or due to situations of social exclusion.

Though the presence of informal recyclers is noticed through-out Catalonia, there is little understanding, especially in the academic world, of their prevalence, the contributions that their work is making towards environmental goals, and how their work is affecting the formal waste system. Furthermore, though they are performing an environmental benefit to society, they are receiving little to no recognition for the work that they are doing, and it is unclear why. This investigation attempts to answer the question, *how is informality valued with regard to the environmental goals of a society*?

In order to answer this question, while at the same time recognizing the socio-environmental disadvantages the informal recycling sector has within the larger societal structure, an environmental justice perspective is employed as a theoretical framework. Within the environmental justice framework, two other frameworks from the French writer Henri Lefebvre are also employed. The first is Lefebvre's (1991) three views of space that exist within the urban core: perceived (physical), conceived (mental), and lived, to help understand how space shapes the informal recyclers' work. The second is Lefebvre's (1968) views of the commons that help consider who can access and benefit from materials perceived as waste.

For this investigation, a mixed-method approach is used to try and answer the main question using interviews, participatory observation, questionnaires, and comparative research methods. This approach provides quantitative data to understand the impact of the informal waste sector, along with qualitative data to understand the social reality where they exist. For this investigation, a case study was performed in the Catalan city of Granollers to collect empirical data, along with additional interviews with other municipalities throughout Catalonia in order to answer the main question.

The results show that though there has always been an informal recycling sector in Catalonia, the current members are not given the same level of respect since they are made up of immigrants and ethnic groups that come from abroad, and who have their own divisions and ethnic identities. As well, analysis shows that the spaces that the informal recycling sector operate dictate ownership and access of material, as well as the lived experience of the recyclers. The relationship between the formal and informal recycling sector is somewhat symbiotic. Though the formal recycling sector does not view the informal as a part of the waste management system and uses its power to limit access of the resources, they still operate in a co-dependent relationship, where each is affected by the other, and adjusts according to global market prices. Finally, although the lived experience of the informal recycling sector best exemplifies the unequal distribution of environmental risks and toxic burdens coupled with environmental and

social injustices that exist within the waste management system, the informal recycling sector are inhabitants of the city, and therefore have a right to it.

Resumen

En los últimos 50 años, la implementación de sistemas integrados de gestión de residuos gestionados por los municipios en Europa ha llevado a la profesionalización del sector, dejando poco espacio para el sector informal del reciclaje. Sin embargo, desde la última década han surgido nuevos grupos sociales, generalmente inmigrantes, que han encontrado en este sector una nueva forma de vida. En muchas ciudades catalanas, la recogida informal de residuos es una actividad cada vez más presente, que proporciona ingresos económicos a las personas que no pueden trabajar en el sector laboral formal, ya sea por su condición de ciudadanía, o por situaciones de exclusión social.

Aunque la presencia de trabajadores informales del reciclaje se percibe en toda Cataluña, existe poco conocimiento, especialmente en el mundo académico, sobre su prevalencia, sobre la contribución que su trabajo está haciendo en relación con los objetivos medioambientales y sobre cómo su trabajo está afectando al sistema formal de residuos. Además, aunque suponen un beneficio ambiental para la sociedad, reciben poco o ningún reconocimiento por el trabajo que están haciendo, y no está claro por qué. Esta investigación intenta responder a la pregunta, ¿qué papel juega y cómo es valorado el sector informal en relación con los objetivos ambientales de una sociedad?

Para responder a esta pregunta, al tiempo que se reconocen los perjuicios socioambientales que sufre el sector del reciclaje informal desde un marco teórico de justicia ambiental, se añaden dos propuestas teóricas del escritor francés Henri Lefebvre, las tres dimensiones del espacio urbano (percibido, concebido y vivido) y su noción de bienes comunes, que ayuda a considerar quién puede acceder y beneficiarse de los materiales percibidos como residuos.

Para esta investigación, se utiliza un enfoque metodológico mixto para tratar de responder a la pregunta principal mediante entrevistas, observación participante, cuestionarios y métodos comparativos. Este enfoque proporciona datos cuantitativos para comprender el impacto del sector informal de residuos, junto con datos cualitativos para comprender la realidad social donde existen. Para esta investigación, se realizó un estudio de caso en la ciudad catalana de Granollers para recopilar datos empíricos, junto con diversas entrevistas adicionales en otros municipios de toda Cataluña.

Los resultados muestran que, aunque siempre ha existido un sector informal del reciclaje en Cataluña, las personas que actualmente se dedican a esta actividad no reciben el mismo nivel de respeto, ya que están formados por inmigrantes y grupos étnicos que vienen del extranjero, y que, a su vez, cuentan con sus propias divisiones sociales y étnicas. Además, el análisis muestra que los espacios en los que opera el sector informal de reciclaje determinan la propiedad y el acceso al material, así como la experiencia vivida por los trabajadores informales. La relación entre el sector del reciclaje formal e informal es simbiótica. Aunque el sector del reciclaje formal

no ve lo informal como parte del sistema de gestión de residuos y utiliza su poder para limitar su acceso a los recursos, ambos operan en una relación codependiente, donde cada uno se ve afectado por el otro, en unas relaciones que se van ajustando de acuerdo a factores externos, como los precios del mercado global. Finalmente, aunque la experiencia vivida del sector del reciclaje informal ejemplifica bien la distribución desigual de los riesgos ambientales, las cargas tóxicas y las injusticias sociales que existen alrededor del sistema de gestión de residuos, hay que tener en cuenta que las personas que se dedican al reciclaje informal son también habitantes de la ciudad y que, por lo tanto, tienen derecho a unas condiciones de vida y trabajo dignas.

Resum

Durant els darrers 50 anys, la implementació de sistemes integrats de gestió de residus gestionats pels municipis a Europa ha comportat la professionalització del sector, deixant poc marge per al sector informal del reciclatge. No obstant això, des de l'última dècada han sorgit nous grups socials, generalment immigrants, que han trobat en aquest sector una nova forma de vida. En moltes ciutats catalanes, la recollida informal de residus és una activitat cada vegada més present, que proporciona ingressos econòmics a persones que no poden treballar en el sector laboral formal, ja sigui per la seva condició de manca de ciutadania o per trobar-se en situacions d'exclusió social.

Tot i que els treballadors informals del reciclatge són presents a tot Catalunya, hi ha poc coneixement, especialment en el món acadèmic, sobre la seva prevalença, sobre la contribució del seu treball a l'assoliment d'objectius ambientals i sobre com aquest treball està afectant el sistema formal de residus. A més, tot i que suposen un benefici ambiental per a la societat, les persones que s'hi dediquen reben poc o cap reconeixement social per la feina que estan fent. Per això, aquesta investigació intenta respondre la pregunta de "quin paper juga i com és valorat el sector informal en l'assoliment dels objectius ambientals d'una societat?"

Per respondre aquesta pregunta, al temps que es reconeixen els perjudicis socioambientals que pateix el sector del reciclatge informal des d'un marc teòric de justícia ambiental, s'ha emprat les teories de Henri Lefebvre sobre les dimensions de l'espai urbà (percebut, concebut i viscut) i sobre la seva noció de bens comuns urbans, com una forma de problematitzar a qui pertanyen els residus.

Per a aquesta investigació, s'utilitza un enfocament metodològic mixt per intentar respondre a la pregunta principal mitjançant entrevistes, observació participant, qüestionaris i mètodes comparatius. Aquest enfocament proporciona dades quantitatives per a comprendre l'impacte de el sector informal de residus, juntament amb dades qualitatives per comprendre la realitat social en la que aquest existeix. Per aquesta investigació s'ha realitzat un estudi de cas a la ciutat catalana de Granollers per a recopilar dades empíriques, juntament amb diverses entrevistes addicionals en altres municipis de tot Catalunya.

Els resultats mostren que, tot i que sempre ha existit un sector informal vinculat al reciclatge a Catalunya, les persones que actualment es dediquen a aquesta activitat no reben el mateix grau

de respecte, ja que estan formats per immigrants i grups ètnics que vénen de l'estranger, sovint en situacions d'il·legalitat, i que, al seu torn, compten amb les seves pròpies divisions socials i ètniques. A més, l'anàlisi mostra que els espais en què opera el sector informal de reciclatge determinen la propietat i l'accés dels materials, així com l'experiència viscuda dels treballadors informals. La relació entre els sectors del reciclatge formal i informal és simbiòtica. Tot i que des del sector formal no es considera l'informal com a part de el sistema de gestió de residus, i s'utilitza el seu poder per a limitar-li l'accés als recursos, tots dos operen en una relació de co-dependència, on cada un es veu afectat per l'altre, en unes relacions que es van ajustant d'acord a factors externs, com els preus de mercat global. Finalment, tot i que s'observa que l'experiència viscuda pel sector del reciclatge informal exemplifica bé la distribució desigual de riscos ambientals, de càrregues tòxiques i d'injustícies socials que existeixen al voltant del sistema de gestió de residus, cal tenir en compte que les persones que es dediquen al reciclatge informal són també habitants de la ciutat i que, per tant, han de tenir dret a unes condicions de vida i treball dignes.

Acronyms

ARC - Agència de Residus de Catalunya

EDC – Ecological Distribution Conflicts

EE – Ecological Economics

EIF – Environmental Inequality Formation

EJ – Environmental Justice

EPA – Environmental Protection Agency

EU – European Union

CAP – Centre d'Atenció Primaria

CBO – Community-based Organization

CGRVO – Consorci per a la Gestió dels Residus del Vallès Oriental

ILO – International Labor Organization

IWBs – Itinerant Waste Buyers

IWCs – Itinerant Waste Collectors

IRS – Informal Recycling Sector

MAP – Mediterranean Action Map

MSE – Micro and Small Enterprise

MSW – Municipal Solid Waste

MSWM – Municipal Solid Waste Management

NIMBY – Not in My Backyard

OFMSW – Organic Fraction Municipal Solid Waste

QCA – Qualitative Content Analysis

OECD – Organization for Economic Cooperation and Development

PIBBY – Place in Black's Backyards

PINFRECAT20 – The sectoral territorial plan of municipal waste management infrastructure of Catalonia

PRECAT20 – Program for Prevention and Management of Waste and Resources of Catalonia

RAE – Residuos Aparatos Electrònica (Electronic waste appliances)

RTTC – Right to the City (from Henri Lefebvre's book, *Le Droit à la Ville*)

RUS – Residuos Sólidos Urbanos (Urban Waste Solids)

SCP/RAC – Regional Activity Centre for Sustainable Consumption and Production

SES – Socio-economic Status

SIG – Integrated Management System

SWM – Solid Waste Management (not used yet – Baud)

WCCE – Working-Class Community Ecology

WPRPW - Working Party on Resource Productivity and Waste

WTE – Waste to Energy

Tables, Figures, Maps and Pictures

Introduction

1. The informal recycling sector

The phenomenon of the informal recycling sector is widespread throughout the world, providing an income to over 15 million people worldwide (Medina, 2010), with the majority of the work taking place in the global south. Due to the enormous participation of the sector in the south, a variety of public policies have been developed to manage the impact, both positive and negative, of the phenomenon. Although there has always been some degree of informal recycling in the north, since the economic crisis, this phenomenon has expanded and now state and local policy makers are trying to determine how to best deal with the situation.

The implementation of integrated waste management systems by municipalities in the last decades (following European directives) led to the professionalization of the sector, leaving little room for the informal sector. However, since the last decade, new social groups have emerged, usually immigrants, who have found in this sector a new way of life. In many Catalan cities, the informal collection of waste is an increasingly present activity, mainly because it provides economic income to people who cannot work in the formal labor sector, either because of their citizenship status, or due to situations of social exclusion. Conflicts have sprung up because of the new social realities that this informal activity generates, including questions about its legality, and the impact this activity has on municipal funds dedicated to waste management. To complicate the problem, the informal waste recyclers are usually immigrants with lower levels of education, less fluidity in the language of the host country, and without legalized citizenship, which pushes them towards the margins of the socio-economic sphere where they suffer different forms of prejudices, alienation and exclusion.

Despite the prejudices, alienation and exclusion that the informal recycling sector of Catalonia endures, they are recycling significant amounts of material that might otherwise end up in an incinerator, and from an environmental perspective, are making a positive difference. However, despite these accolades, it appears that they are receiving little to no recognition for the work that they are doing. Among other things, this investigation mainly tries to answer the question, *how is informality valued with regard to the environmental goals of a society*?

This phenomenon is important to study for two main reasons. For one, this particular phenomenon is unique since the majority of studies on the informal recycling sector take place in the global south, while the ones in the north rarely look at the distinctive characteristics of the informal recyclers of Spain. Being able to compare and contrast the waste pickers in Spain with waste pickers in both the south, and other regions of the north, will further the understanding on the subject. Secondly, since the volumes of waste are only increasing, capturing these resources instead of burning them is a global challenge, especially when these resources our finite. Valuing the work of the informal recycling sector enough to include them in the solution, might be a key to meeting this challenge, and provide some guidance for future waste policy.

2. The object of study: Informal waste pickers in Catalonia

Documentation of informal waste pickers in Catalonia starts in the late 1800´s with Catalan merchants in the paper market called "drapaire," but most likely some form of informal recycling has existed through-out Catalonia's history. Today, modern day drapaire are seen on the streets of Catalan cities with shopping carts and vans searching through the municipal containers for metals, cardboard, and materials they can re-furbish and sell to second-hand shops. Though some academic work has been done on the informal waste pickers of Catalonia, how many there are,

who they are, what impact they are making on the formal system, and how they are valued still remains a mystery.

For this investigation, a case study was performed in the Catalan city of Granollers to collect empirical data to try and answer some of these questions. This case study included a questionnaire, in-depth interviews, and participatory observation. As well, interviews were conducted with 22 different municipalities through-out Catalonia in order to compare the data with Granollers and see if the same phenomenon was happening in other areas of the autonomous region. The interviews with municipalities and follow-up interviews were completed with the help of Dr. Josep Espluga and Dr. Julián Porras, in fulfilment of a separate project funded by the non-profit Ecoembes.

3. Perspective and method

For this investigation, a mixed-method approach is used to try and answer the main question using interviews, participatory observation, questionnaires, and comparative research methods. This approach provides quantitative data to understand the impact of the informal waste sector, along with qualitative data to understand the social reality where they exist. The qualitative work for this investigation took place between October 16, 2018 and December 11, 2018, and included 12 interviews with waste experts, 8 in-depth interviews, 8 follow-up interviews, participative observation, and 12 interviews with municipal staff. The quantitative work for this investigation consisted of a 9-week period (Oct. 16, 2018 – Dec. 11, 2018) and 8 in-depth interviews, collecting data on type and volume of materials collected, hours worked, money made, kilometers walked and other relevant information.

Recognizing the socio-environmental disadvantages the informal recycling sector has within the larger societal structure, an environmental justice perspective is employed as a theoretical framework. Within the environmental justice framework, two other frameworks from the French writer Henri Lefebvre are also employed. The first is Lefebvre's (1991) three views of space that exist within the urban core: perceived (physical), conceived (mental), and lived, to help understand how space shapes the informal recyclers' work. The second is Lefebvre's (1968) views of the commons, which relate to production and consumption, public spaces of mobility, and creativity and collective visions of imagined communities (Susser, 2013). This second view is used to help consider how notions of the commons determine who can access and benefit from materials perceived as waste.

4. Organization of the content

This thesis is split into three parts. Part one provides a context for the topic about to be explored by offering four chapters on four different themes that occur though-out the investigation. Part two consists of the conceptual framework and methodology that is used to undertake the study. Part three are the analysis chapters that present the empirical data collected and how they are interpreted, along with a final conclusion chapter highlighting the key achievements of the study. Additionally, the bibliography, acronyms, and appendix are included at the end of part three.

Part one provides a background for the study which includes a literature review of current academic thought. This section is divided between four chapters; 1) waste management systems, 2) waste pickers and the informal recycling sector, 3) environmental justice and the right to the city, and 4) conceptualizing the work of the informal recycling sector. As demonstrated by these four chapters, this investigation crosses over many disciplines. Chapter one begins with a global

picture of waste and waste management, and narrows it down to the waste management system of Catalonia and Granollers, where the case study takes place. Chapter two looks at waste pickers as a global phenomenon, and then progressively moves the subject closer to where the case study takes place. Chapter three provides a background on two theoretical frameworks: environmental justice and the right to the city. These frameworks will be used as a lens in which to view the phenomenon. The last chapter conceptualizes the work of the informal recycling sector from a labor perspective, while also showcasing some of the unique challenges of the informal recyclers of Catalonia.

Part two clarifies the conceptual framework that is used to guide this investigation. In the chapter five, both an epistemological and theoretical approach are provided, along with explaining why Lefebvre's (1968) *right to the city* approach was chosen. Next the main questions and hypotheses are described, along with the analysis model that was used. For this investigation, there is one central question, and three sub-questions, each with a corresponding hypothesis.

Chapter six identifies the methodology that was used. This study is a mixed-method investigation, containing both quantitative and qualitative characteristics. A case study was conducted in the city of Granollers, where a questionnaire was completed as well as a series of in-depth, semi-formal interviews with informal recyclers, municipal employees, NGO's, and experts in waste management. A larger series of interviews were completed with municipal employees through-out Catalonia. This chapter clarifies how the methodology was organized and completed.

Part three provides the analysis and conclusions of the investigation. The analysis is divided into three separate chapters based on the three sub-questions and hypotheses that were

created. The three separate chapters are; 1) The chatarreros of Catalonia: How they are viewed and how they view themselves, 2) Limits of informal recycling sector activities through the social production of space, and 3) Three forms of the urban commons. Each one of these chapters uses empirical data collected during the interviews, questionnaires, and participative observation in order to answer the sub-questions, and ultimately answer the main question. The final chapter is the conclusion chapter which highlights the main insights discovered during the investigation, and provides guidance for future research and policy.

PART 1

Waste Management, Waste Pickers, Environmental Justice and the Right to the city

Chapter 1
Waste Management Systems

Waste management has been employed in human societies in various ways for the last 3,000 years (Wastewatch, 2004). This chapter provides a global context for waste management, by looking at the history of waste management, current waste composition, and modern management strategies. Next, going from a global scope down to the case study area, this chapter covers the main management systems, waste policies, and major players in Europe, Spain, Catalonia, and finally the city of Granollers, where the case study takes place. The chapter concludes with a discussion of zero waste and circular economy agendas which are currently shaping waste policy in the EU and Catalonia.

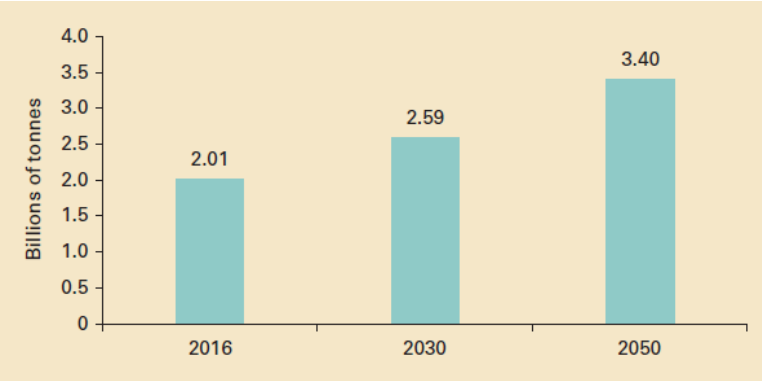
1. Global Waste

Waste and Waste Management Systems are principal parts of today's world, and affect all of the planet's inhabitants. Poorly managed waste especially affects those that are most vulnerable in society, those who are working in unsafe waste-picking conditions, and who are suffering profound health problems because of their work (Kaza, 2018). Since waste is a global issue, people around the world are debating the best way to manage the enormous volumes that humans are creating. Just how much waste are we producing? According to the World Bank,

> The world generates 2.01 billion tonnes of municipal solid waste annually, with at least 33 percent of that—extremely conservatively—not managed in an environmentally safe manner. Worldwide, waste generated per person per day averages 0.74 kilogram but ranges widely, from 0.11 to 4.54 kilograms. Though they only account for 16 percent of the world's population, high-income countries generate about 34 percent, or 683 million tonnes, of the world's waste. When looking forward, global waste is expected to grow to 3.40 billion tonnes by 2050. (Kaza, 2018, p.3).

This tremendous amount of waste, if poorly managed, can have significant environmental and health related impacts to humans and other species. The world has never experienced waste generation on this scale throughout our history, and according to current projections, waste generation will outpace population growth by more than double by 2050 (Kaza, 2018). In 2030, the world is expected to generate 2.59 billion tonnes of waste annually, and by 2050, waste generation across the world is expected to reach 3.40 billion tonnes (Kaza, 2018).

Figure 1.1: Projected global waste generation



Source: (Kaza, 2018, p.25)

The waste management decisions we make today help determine how we will manage the increase of waste in the future, as well as which resources will be available for future generations.

1.1 A history of waste management

The first organized plan for waste on record was in 3000 BC in the Cretan capital of Knossos, where the first recorded landfill sites were created by placing refuse in large pits and rings and covering them with earth (Waste Watch, 2004). In the Americas, Mayans placed their organic waste in dumps and used broken pottery and stones as fill (Melosi, 2005, p.3). Interestingly, this method, burying waste in the ground and covering it up with organic matter, is still the most common approach used today. The first public policy that focused on waste management was in

500 BC, where government officials in the Greek city-state of Athens opened a municipal landfill site and ordered a decree that waste was to be transported at least one mile beyond the city gates (Waste Watch, 2004). Different waste management approaches concerning waste has continued throughout societies. In Medieval Europe, municipalities played with a variety of ideas to deal with the problem of waste. In 1388, the English Parliament banned the disposing of waste in public watercourses or ditches (Melosi, 2005, p.5). The challenge of which waste management system to enact has not gone away, but has only become more complicated based on the enormous volumes and varieties of waste currently created.

In modern times, humans have continued to create waste, only now we produce more waste than ever. As explained by the World Bank, "Waste generation is a natural product of urbanization, economic development, and population growth. As nations and cities become more populated and prosperous, offer more products and services to citizens, and participate in global trade and exchange, they face corresponding amounts of waste to manage through treatment and disposal" (Kaza, 2018, p. 18). Author Susan Strasser, in her book *Waste and Want*, summarizes today's waste problem by pointing out that "we discard stuff simply because we do not want it. We buy things devised to be thrown out after brief use: packaging designed to move goods one way from factories to consumers, and 'disposable' products, used one time to save the labor of washing or refilling" (Strasser, 1999, p.4). In other words, the products that we use today are designed to be used once and then be simply thrown in the waste bin, a type of thinking that is relatively new in the history of human beings.

1.2 Waste composition and environmental impacts

So, what is exactly considered to be waste? There are many different types of waste in the world such as nuclear waste, medical waste, and emissions from combustible engines to name a few. However, for this thesis I will be focusing on wastes that are normally included in municipal collections, as they relate to the topic of investigation. Regarding municipal collection, most waste is classified into 6 different categories, organic, paper, plastic, glass, metal, and other. The table below shows the different categories of waste and what materials are included in those categories.

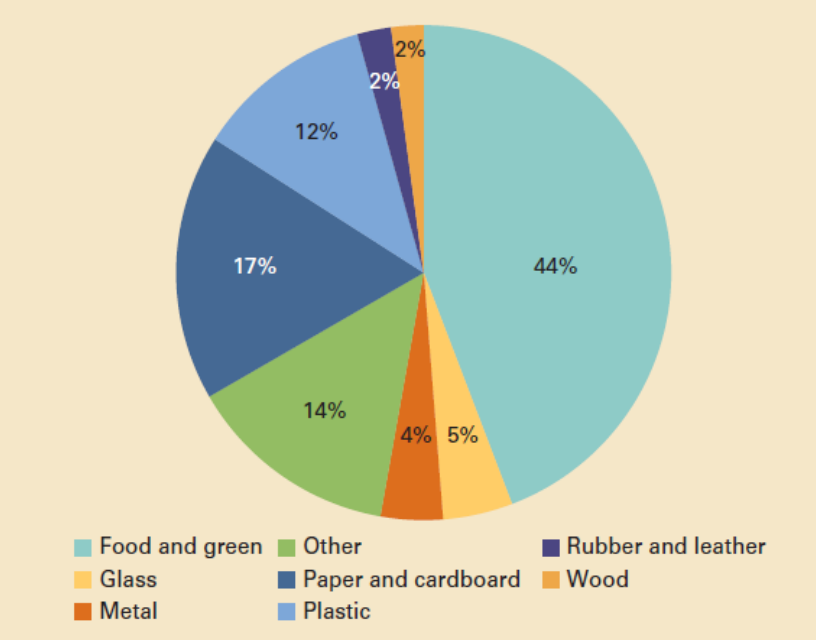
Table 1.1: Types of waste and their sources

Type	Sources
Organic	Food scraps, yard (leaves, grass, brush) waste, wood, process residues
Paper	Paper scraps, cardboard, newspapers, magazines, bags, boxes, wrapping paper, telephone books, shredded paper, paper beverage cups. Strictly speaking paper is organic but unless it is contaminated by food residue, paper is not classified as organic.
Plastic	Bottles, packaging, containers, bags, lids, cups
Glass	Bottles, broken glassware, light bulbs, colored glass
Metal	Cans, foil, tins, non-hazardous aerosol cans, appliances (white goods), railings, bicycles
Other	Textiles, leather, rubber, multi-laminates, e-waste, appliances, ash, other inert materials

Source: (World Bank, 2012, p.16)

The type and volume of each material varies depending on the affluence of the consumers, which will be further discussed below. If put into a pie chart, this is what the global waste composition looks like in regard to Municipal Waste collection.

Figure 1.2: Global waste composition *percent*



Source: (Kaza, 2018, p.29)

As can be seen in Figure 1.2, the majority of global waste composition is organic materials, and the smallest amount is rubber, leather, and wood. The composition of waste changes over time, depending on lifestyle/living conditions and product creation. For instance, today, plastics make up 12% of the global waste composition, where 100 years ago, plastic did not exist. As well, collection of these materials around the world vary, with some places only collecting one or two of these types, and some communities collecting all of them.

Aside from time, one factor that determines the type and volume of waste generated is the income levels of the consumers. In general, the higher the economic rate of the country the larger the volume of solid waste produced. This phenomena exists because of the increase higher standards of living. As the standard of living increases, there are more consumers, and therefore more waste is created. As well, wealthy consumers have access to more products, and what those products are and how far they are shipped also determine the types of material being consumed.

As explained in the World Bank's work, *What a waste 2.0: A global snapshot of solid waste management to 2050,*

> High-income countries generate relatively less food and green waste, at 32 percent of total waste, and generate more dry waste that could be recycled, including plastic, paper, cardboard, metal, and glass, which account for 51 percent of waste. Middle- and low-income countries generate 53 percent and 56 percent food and green waste, respectively, with the fraction of organic waste increasing as economic development levels decrease. In low-income countries, materials that could be recycled account for only 16 percent of the waste stream (Kaza, 2018, p. 4).

So, when municipalities are considering what type of waste management system to create, a large part of their system will depend on the composition of the waste that they are collecting.

As would be expected by the volume of waste generated in the world, the environmental impacts of unmanaged waste are staggering. According to the World Bank, an estimated 1.6 billion tonnes of carbon dioxide–equivalent (CO2-equivalent) greenhouse gas emissions were generated from solid waste management in 2016. This is mainly due to open dumping and landfill disposal, and represents about 5 percent of global emissions (Kaza, 2018). Additionally, poorly managed waste contaminates the world's water sources which contributes to flooding and poor drinking water, transmits diseases via breeding of vectors, increases respiratory problems through airborne particles from the burning of waste, and affects economic development through diminished tourism (Kaza, 2018).

1.3 Waste management in the modern world

To combat this global environmental crisis, a variety of waste management plans are constantly being created and adapted. Waste management is now an essential urban service that requires planning, management, and coordination across all levels and sizes of government. Which waste management system is deployed depends on a variety of factors; 1) the volume and variety of waste being created (as seen above), 2) the financial resources available for collection,

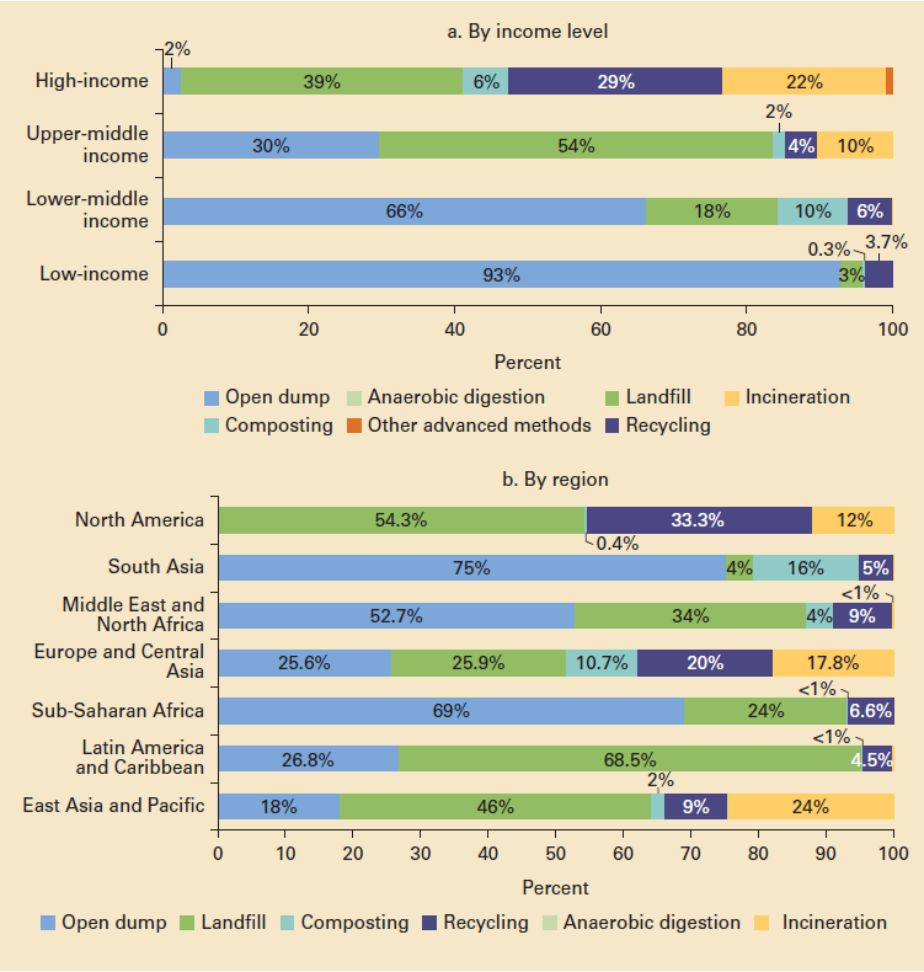
transporting and processing, 3) the chosen disposal method, and 4) the necessary education accompanying the program to make it a success. In regard to economics, "waste management can be the single highest budget item for many local administrations in low-income countries, where it comprises nearly 20 percent of municipal budgets, on average. In middle-income countries, solid waste management typically accounts for more than 10 percent of municipal budgets, and it accounts for about 4 percent in high-income countries" (Kaza, 2018 p. 1). These statistics demonstrate the importance of waste management for a community, especially in a low-income country, as it is one of the first services offered by a municipality created, and often is an impetus for the creation of the municipality in the first place. Regarding waste collection, there are several models used around the world. According to Kaza,

> "The most common form of waste collection is door-to-door collection. In this model, trucks or small vehicles—or, where environments are more constrained, handcarts or donkeys—are used to pick up garbage outside of households at a predetermined frequency. In certain localities, communities may dispose of waste in a central container or collection point where it is picked up by the municipality and transported to final disposal sites. In other areas with less regular collection, communities may be notified through a bell or other signal that a collection vehicle has arrived in the neighborhood" (Kaza, 2018, p.32).

As mentioned, the type of model used for collections as well as the frequency depends on the type of material collected and the volumes that are produced. Since recycled materials are now bought and sold on the global market, every step of the process is related to either the next or the previous step. For example, where the materials are transported to largely depends on how they will be processed next, which is determined by the final treatment and disposal plan, and which ultimately is determined by the global market. According to the World bank, globally, almost 40 percent of waste is disposed of in landfills, 30 % is openly dumped, roughly 19 percent undergoes materials recovery through recycling and composting, and 11 percent is treated through modern incineration (Kaza, 2018).

As higher income countries create most of the waste in the world, they also lead the world in the percentage of materials that are recycled. Globally, these recyclables can make up a substantial fraction of the waste stream for high income countries, "ranging from 16 percent paper, cardboard, plastic, metal, and glass in low-income countries to about 50 percent in high-income countries. As countries rise in income level, the quantity of recyclables in the waste stream increases, with paper increasing most significantly" (Kaza, 2018, p.17). Figure 1.3 showcases the various disposal methods by income level and by region throughout the world.

Figure 1.3: Disposal methods by income



Source: (Kaza, 2018, p.35)

As can be observed in Figure 1.3, the higher the income of the country, the higher rate of recycling, composting and incineration. Where there is a lower income, the higher the rate of open dumping. Figure 1.3 also showcases the various disposal methods by region, which further demonstrates the global income distribution, and subsequent disposal methods enacted by regions with a higher income.

Globally, waste management is most commonly managed by municipalities in a decentralized manner. Where local conditions allow, solid waste services can be managed on an intermunicipal scale. This intermunicipal management can use either public or private entities for collection, sorting, shipping and processing materials. When municipalities work together, there can be improvements with economies of scale, fewer individual investments of infrastructure and a wider span of financing sources, as well as reduced staffing needs, and exchange of technical skills (Kaza, 2018). Intermunicipal coordination is most effective when operational objectives and government regulations are similar across entities, such as in the European Union.

Educational campaigns vary depending on the goal or policy directions of the waste management system, as well as each municipalities capability for handling the waste. In educational campaigns, some type of waste hierarchy is usually included to guide public participation and educate the public about the goals/objectives or expected outcomes of the municipality. The following is an example of a waste hierarchy.

Figure 1.4: Waste hierarchy

Source: (World Bank, 2012, p. 27)

This hierarchical pyramid shows the most preferred and least preferred options for waste management. Reducing waste altogether without having it in the first place is the first choice, and a controlled dump is the last choice. This type of hierarchy would be included with any educational campaign for citizens to understand both the long-term goals and their role in the waste management system.

2. United Nations & Agenda 21

The overarching global framework for waste management is titled Agenda 21. Agenda 21 is a non-binding sustainable development plan created by the United Nations at the Earth Summit in Brazil in 1992, with the purpose of guiding governments and non-profits around the world with a broad objective of sustainability. Agenda 21 has since been updated in 1997, 2002, 2012, and 2015. Agenda 21 is a 350-page document broken up in to 40 chapters and 4 sections that cover a variety of sustainable development goals. The 4 sections of Agenda 21 are as follows:

- Section 1: Social and Economic Dimensions – This section looks at combating poverty, but also consumption habits, demographic dynamics, integrating environmental decision-making and other ideas.
- Section 2: Conservation and Management of Resources for Development – This section discusses deforestation, protecting specific environmental regions, biodiversity, and pollution control amongst other topics.
- Section 3: Strengthening the Role of Major Groups – This section includes the roles of children, youth, women, NGO's, local organizations, business and industry leaders, workers and others.
- Section 4: Means of Implementation – This section looks at science, technology transfer, education, international institutions and financial mechanisms.

Direction for municipal waste management is found in Section 2, chapter 21, and is titled, "Environmentally sound management of solid wastes and sewage-related issues." In chapter 21, Agenda 21 defines waste to include "all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris." It also sets a framework for action based on a hierarchy of objectives focused around the following four program areas; 1) minimizing wastes, 2) maximizing environmentally sound waste reuse and recycling, 3) promoting environmentally sound waste disposal and treatment, and 4) extending waste service coverage (United Nations, 1992).

The European Union has adopted Agenda 21 as a framework in their attempt to tackle environmental issues. As mentioned, although Agenda 21 is non-binding, it contains the first set of objectives and goals for municipal waste management and sets the framework for waste management in Europe (United Nations, 1992). The European Union has also created a set of waste codes that are used to classify materials, and are found in the European Waste Code Catalogue. In regard to this investigation, Chapter 20 of the code deals with Municipal waste, with 20-01-01 detailing paper and cardboard, and 20-01-40 clarifying metals.

3. Waste management in Spain

The country of Spain has agreed to and abides by both Agenda 21 and the European Waste Code Catalogue, while also defining its own additional goals and objectives, as well as the method in which it will reach them. Waste legislation in Spain is administered by the relevant authorities at different administrative levels. At the national level, the *Ministerio para la Transisción Ecológica y el Reto Demográfico* (Ministry for Ecological Transition and Demographic Challenge) is responsible for the national waste management plans and goals. At the regional level, all seventeen autonomous regions are responsible for issuing strategic waste management plans for each specific region. The autonomous regions also attend to the authorization, inspection and sanction of waste management activities and the shipment of waste in and out of EU countries. At the local level, the municipal authorities are responsible for the management of the urban waste, including separate collection and transportation of Municipal Solid Waste.

3.1. Joining the European Union and incineration

Interestingly, prior to Spain joining the European union (Spain applied in 1977, and gained formal acceptance in 1986), much of the waste management activities were performed by the informal economy, which is the subject of this investigation. As part of joining the EU, Spain had to formalize their waste management system. Therefore, the first Spanish Waste Law was passed in 1985, forcing municipalities to approach the problem of waste and to take measures for protecting the environment. Since then there have been a variety of laws and regulations, such as the 1997 Packaging Law, the 1998 second Waste Law, the 2006 Municipal Solid Waste Plan (EEA, 2013), and continuing all the way to Royal Decree 293 in 2018 discussing the consumption of plastic bags. Waste Management laws and regulations are constantly evolving as

consumer preference, increased recycling options, environmental concerns, and changes in the global market fluctuate.

The country of Spain practices all of the disposal systems mentioned in the waste hierarchy except for open dumping, with one of the most common being incineration. Through-out the Iberian Peninsula, there are 9 incinerators managed by the Spanish government as can be seen in Map 1.1.

Map 1.1: Incinerator map of the Iberian Peninsula

Source: (Margallo, 2012)

Eight Incinerators are located on the Spanish mainland, with one located on the island of Mallorca in the Balearic Islands. These incinerators are "waste to energy" (WTE) incinerators, meaning they try and capture as much energy they can of the energy created through incineration. Incineration plants have both political proponents and opponents, but in the waste management hierarchy is seen as a less preferred option then recycling and recovering the material.

3.2. Ecoembes, Ecovidrio and paper/cardboard

Two additional actors in the waste management system of Spain that play roles in this investigation are Ecoembes and Ecovidrio. Both Ecoembes and Ecovidrio were founded in 1996 prior to Law 11/97 on Packaging and Packaging Waste. They are non-profit organizations that help increase the recycling rate in Spain. Additionally, Ecoembes operates Spain's "Green Dot" program, a European program whose logo is displayed on packaging and informs citizens that the manufacturer of the product contributes to the cost of recovery and recycling. Ecoembes helps with packaging (yellow containers) and paper/cardboard (blue containers), while Ecovidrio helps with glass (green containers). Manufacturers pay into these programs to help offset the cost of recovery and recycling. After the material is collected, the City Councils own the contents of the green (glass) and yellow (light packaging) containers, while Ecoembes owns the contents of the blue (paper/cardboard) containers. The cities then buy the contents of the blue container from Ecoembes (based on 40% of the weight) (Clapes, 2018). The City Council can then sell the glass, light packaging and paper/cardboard to a middleman ("recuperadora"), who in turn sells it on the national and/or global market.

4. Waste management in Catalonia

The waste in Catalonia is managed by the Agència de Residus de Catalunya (ARC), which is part of the Generalitat de Catalunya under the Department of Territory and Sustainability (Department de Territori i Sostenibilitat). The ARC is responsible for managing the waste generated throughout Catalonia. The main objectives of the Agència de Residus de Catalunya are:

- to promote the minimization of waste and their danger
- to nurture selective waste collection

- waste evaluation
- refuse disposal
- the recovery of spaces and soils deteriorated by the uncontrolled unloading of waste or by pollutants (ARC 2019)

ARC is a member of the Regional Activity Center for Sustainable Consumption and Production (SCP/RAC) fostering cooperation with other Mediterranean countries, and follows the Mediterranean Action Plan (MAP). ARC is also a member of ACR+, the Association of Cities and Regions for sustainable Resource management, which is European, but partners with countries all over the world. ARC manages 7 different business areas:

- Types of wastes: Municipal, Industrial, Commercial, Construction, Cattle manure, Health care, Organic matter, Paper and Cardboard, Glass, Waste from electric and electronic equipment (WEEE), end-of-life vehicles, End-of-life tires, packaging, Mineral oils, PCB/PCT, Batteries, Refrigerator and other apparatuses containing CFCs, Fluorescent bulbs and gas discharge lamps, and Animal by-products not intended for human consumption, or ABPS.
- Prevention: Business Plans for Packaging Waste Prevention (PEP), European Week for Waste Reduction, Food waste, Hazardous waste minimization study, and Reuse
- Selective waste collection: collection models, integrated management systems, special municipal waste, municipal waste, and collection centers
- Recovery/Recycling: Recycling industry, Resource-efficient products and climate change, facilities Management
- Final Treatment: Disposition
- Awareness creation: Campaigns, Awards and prizes, Communication elements, Games, Collection of educational activities on the subject of waste, Communication events map, and Conferences and events
- Contaminated Soil: Causes and effects of soil contamination, Instruments, General Reference Levels (GRL), and Management process.

ARC offers information on waste management installations, waste carriers of Catalonia, Qualified laboratories, and statistics on Industrial waste, municipal and selective collection, and demolition and construction waste, along with waste regulations. Municipal waste and paper/cardboard are the two that are relevant to this investigation. ARC uses two main documents that guide their waste activities:

- PRECAT 20 – The Program for Prevention and Management of Waste and Resources of Catalonia – The PRECAT 20 is a document that provides the goals and vision for waste management/reduction in Catalonia. However, each territory in Catalonia can decide its own management of the waste.
- PINFRECAT 20 – The sectoral territorial plan of municipal waste management infrastructure of Catalonia 2020.

There are four different provinces in Catalonia containing 41 territories or "comarques," which are split into seven different groupings called "vegueries," as can be seen in map 1.2. The provinces are Província de Girona, Província de Lleida, Província de Tarragona, y Província de Barcelona. Within Catalonia, there are four incinerators in three of the provinces.

Map 1.2: Incinerators in Catalonia

Source: (Rendon, based on Margallo's, 2012 map)

- Girona – Incinerator de Girona
- Mataró – Incinerator of the Integral Restoration Center of Maresme Waste
- Sant Adriá de Besós – Incinerator of Sant Adriá del Besós
- Tarragona – Incinerator of Tarragona (Explotador Sirusa)

Catalonia uses three Waste Segregation Models; the 5-fraction model, the minimum waste model, and the mixed waste model. Local authorities with responsibility for municipal waste management must define the most suitable collection model for their municipality or group of municipalities. Like other parts of Spain, Catalonia also partners with Ecoembes and Ecovidrio for the management of light packaging (yellow containers), glass (green containers), and paper and cardboard (blue containers). The three models have some similarities. All of them offer Organic Fraction Municipal Solid Waste (OFMSW) in brown containers, glass in green containers, and paper-cardboard in blue containers. The three models differ in whether light packaging (often in yellow containers) is on its own, mixed with waste (often in grey containers), or mixed with paper/cardboard. The three types of waste segregation models are as follows:

- 5 fraction model: OFMSW / Glass / Paper-Cardboard / Light packaging / Non-segregated fraction
- Minimum waste model: OFMSW / Glass / Paper-Cardboard / [Light packaging + Non-segregated fraction]
- Mixed waste model: OFMSW / Glass / [Paper-Cardboard + Light packaging] / Non-segregated fraction

Picture 1.1 - 5 Fraction model in Barcelona

Source: (Rendon – Barcelona – Sept. 19, 2018)

As can be seen in Picture 1.1, Barcelona uses the 5 fraction model for their municipal waste segregation. In addition to the three different waste segregation models, there are four different

collection models used in Catalonia. The four different types of collection models are as followed.

- Surface containers (pavement and drop-off areas – Picture 1.1)
- Buried containers (Picture 1.2 below)
- Door-to-door
- Pneumatic systems (Picture 1.3 below)

Surface containers are the containers that come to mind when most people think of waste receptacles. Picture 1.1 (above) shows a picture of plastic surface containers that are used in the city of Barcelona in Catalonia. Buried containers (as seen below in Picture 1.2) have a smaller opening, and the waste is held in a container underground. Door-door (porta a porta) is a collection system often found in residential communities where collection happens from one residence (door) to the next. Pneumatic (Picture 1.3) is the final type of collection in Catalonia and operates in an air pressure system where waste is transferred through a series of tubes from the location it is dropped off to a containment area. Pneumatic systems are often used where limited space is available on site.

Picture 1.2 – Buried containers in Figueres

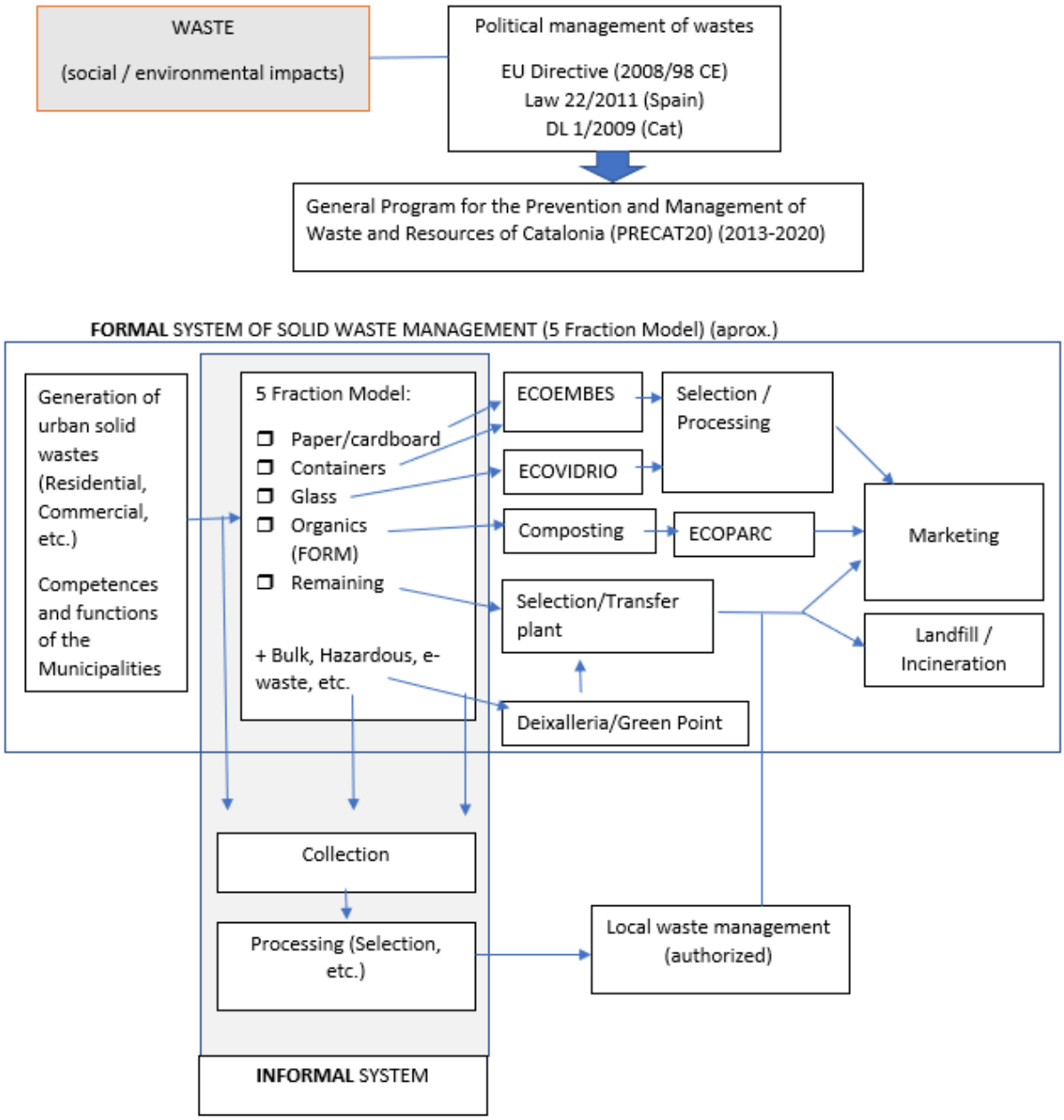
Source: (Rendon – Figueres Jan. 20, 2019)

Picture 1.3: Pneumatic containers in Barcelona

Source: (Rendon – Barcelona – Jan. 21, 2019)

Each segregation model is combined with one or more collection systems according to the unique features and preferences of each municipality. Additionally, Catalonia offers "deixalleries," also known as "Green Points" around the city for collection of additional recycled materials outside of three different segregation models such as clothes, shoes, ink cartridges, toners, electrical and electronic devices, cooking oils, electrical cables, small tires, aerosols and sprays, car batteries, cosmetics, radiographs, batteries, motor oils, paints/varnishes, fluorescent light bulbs, coffee capsules, and other materials. Green points can be at a fixed location in the one of the cities, or in the form of a "mobile green point" or mobile deixalleria which can travel to a specific area at a designated time. Surface containers, door to door, and green points are the access points for the waste pickers of Catalonia, as the buried containers and pneumatic systems, offer limited access to the materials located inside. Figure 1.5 shows a flow chart of the waste system in Catalonia and where the informal recycling sector accesses the 5 fraction system.

Figure 1.5: Waste management system of Catalonia



Source: (Rendon – Author's own elaboration)

5. Granollers/Vallès Oriental: Location of the case study

The city of Granollers, where the case study of this investigation takes place, is in the comarques of Vallès Oriental in Catalonia. In Vallès Oriental, the Consorci per a la Gestió dels Residus del

Vallès Oriental (CGRVO) manages all of the waste for the city of Granollers and other cities located within its borders. The CGRVO has its own objectives and targets and is managed by a Plenary Council, an Executive Committee, President, Vice-President and Management (Consorci, 2019), as well as their own public company for the collections called "Serveis Ambientals del Vallès Oriental SA." The city of Granollers provides a 5-fraction model for collections of their waste, providing surface containers (Picture 1.4), underground containers, and door to door service for its citizens.

Picture 1.4: 5 fraction model in Granollers

Source: (Rendon – Granollers – Nov. 13, 2018)

5.1 Deixallerias

As mentioned previously, an additional service offered by municipalities in Catalonia are the "Green Points" which are also called by their Catalan name, "deixalleries." Deixalleries are collection points for recyclables that do not fit into the 5-fraction mode, but are still recyclable. These include materials such as large appliances, old furniture shoes electronic devices, cooking oil, car batteries, fluorescent light bulbs, and various types of paints, and metals. This last product is extremely important and relevant to the chatarreros of Catalonia, since the two materials they tend to collect are cardboard and metals. More will be discussed about this in the

following chapters. In general, deixalleries have minimal security around them, and are usually staffed by municipal employees during the day times, and not staffed at all during the evening. Picture 1.5 shows the south deixalleria in Granollers.

Picture 1.5 South deixalleria in Granollers

Source: (Rendon - April 29, 2018**)**

The city of Granollers has two deixalleries in the city, one in the north and one in the south. As can see from the picture above, the fence around the deixalleria provides minimal security for the resources during off business hours. Additionally, the city also offers "mini" deixalleries around the city for items such as cd's, used ink cartridges, batteries and light bulbs (see Picture 1.6).

Picture 1.6: Mini deixalleria in Granollers, Catalonia

Source: (Rendon – Granollers – Nov. 13, 2018)

Once collected by the city, the material goes to different locations, depending on its contents.

- Yellow (light packaging) – Goes to a transfer plant run by the CGRVO and then to Santa Maria de Palautordera north of Granollers
- Green (glass) – Goes to the town of Mollet de Vallès to a sorting plant – Managed by Ecovidro
- Blue (paper/cardboard) – Goes to the company "Llorens" and sold on the open market
- Brown (organics) – Goes to a composting plant in Granollers run by CGRVO
- Grey (everything else) – Goes to the town of Mataró to a sorting plant
- Metals (from the deixalleries) – Goes to the company "Ferralles Batlle" and sold on the open market

The blue, green, and yellow bins are co-managed by an Integrated Management System (SIG). The SIG is made up of the ARC, the Association of Catalonian Municipals, Ecoembes, and Ecovidrio (Clapes, 2018).

5.2 Las Recuperadoras

An additional player in the waste recycling system in Catalonia are the "recuperadores," or the middlemen that are purchasing the paper and metals from the waste pickers and the municipalities and selling it on the global market. In Granollers, there are four recuperadores/drop-off points where the waste pickers sell their paper/cardboard and metal, they are: Ferralles Batlle, Llorens, El Roche and Recuprieto. These four companies are privately owned and sell their product to the highest bidder. All of the paper collected by the city of Granollers ends up at Llorens, and all of the metals ends up at Ferralles Batlle, who then sell the material to the highest global bidder. Pictures 1.6 & 1.7 (below) are of the some of the reclaimed materials seen at a site visit to Ferralles Batlle.

Pictures 1.7 & 1.8: Recycled material at Ferralles Batlle


Source: (Rendon – Mollet Del Vallès – November 30, 2018)

6. Zero Waste/Circular economy in the EU and Catalonia

Another factor in the waste management systems of the world is the recent rise in the Zero Waste and Circular Economy philosophies. Since the mid 1990's, many European communities have begun to adopt a Zero Waste (ZW) approach to help move resources away from landfills and incinerators and toward the re-capture of those resources in order to turn them into new products. This philosophy is very similar to the idea of a Circular Economy (CE), "a concept rooted in several different schools of thought and theories that question the prevailing linear economic systems, which assume that resources are infinite" (Rizos, 2016, Abstract). Though many recycling programs aim to reduce waste, ZW and CE supporters aim to not just lower our waste footprint, but to remove it all together.

A strong proponent of ZW practices is Paul Connett. In his book, *The Zero Waste Solution*, Connett states that "historically we have had three answers to our trash woes: burn it, bury it, or cart it out to sea and dump it…it turns out none of these is really a good idea, one is now banned worldwide (ocean dumping), and none actually solves our problems. There is, though, a fourth way – zero waste – that's far better for both the local and global community"

(Connett, 2013, p.1). This "fourth" option has grown increasingly popular in many areas of the world, and it offers a different solution to this growing global issue. Additionally, "the discussion on the circular economy (CE) has attracted a rising interest within global policy and business as a way of increasing the sustainability of production and consumption" (Gutberlet, 2017). Supporters are also eager to argue that ZW and CE are not only the right thing to do for the environment, but also good for the bottom line. For example, "it has been estimated that the transition to a CE in the mobility, food, and built environment sectors could lead to emissions reductions of 48% by 2030 and 83% by 2050, compared with 2012 levels" (Rizos, 2016 p2). Since many regulations create targets for emissions reductions and accompanied by steep fines, these numbers demonstrate how switching to a ZW or CE model could be good for reducing emission levels and for helping businesses financially.

The zero waste philosophy is very popular in Europe and now has many organizations working to change how wastes are understood and managed, such as Zero Waste Europe. Zero Waste Europe challenges communities to manage their resources "in a way that their value and energy are preserved" (Zero Waste Europe, 2016). ZW and CE approaches vary from most waste prevention programs. Most waste prevention programs create economic and regulatory environments encouraging the diversion of waste away from a landfill or incinerator. With a goal of eliminating waste altogether, ZW and CE approaches go a step further by not only encouraging diversion, but also the production and consumption of materials that are durable, repairable, and reusable. Proponents of ZW and the CE argue that "by reducing the amount of waste sent to landfills and incinerators, zero waste strategies are faster to implement, cheaper to operate and safer for the environment than traditional waste management" (Zero Waste Europe, 2016).

One community in Europe that has introduced a ZW strategy is Catalonia. The Estrategia Catalana de Residu Zero (Catalan Zero Waste Strategy), made up of sixty municipalities within Catalonia, works on a variety of different projects and implements multiple approaches in their attempts to achieve ZW. For instance, "since 1998, the Metropolitan Authority of Barcelona has made a transition from incineration to the promotion of recycling and re-use for domestic waste through an ambitious policy plan (Fragkou, 2014, p. 738). While many ZW communities were just starting to form, Catalonian communities had already begun the move toward more progressive waste management program. As a whole, the Catalan ZW strategy is currently working under the following goals:

> 1. Invert the tendency and instead of disposing of 70% and recycling 30% reverse the trend and move towards recycling 70% and disposing of 30% for 2020. Zero Waste -less than 10kg of residual waste per capita- for 2030.
>
> 2. Set up a network of organizations, institutions, companies and universities to plan and implement this change of paradigm.
>
> 3. Promote the best local and international practices of source separation, separate collection, waste prevention, etc. so that they can be replicated elsewhere in Catalonia.
>
> 4. Promote innovation in the production and legislative process in view of creating the right climate for a zero-waste strategy.
>
> 5. Create a Zero Waste Research Center in which the residuals can be examined to detect failures in the design which justify a substitution for a newly designed recyclable product. (Estrategia, 2016)

The Zero Waste and Circular Economy philosophy comes from an environmental perspective and is often provided as an alternative to our modern waste management systems. In Environmental Justice circles, these philosophies are provided as a model against incineration, dumping, or landfilling of municipal wastes. The Catalan Zero Waste strategy plan adds another dimension, and a new set of goals, to the waste management system of Catalonia.

Chapter 2

Waste Pickers and the Informal Recycling Sector

The informal recycling sector plays a major role in international markets, supply and transportation networks, and municipal solid waste programming. This chapter looks at waste pickers as a global phenomenon, including who they are and the prejudice and stigma they experience. Aside from the global perspective, this chapter examines waste pickers in Europe, Spain, Barcelona and the case study city of Granollers. Particular attention is paid to the three past campaigns directed towards the waste pickers in Granollers by the city government, and one campaign by El Xiprer, a non-profit agency who works with the chatarreros.

1. A Global phenomenon

Professor David C. Wilson, the President of the Chartered Institution of Waste Management in London characterizes the informal waste sector as "small-scale, labor-intensive, largely unregulated and unregistered" (Wilson, 2006, p.797), that uses low-technology as a means to complete their work. In the case of waste pickers, he clarifies that "in the context of municipal solid waste management (MSWM), the informal recycling sector refers to the waste recycling activities of scavengers and waste pickers" (Wilson, 2006, p. 797). Regarding waste management, the informal sector varies widely in the types of actions they carry-out. Activities include organized cooperatives providing door-to-door collection of recyclables to individuals scavenging in open dumps, transfer stations or communal containers (Velis, 2012). According to the World Bank, the recycling industry now has more than two million informal waste pickers participating in international markets and extensive supply and transportation networks, and creating a significant impact on overall MSW programming (Hoornweg, 2012). This is especially true in the urban areas of low- and middle-income countries. In this sector, about one

percent of the urban population, or more than 15 million people, earn their living informally in the waste sector (Medina 2010). In urban centers in China alone, about 3.3 million to 5.6 million people are involved in informal recycling (Linzner and Salhofer 2014 as cited in Kaza, 2018). In most cases, these scavengers and waste pickers are poor, disadvantaged, vulnerable and/or marginalized social groups (gypsies, rural migrants, disabled, elderly, the illiterate and religious minorities) who often resort to scavenging as an economic adaptive response (Ezeah, 2013). Wilson points out that many scavengers may not be able to enter formal sector employment because of poor education, physical disability, or legal status, and that they are often badly exploited and paid very low prices for the materials collected, especially in markets where only one buyer exists (Wilson, 2006). Due to these reasons and others, there has been poor inclusion/integration of waste pickers into the formal waste management organizations around the world (Velis, 2012).

In the global North countries, scavengers have always existed, especially during economic hard times and times of war (Medina, 2001). In Europe, informal collectors of recyclable materials gradually died out as a result of the modernization of selective collections (with some resistance only from metal scrap collectors), leaving space for informal operators to reuse. However, in the EU Eastern countries, characterized by lower incomes and less evolved waste management systems, the economy of informal recyclable collectors is still a major phenomenon. (Luppi, 2013). According to Scheinberg et al. (2016), most waste pickers in the EU belong to one or more of three vulnerable groups:

- Persons of Roma ethnicity, who have very low educational levels and are the targets – especially in Italy – of a range of social exclusion measures.

- Internal and cross-border migrants and refugees without legal status or lacking formal identity papers.
- Young people, the elderly, women heads-of-household, homeless people, and others who are excluded from the labor market.

1.1 The activities of the informal recycling sector

Describing the activities of waste pickers, Jutta Gutberlet, author of the book "*Urban Recycling Cooperatives: Building Resilient Communities"* states that,

> Worldwide, waste pickers have engaged historically in resource recovery by retrieving materials from the waste stream. Organized in cooperatives, associations, unions or other forms of community-based arrangements they collect, sort, and reintroduce recyclables to the industry. Some of these groups add value, by transforming materials (e.g., plastic into pellets) or by generating new products from these materials (e.g., washing lines from PET bottles; paper pulp into building blocks). These groups also perform educational services, by communicating with citizens, schools, resident associations and industries about selective waste collection and recycling, contributing to environmental education and making industrial processes more environmentally efficient (Gutberlet, 2017).

As Gutberlet points out, there are many *social benefits* associated with the informal waste sector. Waste pickers are often highly talented at identifying wastes with potential value. They collect materials that have been discarded as waste and add value to them by sorting, cleaning, altering the physical shape (often to facilitate transport), or by aggregating materials into a commercially viable quantity (Wilson, 2006). Or to state it in a more poetic form, "salvagers trace specific routes, are perfectly oriented and recognize clearly their escape routes and safe routes. They flow rhythmically by urban space, rhythm and time" (Chemas, 2016, p.67). Moreover, informal recycling systems can be highly efficient. The work of the Informal Recycling Sector (IRS) is not solely walking the streets with a cart collecting materials and objects, but "a group of activities, division of functions, processes and conscious decisions to select, separate, transport, improve and sell items for reuse and recyclable materials" (Porras, 2016, p.222). For example, "recovery

rates as high as 80% are achieved by the Zabbaleen in Cairo due to intensive manual sorting and their expertise at extracting waste with value" (Wilson, 2006, p. 801). One of the biggest benefits of including the informal waste sector (as has happened in some communities) is providing employment and a livelihood for impoverished, marginalized and vulnerable individuals or social groups (Medina, 2000), who are often in areas of high unemployment. Wilson identifies 4 categories of the informal waste sector as a basis for discussion:

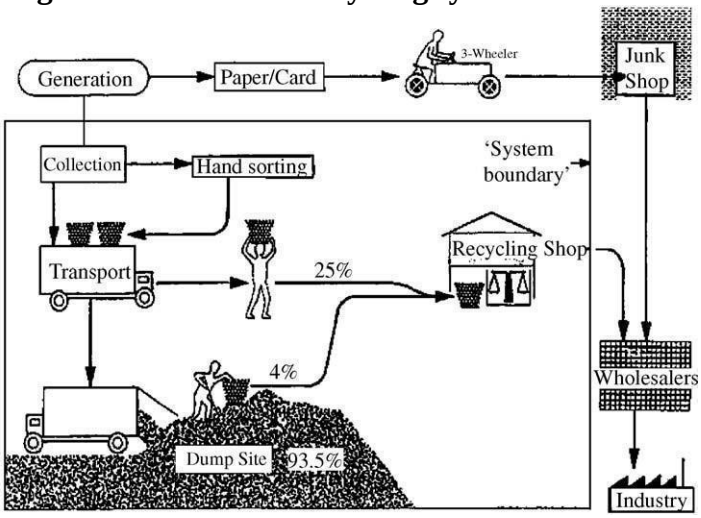
1. Itinerant waste buyers: Waste collectors who often go from door to door, collecting sorted dry recyclable materials from householders or domestic servants, which they buy or barter and then transport to a recycling shop of some kind.

2. Street waste picking: Secondary raw materials are recovered from mixed waste thrown on the streets or from communal bins before collection.

3. Municipal waste collection crew: Secondary raw materials are recovered from vehicles transporting MSW to disposal sites.

4. Waste picking from dumps: Waste pickers/scavengers sort through wastes prior to being covered.

Figure 2.1: Informal recycling system



Source: (Wilson, 2006)

What the waste pickers are collecting, the volumes of their collection and the degree and sophistication of their operations influence overall collections of the formal MSWs.

> In cities like Buenos Aires, waste pickers tend to remove recyclables after the waste is placed curbside. The resulting scattered waste is more costly to collect: in some cases, the value of recyclables is less than the extra costs associated with collecting the disturbed waste. In some cities informal waste pickers have strong links to the waste program and municipally sanctioned crews can be prevented from accessing the waste as informal waste pickers process the waste. Waste pickers can be formally or informally organized into groups or unions with varying degrees of autonomy and political voice (World Bank, 2012, p. 14-15).

In short, there is not one kind of waste picker nor one situation that explains their phenomenon. They are highly diverse in terms of ethnic and gender makeup, history in the business, relationship with the formal system, and varying degrees of legality, both in their legal status, and the work that they are carrying out. In regard to this investigation, the waste pickers generally fall into the second category of Wilson's outline, though elements of the first category can also be found. A further discussion takes place in the analysis section.

1.2 Prejudice and stigma

Worldwide, waste pickers are the recipients of numerous negative perceptions that reiterates their social marginalization and undervalues the important task they fulfill in recovering and redirecting materials into the recycling stream (Gutberlet, 2010). Moreover, waste pickers are often women, children, the elderly, the unemployed, or migrants, in other words, the most vulnerable members of our society. They generally work in unhealthy conditions, lack social security or health insurance, are vulnerable to fluctuations in the price of recyclable materials, lack educational and training opportunities, and face continual social stigma (Kaza, 2018). The widespread assumption behind negative appraisals of scavenging, is that it is degrading and dirty (Reno, 2009).

This stigmatization and prejudice happens to waste pickers wherever they work. Gutberlet's work with the waste pickers (binners) in Canada, show that "the binners are frequently associated with filth and are stigmatized and harassed by officials and the general public" (Gutberlet, 2010, p. 3340). In one study, Gutberlet analyzes a government campaign aimed at encouraging consumers not to leave their waste out for the binners to scavenge, arguing that the waste pickers could be stealing their personal information.

Figure 2.2: Capital Regional District promotional advertisement

Source: (Gutberlet, 2010, p.3346)

In the above campaign flyer (figure 2.2), the figure and text represent binners as an urban "wild" animal who feeds from refuse and may steal identity from the general public. These types of campaigns decrease the value of the recyclers and the work they do, and further contributes to their marginalization and social exclusion (Gutberlet, 2010). Moreover, in a study concerning waste pickers at a landfill in the state of Michigan in the US, the author points out that "it is as if landfill workers exchange substance with the material with which they work and become waste themselves – worthless and without potential" (Reno, 2009, p. 40).

The prejudice and stigma that waste pickers are exposed to is often reinforced through government campaigns such as these. Instead of highlighting the environmental contributions

they are making or the social reality they are living, articles like these give the public the idea that waste pickers are only participating in illegal activities and continually having struggles with law enforcement. In order to change the prejudice and stigma that comes with waste picking, society will need to re-assess the perception of waste pickers. As pointed out by Gutberlet,

> "Changing the perception of waste from something dirty, unwanted, without value towards waste as a resource, as something valuable which can be reused or recycled will also change the perception of those involved in its recovery, recognizing the opportunity for recovering their citizenship. In reality informal recyclers and binners are environmental stewards. They collect recyclables not only from waste bins but often also out of the litter carelessly left behind in streets, parks, drainages, *etc.* These facets of the binners' work need to be recognized. Propagating the image of 'resource recoverer' and environmental protector is an important strategy to support the social inclusion of those that until now are the most marginalized in our society. (Gutberlet, 2010, p. 3351)

Seeing waste as a resource with value is key to changing human's relationship to the natural world, and our collective perception of waste pickers. Until that happens, waste pickers will continue to be seen as trash.

2. Waste Pickers in Europe

Though there is abundant research on waste pickers in the global south, there is very little research, though more and more are being established, in the global north (Chemas, 2016). The research that does exist in the north is mostly concentrated on the southern border of the United States, Canada and Europe. In Europe, the types of informal systems that exist vary, often divided between countries within the European Union (EU) who have formal waste management systems with informal workers on the fringe, and countries adjacent to the EU who have a strong informal waste system, and are needing to create a formal one in order to join the EU. The following table (table 4) shows some of the differences in waste pickers between those in Europe and those outside of Europe.

Table 2.1: Differences between European and non-European informality in the re-use and recycling sectors

Parameter	Outside Europe	Europe
Existence and status	Waste picking occurs widely in large cities and where there is growing welfare; numbers in Africa are small, in emerging economies in Asia and Latin America very large	European informal recycling well established, and the numbers in south-east Europe are moderate to large
Social identifiers	Internal (rural-urban) migrants, unemployed and homeless persons, women heads-of-household, ethnic and religious minorities	Young men of Roma ethnicity dominate among 'full-time' waste pickers
Full-time/part time	Colombian researchers divide waste pickers into 'authorised', 'unaffiliated', and 'street persons'	Many European informal recyclers see waste picking as a part-time or seasonal alternative to other forms of work
Occupational recognition	Occupational recognition for 'full-time' waste pickers is growing	Occupational recognition is extremely rare and outside of European statistics
Informality in the service chain	Informal service provision (micro-privatisation of waste collection, is common in the service chain in sub-Saharan Africa and growing in Asia	Service chain informality is limited to under-served rural areas, or to 'side' jobs such as cleaning out attics or removing bulky waste
Barriers to legalisation	Experiences in Asia and Latin America have produced progress in legalising and integrating informal recyclers in the framework of municipal waste management (and the service chain)	There are a few fragile examples of legalisation of re-use operators, and some intentions to legalise and integrate recyclers of packaging, but the taboos and resistance are very strong
Potentials for integration	Integration in the service chain as official recyclers has a good basis and potential to expand; the introduction of EPR systems for packaging in countries like South Africa and Indonesia appears to offer interesting new opportunities	Integration in the service chain appears to be extremely difficult; better potential exists in relation to EPR systems new EU directives on waste prevention and re-use

Source: Elaborated by the authors based on Dias, 2006; Gutberlet et al., 2016; International Labour Organization, 2004; International Trade Union Confederation, 2014; Linzner et al., 2011; Mendonça, 2015; Ramusch and Obersteiner, 2012; Scheinberg, 2011; Scheinberg and Anschütz, 2006; Scheinberg and Nesić, 2014; Schmied et al., 2011; Sim et al., 2013; Vaccari et al., 2013.
EPR: extended producer responsibility; EU: European Union.

Source: (Scheinberg, 2016, p.15)

As can be observed from table 2.1, within Europe informal recycling (especially in Eastern Europe) is fairly well established and mostly dominated by people with a Roma ethnicity, who participate in the work on a part-time or seasonal basis. As well, outside of Europe there is more micro-privatisation from waste pickers, and higher rates of inclusion of the IRS into the formal waste management system. It is important to note that this table is a generalization, and a clearer distinction is made in this investigation.

Around the globe there are many different names to describe waste pickers. As pointed out by Gutberlet, they are called *waste pickers*, *scavengers* or *rag pickers* in India and other English speaking countries in the global South, *catadores* in Brazil, r*ecolectores* in Chile, *recuperadores* in Peru, *clasificadores* in Uruguay, *zabaleen* in Egypt, *cartoneros* in Argentina,

recicladores in Colombia, *mikhali* in Morocco, *minadores* in Ecuador, *pepenadores* in Mexico, and binners in Canada (Gutberlet, 2016, p.6). Western Europe has had their own history of waste pickers with varying names, especially during the early twentieth century. These groups include *wharf rats, tinkers, rag and bone men*, *mudlarks*, *traperos*, *drapaires* and *ragpickers*, all living off the waste of their fellow citizens (Gowan, 1997). Today in Spain, this group of waste pickers are mostly referred to as *chatarreros* since they are mostly seen collecting *chatarra*, a generic word for metal, though they frequently collect cardboard as well. Even though the chatarreros are mostly collecting cardboard and metals, they will take whatever they can make money from, as ultimately, the degree to which people recycle primarily comes down to whether or not someone can derive some economic benefit from the waste (Minter, 2013).

3. Waste Pickers in Spain

As noted in Table 2.1, and as seen in picture 2.1 below, like other countries in Europe, most of the informal recycling sector of Spain is made up of members of Roma communities, operating with a high level of sophistication. However, there has been an influx of (mostly) men coming from Sub-Saharan Africa who arrive and form their own collectives and systems, or work in partnership with the prior informal economy. According to Ramlov, "sub-Saharan African migration to Barcelona peaked between 2008 and 2009" (Ramlov, 2016, p.180).

Picture 2.1: Waste pickers of Madrid, 1965

Source: (Porras, 2017, p.104)

Like immigrants everywhere in the world, the choice to migrate is highly correlated with the income opportunities of the destination country. However, immigration decisions, especially for irregular migrants, are based on a host of additional factors including the presence of migrant networks, socio-cultural expectations and obligations, and migration costs (Ramlov, 2016). A unique phenomenon of the African migrant experience is that the country of choice is often influenced by ex-colonial relations. For undocumented migrants, considerations like historical ties, cultural proximity and language hold less importance in the choice of destination country. Instead undocumented migrants prefer destinations with less restrictive immigration policies and where entry is considered less difficult (Ramlov, 2016). Moreover, many undocumented immigrants favor countries, or even specific cities and towns based on the counsel of relations who came previously (Ramlov, 2016). For many informal workers in Spain, there are two ways of coming to Spain, either overland through North Africa and then by boat across the

Mediterranean Sea, or by entering legally through an official visa, and then staying in Spain once the visa has expired (Ramlov, 2016).

As mentioned previously, although there is in-depth research on waste pickers in the global south, there is very little research in the global north (Chemas, 2016), where citizenship is the biggest challenge. This difference is explained by Ramlov,

> "Such studies have thus largely focused their attention on the poor working conditions and occupational health hazards that waste-pickers face while highlighting their contribution to developing countries' broader waste management systems. While these studies have provided much needed attention to the plight of waste-pickers around the world (notably in Brazil, India, China and several African countries), they do not represent the experiences of waste-pickers in developed world contexts such as Spain, where the majority of waste-pickers are irregular migrants rather than communities that, while marginalized in society, are citizens" (Ramlov, 2016, pp. 177-178).

Consequently, it is not a lack of employment opportunities available in Spain that push people towards the informal waste sector, though the unemployment rate is still quite high, but their citizenship status which excludes the chatarreros from entering into the legal labour market. As a result, "policies aimed at waste-pickers in developing countries which seek to promote the full productive inclusion of waste-pickers within integrated waste management systems would not work for those in developed world contexts such as Spain who engage in the work as a transitional means of survival which none consider to be a long term career" (Ramlov, 2016, p.178).

Aside from a lack of employment opportunities, people without citizenship are put in additional vulnerable situations such as limited access to health care and potential conflicts with housing. As pointed out, compared to legal workers, many of the waste pickers are exposed to more "precarious living conditions, exploitative work conditions, low income, lack of health insurance, restrictions on mobility, lack of proper housing, hunger, homelessness, and social stigmatization" (Ramlov, 2016, p. 182). Moreover, they have no political power over their own

destinies, so their contributions are often not counted in waste collection numbers, and they are never consulted nor invited to participate in waste management conversations with the formal waste management sector. It is well-documented (Porras, 2016; Chemas, 2016; Ramlov, 2016; Pradel-Miquel et al, 2017) that most undocumented waste pickers would not choose to do this work if they received legal status and had an opportunity to find other employment, but instead, are doing it as a means to survive.

4. Waste Pickers in Barcelona

Documents show that Catalonia has had waste pickers operating since the late 1800's, and most likely for many years prior. There are two histories of waste pickers in Barcelona that have received the most attention: the *drapaire*, and the *Nave*. The Drapaire are the "rag pickers" of Barcelona that operated from the late 1800's to the late 1900's, and the Nave is a space in Barcelona, which at one time included an organized collective of modern-day drapaire, often called "*chatarreros*," who had an unique experience with their neighbors and the local government.

4.1 Barcelona's history of informal waste pickers

As mentioned prior, informal waste pickers have existed in Barcelona for many years. The rags recovery trade appeared in the 18th century with the rise of Catalan merchants in the paper market, called "*drapaire*" (or rag pickers). Though there is no written record found prior to the 18th century, based on research from other European cities, it is most likely that some form of the informal recycling sector existed at varying points in Catalonia's history.

The drapaire play a unique role in Catalan culture from the late 1800's to the late 1900's, while their business expanded and waned at different points in time. As explained by Fernández (2015), in the early 1900's a majority of drapaires were Jewish, and the rag business was booming.

> Inside the walled city, the drapaires opened numerous establishments in which they stored the rags and maintained the stables for their carts and the animals. During their day they made tours both in Barcelona and to the municipalities that were then added to the Catalan capital. They usually charged by weight, and for this, in their warehouses they had scales on which they placed sacks full of rags… most of them were very simple men, even some of them illiterate, but in turn denoted a natural intelligence as well as personal qualities that made them a good fit for business (Fernandez, 2015).

During World War one, the work of the drapaires was especially valued and grew, as they were no longer "a mere rag picker," but collected additional objects that were seen as useful, including books, cans, metals, lamps, shoes, tools, and other materials (Fernández, 2015). Due to the scarcity of materials during the first world war, scrap metal and second-hand dealers gained in popularity.

After World War one, rag collection went way down since the amount of money they received for the rags decreased. Nevertheless, the drapaire continued to collect additional materials, and many set-up shops (as seen in picture 2.2 below) that dealt in buying and selling old furniture and other useful objects (Fernández, 2015).

Picture 2.2: An old Trapería in Barcelona

Source: (Fernandez, 2015)

From the first world war through to the international exhibition of 1929, the number of ragpickers greatly increased. During this time, trade was regulated and working conditions were negotiated through the "Sindicato de Drapaires de Catalunya," or Ragpickers trade Union of Barcelona (Porras, 2017).

During the time of the Second Spanish Republic (1931-1939), the trade of the drapaire of Barcelona was regulated and the rights of those who participated in the practice were legally recognized. During the Civil War, the "Sindicato de Drapaires de Catalunya" came under the name of "Collectivized Draperies." After the Civil War, "the craft of the drapaire reached a level of great importance, becoming a prominent collective, acquiring the useful waste that had been caused by the destruction by the bombings" (Fernández, 2015), and continued to grow. For the next 30 years, the work of the drapaire was a profitable business, through the collection and sale of recovered everyday objects.

In the 1960s, the modernization of the waste collection system occurred and ushered in a progressive decline of the drapaire. Some drapaire stayed in the business to become modern-day *recuperadoras*, or middle-men (more on this will be discussed in the analysis sections), while others moved on to different professions. From the 1980's on, the traditional drapaire were gone,

and newer people, often from more marginalized and immigrant communities took up the work. These new drapaire or "*chatarreros*" work in the informal sector, often because of their citizenship status (more on this in chapter 4), or their lack of other opportunities. These chatarreros are usually seen driving around in vans or pushing a supermarket cart around the city, looking in waste containers for useful items, or collecting material (mostly cardboard and metals) from local businesses. They then sell the materials to middle-men, who sell it on the global market. There are varying degrees of sophistication and organization amongst the informal waste sector of Catalonia. One of the most organized was the Nave.

4.2 The Nave

Most of the academic papers (as well as Carrión's (2016) graphic novel, *Los Vagabundos de la Chatarra*) regarding waste pickers in Barcelona is centered around the "Nave." The Nave was a block of abandoned industrial warehouses in the Poblenou district in east Barcelona. At the end of 2011, in the district of Poblenou, 300-600 undocumented immigrants were residing in the Nave with no electricity or running water (Ramlov, 2016). The Nave became a refuge for some of these immigrants, especially those from Sub-Saharan Africa, including Senegal and surrounding countries. The Nave became a location for collection, sorting, and processing "chatarra" (metals), glass, paper, and other products. The majority of these immigrants were participating in the informal recycling sector of Barcelona, collecting and transporting these materials in shopping carts from the containers to the Nave, and eventually to the buyers.

However, the Nave represented more than a business to the residents that lived there. "The Nave represented the geographic unity of migrant struggles and aspirations and offered a unified space in which to push for the mobilization of their rights" (Ramlov, 2016, p.176). It is pointed out that the work of salvagers in Barcelona is not reduced to walking the streets with a

cart collecting materials and objects, but more than that. “It is a group of activities, division of functions, processes and conscious decisions to select, separate, transport, improve and sell items for reuse and recyclable materials” (Porras, 2016, p.9). Within the larger businesses that existed, it is an activity that functions with a high level of organization, focus, and physical labor.

The waste pickers of Barcelona participating in this enterprise suffer high levels of exclusion. They are a collection of social groups that are historically outcasts in Spanish society, black, immigrant, waste picker and squatter, experiencing countless prejudices and forms of social stigmatization with each one (Chemas, 2016). Not only do they suffer from systemic racism, they also deal with the stigmatization of being an immigrant, of being “other,” with the added restriction of being undocumented. Moreover, they are doing work that some would argue is illegal, as there is still debate regarding who owns waste, and at what point it becomes state property. Finally, the chatarreros of the Nave were living illegally in abandoned warehouses trying to create a business as a means of survival. Chemas sums it up this way:

> In this way, the Senegalese scrap metal dealers of Barcelona, in addition to experiencing the effects of an exclusive social distinction objectified in their own daily lives and in the practices of sociability that it implies beyond the immediate environment, also live a multiple structural marginality: 1. With respect to the labour market, given its expulsion from the economic-productive circuit and the impossibility of reintegrating into it; 2. In relation to the spheres of consumption, while remaining apart from the most basic elements and infrastructure for a decent life; 3. because they experience in their daily lives the withdrawal of the State and the inability to gain access to the benefits of social welfare (increasingly precarious and unattainable); and 4. A physical marginality that is expressed, on the one hand, in the spatial segregation and, on the other, the decline of its physical environment (Chemas, 2016, p. 42).

The multiple structured marginality that Chemas describes carries additional hardships which are experienced by the chatarreros of Barcelona. Because the wage is so low, their work does not allow for savings, and it provides very little surplus to send back to their families, therefore, they are living in a constant state of poverty and vulnerability. Their daily income covers their most basic costs, mainly accommodation and food, while recreational activities and opportunities are

at a minimum (Porras, 2016). Like the waste pickers in other parts of Spain, the Sub-Saharan waste pickers in Barcelona also are mostly undocumented, and they too experience the challenges that non-citizenship brings as mentioned above.

Roughly two years since the founding of 'the Nave,' the Barcelona city government ordered the residents out, and shortly afterwards demolished the buildings the residents were living in (Ramlov, 2016). According to Chemas, the Nave was not the only location where immigrants were evicted, but also in the neighbourhoods of Sant Andreu and Poblenou (Porras, 2016). From 2011 – 2015, there was a "systematic eviction system" aimed at the chatarreros of Barcelona in which people living in up to 10 different buildings were evicted, and their homes were destroyed (Chemas, 2016).

The demolition of the Nave resulted in the physical displacement and geographic dispersal of the Sub-Saharan African migrant community, turning their lives upside down (Ramlov, 2016). The fallout from this system of repression was that the activities, along with the waste pickers themselves, were displaced to smaller enclaves (Porras, 2016). This disruption happened on two different levels. On the physical side, it removed them from the place that they slept, ate, and stayed safe, while also removing them from their economic means of employment and opportunity. On the psychological side, it removed them from their socio-economic networks facilitated by the work of the chatarra, along with dismantling the political powers that were created at the Nave (Ramlov, 2016). With their political power weakened, the chatarreros not only had a weaker ability to articulate their demands, but also their informal activities were more easily repressed by the local government (Pradel-Miquel, 2017). The local government made promises assuring that nobody removed would be homeless, coupled with an attempt at legalizing some of the workers. The result a year later was six square meter rooms in cramped

living conditions, and 87 people processed for work and residence permits. Of the 87 people processed for work and residence permits, only 7 were approved (Ramlov, 2016).

Since the displacement of the residents and the destruction of the buildings, there have been some movements on the side of the waste pickers, and also some movement on the side of the government. From the end of 2014 through the middle of 2015, there were demonstrations by the waste pickers claiming their right to work and to a decent life (Chemas, 2016). In July of 2014, a training program to legalize the work of the chatarra based on the experiences of South and Central American waste-pickers was initiated (Ramlov, 2016 p. 187). In 2015, a waste cooperative of waste pickers called Alencop Cooperativa, was created by Labcoop, a City Council entity, which included a 3-year grant to collect home appliances, scrap metal and other household waste (Alencop, 2019). Currently, 75% of Alencop's funding is from the government of Barcelona, and 25% are from sponsors, with the goal of eventually being self-sufficient.

Picture 2.3: Alencop worker

Source: (Rendon – Alencop - May 31, 2018)

When I toured the facility on May 31 of 2018, Alencop had 25 employees, and their contract was going to end in 2019. Though Alencop seems like an earnest attempt at trying to create a legitimate business, it seems like it still has a long way to go. Since the beginning of 2018, they were still having legal barriers to the second-hand store they were trying to create, and their business of collecting materials was based on the public knowing about them and then calling the Alencop to ask them to come pick up the materials. The hope is to create a business around this work, but my experience when I was there was that nobody was working, and it still seems like it would need to be heavily subsidized by the government in order to be able to succeed. Today, though there are still numerous waste pickers working on the streets of Barcelona, Alencop is the only working cooperative organized and supported by the government.

5. Waste Pickers of Granollers – previous campaigns

Like other cities in Catalonia, Granollers, the location of the case study, has also had an IRS for many years, mostly from the Roma community, but more recently from sub-Saharan Africa. The specifics of the investigation of these people is discussed in Part III of this thesis, however, prior to this body of work, the City of Granollers conducted three campaigns regarding the waste pickers living within the city limits. The first campaign was in 2013, the second in 2014, and the last one in 2017. Additionally, the non-profit, El Xiprer, conducted their own campaign, "(In) Visibles," in 2015 to highlight the contribution that the waste pickers have made to the community and to put a name and story with the new faces working in Granollers. The following is a summary of the main points of the previous campaigns.

5.1 2013 Campaign

The 2013 study focused on "civility" of the people who work in the collection of recycled materials (i.e. the waste pickers). On June 11, 2013, the city of Granollers started an information campaign regarding public space throughout the city (City of Granollers, 2013). The city outlined a list of targeted actions for the waste pickers of Granollers, specifically in relation to their shopping carts, the following was demanded:

- Do not park cars on the sidewalks.
- Do not tie the carts in the street furniture.
- Do not park the cars in the space for the parking of vehicles.
- Do not disassemble or manipulate items in the middle of the public road.
- Collect the items you don't want and return them to put in the corresponding container.
- Do not circulate on the road.
- Do not go down the sidewalk to spaces that are not adapted.

During this process, 57 men were interviewed. Of the men interviewed, 32 were from Gambia, 13 from Senegal, 6 from Guinea Conakry, 1 from Mali and 1 from Ghana, 2 from Morocco, and 2 that were Spanish (1 Spanish-born native of Gambia). In 2013, the majority of the chatarreros were between 26 and 45. 17 people were between 18 and 25, and 2 people were over the age of 65. At the time of this study, there were two points of collection for the waste pickers of Granollers, the Recuperaciones Prieto, and Llorens. During this campaign "the price of cardboard ranged from 8 to 10 Euros for 110 Kg. (and) the weight is equal to 2 carts" (City of Granollers, 2013).

When this study was done, it was believed that there was also a group of young people between approximately 16 and 18 years old that were active in this activity during market days, and the city made an estimation that 19% of the 47 chatarreros were legally in the country. It was further noted that these people are sometimes ashamed to do this type of work but it is the only

option they have. It is seen as a job that requires a lot of effort for a very small gain, yet in spite of the difficulty that entails, it is the only option these men have for employment (City of Granollers, 2013).

5.2 2014 Campaign

On March 18th of 2014, a 7-day study was conducted where the city of Granollers started making observations at the recycling collection points. This study was a follow-up to the recommendations of the 2013 study with the goal of making the waste pickers aware of and abide by the rules created in the 2013 campaign, to count how many people participate in this occupation, and to make sure the work of the waste pickers was not causing discomfort to the citizens of Granollers streets (City of Granollers, 2014).

During the 2014 campaign, the City of Granollers spoke with 69 people, 70% of which were immigrants. The demographics were very similar to 2013 with the majority being from Senegal or Gambia. In addition to the countries mentioned in the 2013 survey, there were also people from Mauritania, Pakistan, Congo and Guinea Bissau. The ages of the people were similar to the 2013 study, with the majority being between the ages of 26 and 45. Only 3% (2) of the 69 people interviewed were under the age of 18, and they were both 17. Most of the people interviewed said that they arrived in Spain mostly between 2004 and 2007. The earliest of these was one person each year from 1980 – 2000, and then slowly the number increased. The highest number of people arrived in 2004 (9), 2007 (10), and 2013 (8). The majority of the chatarreros interviewed had been doing this job between 3 - 5 years, with one doing it for 10 years, while one had only been active in this job for a week.

At this moment of time (2014), the study records Llorens, Recuprieto, and Batlle as the three drop-off points buying the material from the waste pickers, though the 2014 study says that

Recuprieto is buying material from people “with private cars and vans.” This study was mostly a follow-up to the 2013 study, to determine how the campaign has been working.

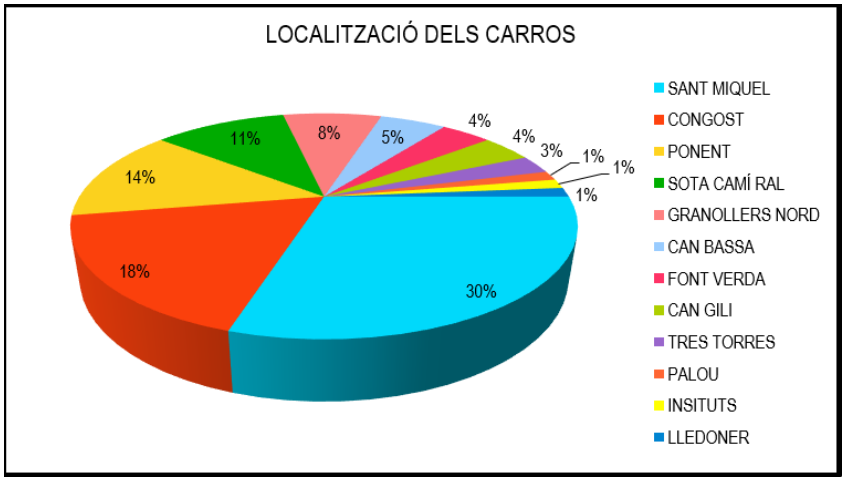
Here is one of the signs:

Picture 2.4: Prohibido

Source: (City of Granollers, 2014)

During this investigation, it was recorded that 74 shopping carts were spotted around the City of Granollers.

Figure 2.3: Location of the carts



Source: (City of Granollers, 2014)

This pie chart depicts the location of the 74 different shopping carts that were spotted during the investigation.

Here are the conclusions of the 2014 study:

- 69 people and 74 carts were located
- Predominant Nationalities are Senegal and Gambia
- Year of arrival in Spain between 2004 and 2007
- Majority between the ages of 26 and 45 years old
- People have been collecting cardboard for 5 years now, however more people started collecting in the last 6 months
- There was awareness of the city rules prior to the city explaining them
- Many know that it is necessary to maintain hygienic precautions when it comes to searching in containers
- A lot of the people are undocumented
- Ferralles Batlle is growing since its opening less than a month ago
- Unknowing of the language, although many have lived here a long time
- Many neighbors partner with the waste pickers and the save material for them
- For the vast majority, this is their only income
- The only ones who have come here directly and have begun collecting cardboard are between the ages of 17 and 25 years old, the others had already previously recognized work

- There are local people who sell scrap metal and cardboard, but prefer to do the collection in cars or vans, we have only found one that uses a cart
- At night, the waste pickers might take from each other's carts
- There have been more shopping carts counted tha people who do this work
- The city will do another round, along with a map, to further explain where it is allowed to leave the shopping carts
- There are 8 new people since the first campaign. additionally, more people have been identified, but do to not knowing the language or distrust, have not wanted to talk to the city (City of Granollers, 2014)

5.3 2015 (in)Visibles campaign

In 2015, the non-profit, El Xiprer, created a campaign to highlight the contributions that the waste pickers made to Granollers and the environment. El Xiprer conducted their own study.

According to the study, in 2009, a total of 1,161 tonnes of cardboard were picked up through the formal waste management system in Granollers, and by 2015, 258 tonnes were collected, a decrease of 88%. Moreover, the commercial door to door collection in 2009 was 553 tonnes and by the year 2015, it was less than 21 tonnes. It is estimated that the crisis caused a decrease of around 20% of commercial cardboard paper, the remaining tonnes are collected by the waste pickers (El Xiprer, 2015). During this study, Granollers staff (as seen in figure 2.4) estimated that 15 percent of waste collected in Granollers was paper and cardboard.

Figure 2.4: Composition of a Granollers garbage bag in 2015

Source: (El Xiprer, 2015)

A waste picker named Ansumana, (one of the 80 at the time) provided the following information

> -You can move about 300 tonnes per month of commercial cardboard paper
> -They work about 52 hours per week
> -Estimated maximum income of about 350 euros per month per waste picker, the price per tonne of cardboard paper with these numbers was around 90 euros a tonne.
> (El Xiprer, 2015)

5.4 2017 Campaign

This study was conducted the 21st of March in 2017. The study was also conducted to promote the civility campaign and let the waste pickers know about El Xiprer. Additionally, there was a goal to make a comparison with the previous few years and see what types of intervention could be implemented (City of Granollers, 2017). For this study the authors went back to Batlle, Prieto, and Lorenzo (the recuperadoras) to assess the situation.

<u>The conclusions from this study are the following</u>:

- The vast majority of waste pickers have shown a willingness to talk to us (city employees), grateful for the campaign and are collaborative and receptive. Some are more reserved and suspicious, but it is a minority.
- We think that there may be about 100 people doing this work, many of them full-time and some partially.

- We have spoken with 82 people, 81 men and 1 woman, mostly immigrants of African origin who are without family here, without legal documentation, or documentation but without finding a job and therefore do not have sufficient resources to be able to live with quality. In general, the collection of cardboard is the only source of income they have, and they also send a portion of that money to their families who live in their countries of origin.
- The people that we have found without registration and/or without a health card, we have delivered them to El Xiprer because it is essential that everyone has registration and access to healthcare.
- Most know El Xiprer and know they can go from Monday to Friday, although some complain that is too far for them or that the schedule does not work smoothly with their carts.
- The location of the carts is varied (private sites, railroad tracks, handball Pavilion behind...) and are located in different districts as they try to park near where they live to be able to watch the carts and easier mobility.
- The average carts that fill a day is 1-2, being a good day Thursday that is market day, and in general, try to park in hidden places and/or that do not affect the rest of the residents of the city.
- In general, there is an increase in the number of men who do this work. Before they could fill up to 3 carts and now can barely fill up 1. Those who work more can fill up 2.
- Since April we are seeing new arrivals from Gambia, who come without speaking Catalan or Spanish or very little. In some cases, communication with them has been possible using English, but not everyone has a good level of English.
- Regarding the drop-off sites, they say that in March the sale price has risen (12 cents a kilo), but in April the price has fallen and ranges between 8 and 9.5 cents.
- There are elderly men that have a hard time working the carts.
- Many of them have very bad hands (dry, with cuts and wounds, etc.). Some do not use gloves.
- At Llorens there are many vehicles, and at Ferralles Batlle, there is a lot of movement of cars. The recuperadora Prieto is the one that apparently has less movement.
- There is quite a bond between the waste pickers and the business owners, especially in the Center. There is also some solidarity among the neighbors of Can Bassa. (City of Granollers, 2017)

In 2017, there was a concerted effort to help improve the waste pickers knowledge of the culture, laws and language, and trying to work on employment plans. The people that do have a profession and legal documentation are having difficulties finding a job and are at an age close to retirement. This study also mentions that the average age has risen a little, but has mostly stayed

the same as the previous campaigns. The majority of the people are from Senegal and Gambia, but now some are Spanish, and 6% are from Romania. In this study, of the recuperadoras, Battle collected 40% of the material, Llorens 24%, and Recuprieto 8%.

It should be pointed out that these campaigns were one-sided, with a directive coming from the Granollers government, and directed at the waste pickers of Granollers. This exemplifies one type of exclusion that the waste pickers face, that is that they are rarely asked to participate in the public debate with policy-makers on their work and role in resource recovery, even though their work is helping the formal system meet its recycling and re-use goals (Gutberlet, 2010).

Chapter 3

Environmental Justice and The Right to the City

This chapter looks at the environmental justice (EJ) framework as a lens to view the chatarrero experience. It begins with the founding of the environmental justice term, a description of its main successes, and the most prominent definitions that have historically been used. This chapter then considers the differences between EJ perspectives between the United States, where EJ was founded, and the European Union, where there is more of an emphasis on class rather than on race. Next, the limitations of the EJ framework are examined, since although EJ works for some aspects of the chatarrero experience, it doesn't work for all aspects, particularly its lack of a focus on labor and immigration politics. Therefore, a discussion is provided that examines some different attempts to combine environmental and labor frameworks. Finally, Lefebvre's 'the right to the city' framework is also examined as an additional way to understand the chatarrero phenomenon. Combining the relevant parts of the EJ framework with Lefebvre's concepts of space, commons, and citizenship, offer a more complete context to understand the chatarrero experience.

1. History and successes of environmental justice

The environmental justice (EJ) framework started out as a distinctively American perspective, though it is now used globally to understand an intersection between humans and environmental struggles. The term EJ was elevated to the national political agenda by Robert Bullard (Warrick, 2015). In 1979, Bullard conducted a study on the spatial location of all the municipal landfills in Houston, TX stemming from a class-action lawsuit. From this investigation, Bullard realized that the garbage dumps, landfills, and incinerators were in neighborhoods where "black

communities" were living, and because of this, they were more likely to suffer greater risks from these facilities than the general population (Warrick, 2015). According to Bullard, NIMBY (Not in My Back Yard) was replaced with a PIBBY (Place in Blacks' Back Yards) policy, where "the all-white, all-male city government and private industry targeted Houston's black neighborhoods for landfills, incinerators, garbage dumps, and garbage transfer stations" (Bullard 2005, p. 44). Bullard's research continued to shed light on the relationship of race with the location of these unwanted facilities. Regarding Houston, he states,

> Thirteen solid waste disposal facilities were operated by the city from the late 1920s to 1978: eleven in black areas; one in a Hispanic area; one in a white area. At the same time, there were four additional, privately owned, facilities: three in black areas; one in a white area. The city operated eight garbage incinerators (five large units and three mini-units): six in mostly black neighborhoods; one in a Hispanic neighborhood. (Bullard, 2005, pp. 46-47)

From Bullard's perspective, the black neighborhoods suffered a variety of set-backs due to "institutional racism" that lowered residents' property values by accelerating the physical deterioration of their neighborhoods, and creating "dumping grounds zoned for garbage" for unwanted facilities associated with waste, such as salvage yards, recycling operations, and automobile chop shops (Bullard, 2005). From Bullard's work, a movement of Environmental Justice was started. The objectives of the EJ movement have included equal protection from environmental risks and hazards, and the "right" for people to live in communities that are environmentally safe, regardless of race or income (Warrick, 2015). As Barca (2012) explains, the EJ approach has developed as a way to acknowledge and contrast the social inequality of environmental costs, and is characterized by mixing, explicitly and intentionally, scientific and civil rights discourses.

Of course, environmental injustice and environmental racism in the United States existed far before Bullard's work in Houston. Some of the more well-known cases that launched the

current environmental justice movement include the 1980s struggle of Warren County, North Carolina, where residents challenged the construction of a PCB landfill in their rural, predominantly African-American neighborhood, the Black garbage workers' strike in Memphis, Tennessee in 1968, and one scholar (Zoltan Grossman) contends that the date for the north American Native EJ movement is 1492 (Lanette, 2002). In short, there have been multiple cases of environmental injustice carried out against poor people and people of color in the United States, but the term environmental justice didn't start gaining ground in the academic world until Bullard's work in the early 1980's. However, outside of academia, environmental justice became popular in activist circles, and is an example of "a political ecology from the bottom up" (Martinez-Alier et al, 2014), where its ideological roots emerged outside of the academic arena.

Since the 1980's, the term environmental justice has spatially expanded, both in places and topics and has been used in both local and global environmental struggles, in research, and even as a principle to guide policy-making (Herrero, 2017). According to Herrero, "the primary strength of the concept relies on recognizing the socio-environmental disadvantages of some groups within a social structure (e.g., poor, indigenous, black or ethnic minority communities" (Herrero, A. 2017, p.2).

Since its inception, the EJ movement has achieved some big successes in the US and more recently on the global stage. In October 1991, the *First National People of Color Environmental Leadership Summit* took place in Washington, DC where the delegates adopted the 17 Principles of Environmental Justice (Warrick, 2015). The next big event was the *Environmental Justice Act of 1992,* which was introduced by then US Senator Al Gore and Representative John Lewis, a veteran of the civil rights era. The EJ Act of 1992 directed the Environmental Protection Agency (EPA) to publish a list of the top 100 counties with the highest amounts of toxic chemicals, and

required a system of user fees on toxic chemical facilities in these counties to fund a grant program that would assist impacted communities" (Warrick, 2015). Arguably the biggest political win of the EJ movement was when US President Bill Clinton issued *executive order 19898* in February of 1994, directing all departments in his administration to make achieving environmental justice part of their mission, and crowning the Environmental Protection Agency (EPA) as the lead agency. Since then, the EJ movement in the United States started to collaborate with environmental movements around the world in defense of the poor and the indigenous (Martinez, 2013). Today, the EPA still has an Office of Environmental Justice and offers grants, manages an EJ projects map, and publishes an annual EJ report (EPA, 2019).

2. Definitions of environmental justice

Trying to define EJ can be challenging since the definition of environmental justice has been evolving over time. According to Schlossberg´s perspective from 2007, "activists and academics within the environmental justice movement in the USA and globally have been discussing the meaning of justice for two decades" (Schlossberg, 2007). Schlossberg argues that the term 'environmental justice' is used to cover at least two overlapping parts of the grassroots environmental movement: the anti-toxics movement and the movement against environmental racism (Schlossberg, 2007). Herrero (2017) sees the term environmental justice as a concept that tries to capture the unequal distribution of environmental risks, toxic burdens and responsibilities produced by industrial activities.

Others have offered their own perspectives and definitions, some being more focused on a concept or an ideal, and others trying to specifically identify what is meant by the term. One example of a broader vision is that of Bryant who articulately states EJ as the following,

> It refers to those cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities, where people can interact with confidence that their environment is safe, nurturing, and productive. Environmental justice is served when people can realize their highest potential, without experiencing racism, sexism, ageism, or classism. Environmental justice is supported by decent paying and safe jobs; quality schools and recreation; decent housing and adequate health care; democratic decision making and personal empowerment; and communities free from violence, drugs, and poverty. In such communities, both cultural and biological diversity are respected and highly revered, and distributed justice prevails. (Bryant, 1995, p.589)

Though eloquently written, this definition comes closer to poetry than a working document to work from. A more specific example is from the Commonwealth of Massachusetts, who in 2000 state that EJ populations are,

> those segments of the population… most at risk of being unaware of or unable to participate in environmental decision-making or to gain access to state environmental resources. They are defined as neighborhoods /U.S. Census Bureau census block groups that meet one or more of the following criteria:
>
> - The median annual household income is at or below 65 percent of the statewide median income for Massachusetts; or
> - 25 percent of the residents are minority; or
> - 25 percent of the residents are foreign born, or
> - 25 percent of the residents are lacking English language proficiency. (Agyeman 2013, p.236)

These examples highlight the range of what is and is not considered EJ or EJ populations.

Academics have also thought to define and re-define environmental justice by separating the two words and approaching them on their own. Lanette (2002) argues that EJ activists define the environment as the set of linked places "where we live, work, learn and play," arguing that this definition challenges mainstream environmentalist definitions of environment and nature, instead putting the emphasis on humans and their interactions with the natural environment. Laurent (2011) tries to define exactly what is justice or fairness when it comes to EJ.

> Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operation or policies. Meaningful involvement means that: (1) people have an opportunity to participate in decisions about

> activities that may affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) their concerns will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected. (Laurent, 2011, p.1847)

This definition is focused on people's interaction with policy makers as well as the policy making system that accompanies them. Since the founding of the EJ movement, there have been multiple attempts to define exactly what EJ is and how to use it both in an academic situation as well as in interactions with a decision-making body.

There are three definitions of EJ that are most commonly referenced; 1) the 17 Principles of Environmental Justice adopted at the National People of Color Environmental Leadership Summit, and 2) the definition of the Environmental Protection Agency (EPA) in the United States, and 3) Bullard's 3 Dimensions of Environmental Justice. The 17 principles encompass distributive and procedural justice along with entitlements and precautionary principles (Lanette, 2002), and is quite lengthy and wordy, while the EPA definition is more succinct, and because of that, more open for interpretation. Bullard's 3 Dimensions, like the 17 principles, is open to more interpretation, but places all scenarios into three categories.

2.1 17 Principles of environmental justice

The 17 Principles of Environmental Justice were drafted and adopted in 1991 at the National People of Color Environmental Leadership Summit, and are as follows:

1. Environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
2. Environmental justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
3. Environmental justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.

4. Environmental justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
5. Environmental justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
6. Environmental justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
7. Environmental justice demands the right to participate as equal partners at every level of decision-making including needs assessment, planning, implementation, enforcement and evaluation.
8. Environmental justice affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
9. Environmental justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
10. Environmental justice considers governmental acts of environmental injustice a violation of international law, the Universal Declaration on Human Rights, and the United Nations Convention on Genocide.
11. Environmental justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
12. Environmental justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and providing fair access for all to the full range of resources.
13. Environmental justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
14. Environmental justice opposes the destructive operations of multi-national corporations.
15. Environmental justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
16. Environmental justice calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
17. Environmental justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.

This list was an attempt to take Bullard's original idea and make it applicable to as many situations and circumstances as possible. These principles are unique because of the authors involved. Since the principles were drafted from the People of Color Environmental Leadership

Summit, they have included stronger rights and recognition for indigenous, poor, and people of color, and are more reflective of the ideas of 'environmentalism of the poor,' which will be discussed later in this chapter.

2.2 Environmental Protection Agency's definition of environmental justice

The second definition most cited is that of the EPA in the United States. Their definition states that "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (EPA, 2019). Their definition further states how to determine whether or not this goal has been met, by stating, "this goal will be achieved when everyone enjoys; 1) the same degree of protection from environmental and health hazards, and 2) equal access to the decision-making process to have a healthy environment in which to live, learn, and work" (EPA, 2019). Unlike the 17 principles of Environmental Justice, this definition is more focused on the process of laws, regulations, and policies, is less visionary for a broader framework, and focuses specifically on policies within the United States.

2.3 Robert Bullard's 3 equity dimensions of environmental justice

In the 2005 book, *Environmental Justice in the 21st Century,* author Robert Bullard distinguishes three types, or dimensions, of environmental justice, namely procedural, geographical and social, "which cover all aspects of environmental inequities" (Fragkou, 2014, p.732). These three types of equity are defined the following ways,

- **Procedural equity** refers to the "fairness" question: the extent that governing rules, regulations, evaluation criteria, and enforcement are applied uniformly across the board

and in a nondiscriminatory way. Unequal protection might result from nonscientific and undemocratic decisions, exclusionary practices, public hearings held in remote locations and at inconvenient times, and use of English-only material as the language to communicate and conduct hearings for non-English speaking publics.

- **Geographic equity** refers to location and spatial configuration of communities and their proximity to environmental hazards, noxious facilities, and locally unwanted land uses (LULUs) such as landfills, incinerators, sewer treatment plants, lead smelters, refineries, and other noxious facilities. For example, unequal protection may result from land-use decisions that determine the location of residential amenities and disamenities.

- **Social Equity** assesses the role of sociological factors (race, ethnicity, class, culture, lifestyles, political power, etc.) on environmental decision making. Poor people and people of color often work in the most dangerous jobs, live in the most polluted neighborhoods, and their children are exposed to all kinds of environmental toxins on the playgrounds and in their homes (Bullard, 2005, p.31).

Bullard's view represents a happy medium to frame the EJ lens in academic discourse, as it is not as specific as the 17 Principles, yet less vague than the EPA's definition, and covers the general idea of EJ.

3. Environmental justice differences between the US and Europe

Although the term Environmental Justice was founded in the United States, the term is now applied to spontaneous movements and Environmental Justice Organizations, NGO's, activist groups, and actions anywhere in the world who are resisting extractive industries, environmental pollutants, transfer of hazardous waste, climate injustices, water deprivation and privatization, and who are fighting for livable neighborhoods (Anguelovski, 2013). Agyeman points out that EJ is now being wrapped in the cloak of *human* rights – rather than the Americanizing view of *civil* rights. Stating that it is as if the Lefebvrean cry of *Le Droit á la ville* (The Right to the City) is becoming a more all-encompassing *Le droit au monde* (The Right to the World), as EJ is now a global movement separating from its American roots (Agyeman, 2013).

Though the EJ movement and philosophy has branched out around the globe, it has not been replicated exactly the same way, but instead has adapted and morphed depending on specific contexts, social structures, cultures and struggles (Herrero, 2017). According to Laurent (2011), the environmental justice and social perspectives are only beginning to develop in the European Union (EU) member states and within European Union institutions. The use of EJ is applicable since many of the same situations exist in Europe as they do in America. As Martuzzi's (2010) work points out regarding waste treatment facilities in Europe, many of the studies documented a pattern where deprived people were overrepresented in the vicinity of waste treatment facilities. To further clarify this point, he states,

> There is a tendency in poorer, less educated, disadvantaged people or ethnical minorities to live closer to waste treatment facilities of any kind and, in addition, that when adverse health effects due to such proximity are detected, these are often compounded (usually multiplicatively) with the adverse effects of social disadvantage…the evidence suggests marked inequalities in the health pressures and impacts due to the combination of environmental and social factors. (Martuzzi, 2010, p.24)

Martuzzi's work mirrors Bullard's work, demonstrating the Environmental injustices that are occurring to those in society that are most vulnerable and suffer the highest levels of societal exclusion. However, although the situation is similar, as demonstrated above, the interpretation of EJ is very different between Europe and US perspectives.

The biggest difference between US and European perspectives of EJ have to do with the US´s focus on race and the European focus on social categories (such as class) when viewing different members of society. In the US, most of the EJ research views race as an agreed reality, and racism as an independent cause of environmental injustice (Lanette, 2002). This is not surprising since the roots of the movement come from specific studies on race, and the term "environmental racism" is often used in the US in both noncollegiate and academic contexts.

Laurent (2011) states that "while distributional and procedural aspects are distinguished in both cases, Europeans highlight the social conditions producing injustices while Americans insist on the racial dimension of discriminations and exclusion from decision-making process that ethnic groups suffer" (Laurent, 2011, p.1848). This difference also has to do with history, as the US emphasizes the universality of natural rights granted to all of its citizens (stated in their founding documents), and focuses on curbing discriminations faced by individuals when they try to exercise these rights (Laurent, 2011). This is strikingly different in European nations who have a different historical foundation and in general tend to focus more on class than race. Laurent clarifies it this way,

> Environmental justice issues are not likely in Europe to be perceived, analyzed and framed in racial and ethnic terms but in terms of social categories. It should not be understood as meaning that environmental inequalities do not have a racial dimension in Europe, but it does mean that the cultural and legal background of public policy in the US and the EU differs on this issue. There is both an historical and institutional explanation for this difference. As mentioned, environmental justice was born in the context of the broader civil rights movement and was thus "racialized" from the onset in the US. Furthermore, only racial minorities are recognized as groups by the US federal law and not low-income communities, race thus being a bases for legal action in courts, while income level cannot be (Laurent, 2011, p.1849).

This last point helps clarify the divide in perspectives between those in the United States and those in European states. The data that Europeans use to measure socio-economic status (SES) is based on composite indices built combining information on several domains, such as social class, education, unemployment, housing, and family structure, where United States' SES can be based on a variety of variables such as income or ethnicity (Martuzzi, 2010). Therefore, the EJ approach of Europe is going to be different than the EJ approach by academics in the United States.

4. Urban vs. Rural perspectives on environmentalism

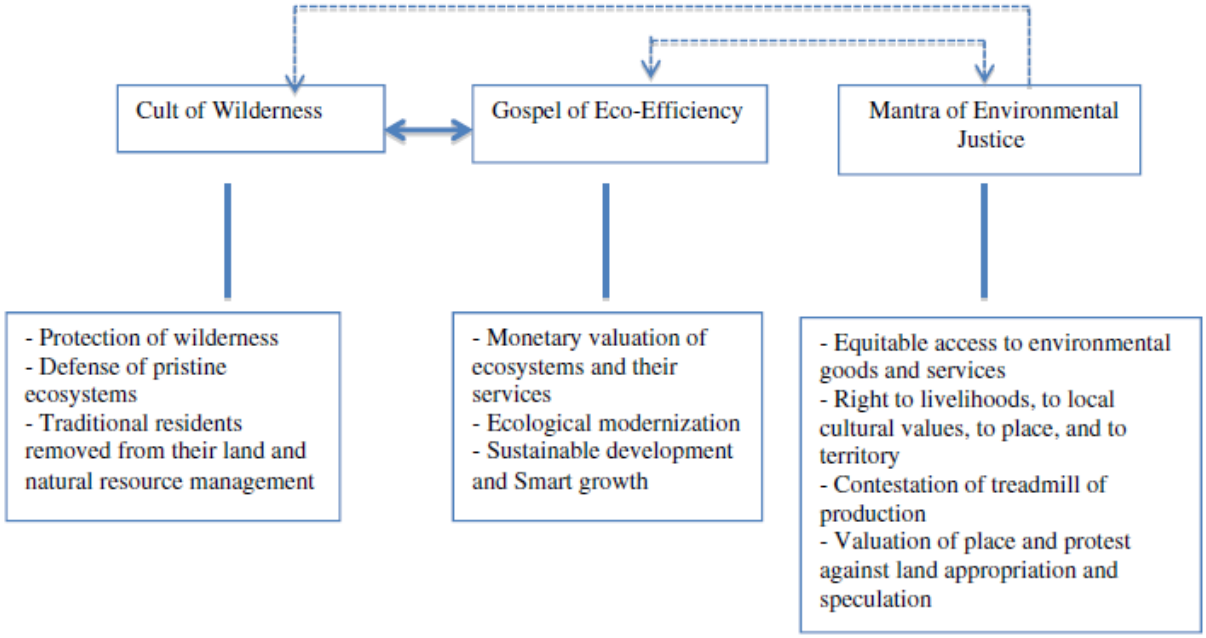
Since the founding of EJ was based on neighborhoods close to landfills, incinerators, and waste storage areas, this research mostly took place in the suburbs, or outside of the main urban core. However, the production of urban nature is deeply political (Anguelovski, 2013). This is especially true in regard to urban land that is contaminated due to dumping and appropriated and sold on the open market. As Anguelovski (2013) points out, "as previously contaminated land gets renovated and (re)developed, it often becomes the object of competition for uncontrolled growth and profit, and cities (especially locations in the urban core) are places where uneven and often debilitating and damaging socio-natural relations of power work together through the urbanization of nature. Or as Ernstson (2013) eloquently states, "there is no limit to the variations of how urban nature is entangled with social and political processes" (Ernstson, 2013, p.7). Yet, since the discourse on social-ecological systems stemmed from non-urban research, there has been limited discussion about the conflictual character of urbanized landscapes, specifically regarding how it is used and the notion of the distribution of ecosystem services (Ernstson, 2013).

Nevertheless, urban EJ struggles have continued to expand their scope, becoming much more multi-faceted and comprehensive (Anguelovski, 2013). As Anguelovski describes, within the same city lies a collection of contrasts and disparities, "between rich, gated, and well-maintained neighborhoods and informal settlements where rural migrants and humble families live without regular potable water or electricity, next to waste dumps, or in unhealthy housing" (Anguelovski, 2013, p.171). In the urban core, EJ groups have proliferated and can be extremely diverse, containing community organizers, volunteer church organizations, NGO's or active residents. Likewise, the list of topics that they work on has continued to expand. Under the urban

EJ umbrella, additional topics than just access to housing absent of incinerators and landfills is pursued. Now topics can include air-quality testing groups, community gardens, fights against 'food deserts,' neighborhood cleanups, access to public transportation, and waste management initiatives. According to Anguelovski, "urban Environmental Justice cannot be envisioned without equitable and sustainable community development, and in return, community development cannot be envisioned without environmental quality and justice in mind" (Anguelovski, 2013, p.171).

Anguelovski further clarifies the advancement of EJ in urban areas by comparing the EJ perspective with historical views of environmentalism. She divides the perspectives into sub-sets; 1) "cult of wilderness" in which wilderness and wild spaces are separate from human interactions, 2) the "gospel of eco-efficiency" which argues for efficient use of raw materials and places a monetary value on ecosystems and their services, and 3) the mantra of EJ which focuses on equity of environmental risks and contaminants related to humans interactions with their environment.

Figure 3.1: Anguelovski's Varieties of environmentalism and their connections



Source: (Anguelovski, 2013, p.173)

From this perspective, Anguelovski shows that the EJ movement has added the human component to environmentalism and environmental movements, with a larger perspective on the urban core.

5. Environmental justice framework limitations

Then Environmental Justice (EJ) framework is both helpful and limiting in helping us understand the social context of the waste pickers of Catalonia. The social dynamic that the waste pickers face is a classic case of environmental injustice as they are the least empowered people in the region, their perspectives and participation in determining policy is not even considered, and they live and breathe in an environment where they are shouldering more than their fair share of environmental burdens. Viewed in this context, an EJ framework provides an adequate lens to understand the basic social dynamics and current situation the waste pickers find themselves in.

Where the EJ framework falls short is two-fold. One is the limited guidance the EJ movement uses to define labor concerns of workers, specifically in urban areas, and the second is the absence of writing on the immigration experience, which includes cultural norms, language, and citizenship status which defines the reality of many (though not all) of the waste pickers in Catalonia. Both of these short-comings stem from the roots of the EJ movement, as mentioned above, which is based on an American model that is not always applicable to all situations.

6. Teamsters and Turtles: adding labor to the environmental justice framework

One of the more unique alliances between environmentalists and trade unionists happened in 1999 in the streets of Seattle, WA with the protests of the World Trade Organization (WTO). The slogan 'Teamsters and Turtles' was hatched and created a form of intraorganizational solidarity, symbolizing the shared struggle of both the environmental and labor movements (Barca, 2012). Bullard magnified the connection between work and the environment in his book *Dumping in Dixie*, by showing that the most unhealthy (from an environmental perspective) and low-paying jobs in the US are usually filled by African-Americans and Latinos, and arguing that making people choose between jobs and the environment is unfair, where the solution is making workplaces safer for workers (Bullard, 1990). Martinez-Alier (2013) points out that while American EJ scholars characterize people who live in areas with high levels of pollution as ''minority populations'' or ''people of color," at the world level these people represent the majority of workers. This lack of focus on workers and the labor component of EJ struggles is not just present in EJ literature, nor most environmental research. As stated by Barca,

> Most social science research on environmental conflicts pays attention to community agency while overlooking the role that workers play in such conflicts and the wider relevance of work in meditating people's understandings of the environmental issues at stake. Paradoxically, work and its complex relationship to

> environmental concerns is probably the least examined aspect of environmental justice struggles and of environmental conflicts…And yet work is- and has always been – relevant to these struggles, for the simple reason that 'subaltern' people, racially discriminated people or 'the poor' are typically also working-class people: people who occupy the lower ranks of the labour hierarchy, making a living out of the most dangerous and most unhealthy jobs while also living in the most polluted places (Barca, 2016, p.62).

From Dimitris' (2018) perspective, "Environmental theory and practice need to start from the insight that labour and nature are inextricably linked, (and) are two necessary dimensions of the same process" (Dimitris, 2018, p. 439). Dimitris exemplifies this point by describing his experiences working with trade unionists from the global south, "as trade unionists in the Global South have said to us, it is difficult for progressive unionists to put climate change on their unions' agenda when workers say, "*I will die quicker from not having a job than from climate change*" (Dimitris, 2018). In an attempt to overcome this divide, some are looking to the environmental justice movement as an opportunity, claiming that the EJ movement is one of the most promising for pushing both research and public policy towards a better understanding of the connections between work and the environment (Barca, 2012).

7. New perspectives on environmental justice

As mentioned previously, in the academic world there have been numerous attempts at defining and re-defining what EJ is and how it is applicable. Originally, EJ activists and researchers had made an empirical claim that poor communities and people of color bear a disproportionate burden of environmental hazards while receiving less than their share of environmental benefits, and their research has been spent trying to assert or refute this claim, but with poor methodological techniques (Lanette, 2002). Yet, according to Lanette (2002), attention to methodological and analytical issues have increased and the quality of the empirical research has improved, offering a higher quality analysis. One example is Pellow (2000), who puts forth a

new theory of EJ called Environmental Inequality Formation (EIF). In EIF, Pellow proposes a three-part perspective; 1) re-define environmental inequality in historical terms, 2) recognize environmental inequality involves multiple stakeholders and interests, and 3) using a life cycle analysis to view the ecology of hazards production and consumption. Herrero, takes a different perspective, arguing that there is a general consensus about what EJ is, but we just need to add an additional component in order to make it function. Herrero articulates that,

> scholars have thoroughly discussed the different dimensions of environmental justice, and despite existing nuances between the different approaches, there is a general consensus about three common and interrelated aspects that can be identified, namely: (a) equity and distribution (a fair share of environmental benefits and harms); (b) recognition (engagement on issues of cultural meaning such as identity or knowledge) and, (c) participation (a demand for inclusive decision-making) (Herrero, 2017, p.2).

Herrero suggests adding a fourth dimension to environmental justice, which she has named 'just sustainability' with the goal of advancing sustainability goals with political recommendations to address the obstacles that limit those goals (Herrero, 2017). These are two examples of many, but demonstrate the range of new EJ perspectives and approaches. Three other theoretical frameworks offer new approaches to Environmental Justice that attempt to link together both the environmental justice perspective and that of labor, and deserve mention. These three frameworks are the "Environmentalism of the poor," "Working-Class Community Ecology," and "Degrowth."

7.1 Environmentalism of the Poor

According to the founder of the term, Martinez-Alier, environmentalism of the poor is part of the global environmental justice movement, that arose in India and Latin America independently of the movement in the United States, yet the connection between both movements is extremely close (Martinez-Alier, 2013). Martinez-Alier points out that these conflicts are not only around

distribution, but are also about recognition and participation. Stated in simple terms, environmentalism of the poor is in regard to actions and concerns in situations where the environment is a source of livelihood (Martinez-Alier, 2013). Martinez-Alier elaborates this way,

> In the many resource extraction and waste disposal conflicts in history and today, the poor are often on the side of the preservation of nature against business firms and the state. This behavior is consistent with their interests and with their values. The environmentalism of the poor centers then on social justice, including claims to recognition and participation, and builds on the premise that the fights for human rights and environment are inseparable" (Martinez-Alier, 2013, p.240).

Through this perspective, it is possible to connect labor and the environment, while still holding true to Bullard's view of the poor representing disenfranchised workers that experience high levels of exclusion. In order to categorize the environmentalism of the poor, Martinez-Alier created a theory of Ecological Distribution Conflicts (EDC) that account for the social distribution of environmental costs and benefits derived from the material interchange between societies and nature (Barca, 2012). According to Akbulut (2019), the term 'ecological distribution conflict' has become a central concept both in ecological economics and political ecology, and points to "social conflicts arising over the unequal distribution of environmental benefits, such as access to natural resources, fertile land, or ecosystem services, as well as over unequal and unsustainable allocations of environmental burdens, such as pollution or waste" (Akbulut, 2019, p.3). These EDCs are seen by Martinez-Alier as varieties of EJ struggles, defining social struggles that have arisen outside the sphere of mainstream environmental politics (Barca, 2012). Furthermore, these EDCs are usually the consequence of development projects which compromise or destroy the living environments of the workers who are currently living and working in this space, compromising their health, safety, cultural integrity, and livelihoods (Barca, 2012).

7.2 Working-Class Community Ecology (WCCE)

Another framework linking labor and environment is the Working-Class Community Ecology framework, or WCCE. This framework has been set forth by Barca, based on her analysis of environmental justice, environmentalism of the poor, and political ecology, which studies nature/power relationships (Barca, 2012). Barca (2016) describes her framework as an interdependence among humans and non-human nature, arguing that they share an ethics of partnership, mutual support, and co-evolution. Barca states that, "even though livelihood struggles do not typically qualify as labor struggles – at least not in academic thinking – work is intrinsically involved in EDCs" (Barca, 2012, p.66), and that this framework is a distinctive category within the broader definition of 'environmentalism of the poor.' While discussing working-class environmentalism, Barca chooses takes a different approach stating,

> I propose a socio-ecological definition of 'working class' as those people who make a living out of physical work performed in agriculture, industry or service, typically occupying the bottoms of the labor hierarchy, i.e. the lowest paying, highest risk jobs. (Barca, 2012, p.62).

Barca has broken down her WCCE framework into four sections, to create a work-centered theory of Environmental Justice.

> 1) as a primary agent of energy and matter transformation through the labor process, workers – broadly defined as those performing physical labor, including non-paid housekeeping and life-supporting work – are the primary interface between society and nature: therefore, sustainability policies should always be centered on the workers' subjectivity and on the sustainability of work in the first place;
>
> 2) working-class people are the most threatened by the destruction of the environment because they work in hazardous environments, live in the most polluted neighborhoods, and have fewer possibilities to move to some uncontaminated area or buy healthy food. Therefore, they hold the greatest vested interest in developing sustainability policies. It is in the interest of the dominant social order to obscure this fact and prevent the formation of alliances between the social movements;
>
> 3) environmental policies should build sustainability from work and around it: this means reorganizing production on the basis of a sustainable work, and not

> simply introduce technical solutions such as incineration of waste or nuclear energy, which only allow the continuation of accumulation and economic growth, while introducing new threats to workers and their communities;
>
> 4) incorporating workers and the labor process within the standard theory of environmental justice would require a comprehensive revision of both research and activism methods and scope, involving collective discussions with labor as well as environmental activists and experts in various areas related to technology, work organization, health and ecology. The history of 'working class environmentalism' has shown how, though contrasted by dominant political and economic forces, the alliance between unions and environmentalism is not only necessary, but indeed possible. (Barca, 2012, pp.75-76)

Barca argues that in the past, "labour unions have maintained a detached attitude toward environmental issues or even openly opposed grassroots environmental action at the local level. Nonetheless, this has not completely impeded workers' environmental activism" (Barca, 2016, p.63). On the contrary, working-class communities reshape the local and national environment through their active involvement in politics by way of grassroots and union organizing, often for environmental causes such as pollution regulation, public health monitoring, and environmental clean-up, in short, the essence of environmental justice (Barca, 2016). Furthermore, Barca (2016) argues that working-class communities "share common experiences and often develop a strong sense of belonging and identity based on some form of control over the work process, its social meaning and its scope" (Barca, 2016, p. 62). Because of these experiences, working-class communities' "own bodies and mental capacities, as well as those of their families are a stake in the continuous transformation of the local environment. They may even feel partially responsible for such environmental change, viewing it as a bargain that they have to make in exchange for survival" (Barca, 2016, p.62). Therefore, working-class environmental struggles are a unique type of environmental struggle. Often, their primary objective is not the protection of nature or other living species for their own sake, as they are usually focused on what are typically a mix of 'class' and 'gender' issues (Barca, 2012), or in the case of the waste pickers of Granollers, citizenship status. Nevertheless, according to the WCCE framework, they can and should be

defined as environmental struggles, because they are an expression of a type of environmentalism in direct relation with their surrounding environment.

7.3 Degrowth: What it is and its relationship with environmental justice

The third new approach to EJ is "Degrowth." Literally, degrowth means '*décroissance*,' a French word meaning reduction (Demaria, 2013; D'Alisa et al., 2014). The degrowth movement was launched as a slogan in the beginning of the 21st century with a primary focus on voluntarily moving away from production and consumption, and towards social and ecological sustainability. Eventually this anti-economic growth slogan developed into a social movement in some northern countries (Demaria, 2013; Martinez-Alier et al, 2014). Like EJ, the Degrowth movement is an example of activist-led science, whose work is now becoming consolidated into proposals, articles, and academic journals (Martinez-Alier et al, 2014).

Degrowth challenges the environmental attributes of the "green economy," "natural capitalism," "sustainable development," and "green growth" and their belief that 'environmental growth' is the answer, instead arguing that social and environmental crises are directly related to economic growth, whether they are environmental or not. Demaria further clarifies by stating:

> Degrowth is a criticism of the belief in ecological modernisation which claims that new technologies and efficiency improvements are key solutions to the ecological crisis. While technological innovation is a source of debate in degrowth, all degrowth actors question the capacity of technological innovation to overcome biophysical limits and sustain infinite economic growth (Demaria, 2013, p.198).

Moreover, "reducing consumption in the North would diminish demand for resources taken from valuable natural areas and allow increasing consumption of those so far deprived from it, without crossing environmental planetary boundaries" (Martinez-Alier et al, 2014, p.44). Promotors of degrowth argue that in a world of finite resources, growth, in terms of metabolic flows, material accumulation and market capitalism cannot be the answer. Instead, the degrowth movement calls

for “a democratically led redistributive downscaling of production and consumption in industrialized countries as a means to achieve environmental sustainability, social justice and well-being” (Demaria et al., 2013, p.209).

According to Akbulut, (2019), amongst the varying EDCs, both the degrowth and the EJ movements have the best potential to interconnect, because both of the movements focus “less on the conditions of production and more on the conditions of existence and reproduction of society. Therefore, the key system to be defended and/or promoted becomes less a sustainable ‘mode of economic production,’ but a sustainable ‘mode of socio-ecological reproduction,’ (which is) broader in scope” (Akbulut, 2019, p.6). However, there are differences between the two movements. As seen in the following table:

Table 3.1: Complementarities between EJ and Degrowth

	EJ Movement	**Degrowth Movement**
Size	Huge	Tiny
Main Location	‘Global South’	‘Global North’
Scope	Mainly local, but increasingly deploying global concepts (e.g. climate justice, food sovereignty)	Global, but many local experiments (e.g. degrowth communes, transition towns)
Actors	Lower (and middle) classes, indigenous communities, mainly rural	Middle class, mainly urban
Combativeness	At the grassroots level	At the theoretical level
Weakness	No inclusive theoretical roadmap	No broad popular basis

Origin: (Akbulut, 2019, p.6)

Part of this difference stems from the longer history of the EJ movement, and the relatively short life of the degrowth movement, but also its origin, with one (EJ) being at the grassroots level and the other (Degrowth) on the theoretical level. Aside from the above-mentioned differences, both the EJ and Degrowth movements seek a socio-ecologically just society, coupled with an equitable transition towards it (Akbulut, 2019), and both place justice at the center of their

philosophies. As well, degrowth is an important lens to look through when trying to understand the global informal recycling sector, as it is the vast amount of resources being consumed that allows the IRS to exist.

8. Lefebvre's "Right to the City"

A final theoretical framework that co-exists with environmental justice and that contains significant overlap, especially in the urban environment, are arguments that originated in Europe in the framework of urban sociology. In 1968, French Sociologist Henri Lefebvre wrote a book titled, *Le Droit à la Ville*, or *The Right to the City*. The main concept of this book was a call to action to reclaim the city as a co-created space, and thereby restructure the power relations that are prevalent in urban space by shifting control away from capital and the state, and toward the urban citizen (Lefebvre, 1968; Purcell, 2002; Narotzky, 2013; Soja, 2008). Or as Lefebvre states, "the *right to the city* is like a cry and a demand" (Lefebvre, 1996, p.158). Further clarifying his intention, Lefebvre asserts that, "the right to the city therefore signifies the constitution or reconstitution of a spatial-temporal unit, of a gathering together instead of a fragmentation. It does not abolish confrontations and struggles. On the contrary!" (Lefebvre, 1996, p.195). In this way, the right to the city (RTTC) movement is similar to EJ in that it is characterized as a social movement, whose goal is to give a voice to those who have the least amount of power. As well, there are additional similarities to EJ aside from power relations that help frame the discussion regarding the phenomenon of waste pickers in Catalonia.

8.1 Similarities between EJ and "Right to the city"

Aside from its roots as a social movement, RTTC and EJ are similar in regard to three other areas; race, environment, and justice. In his article "Race, Protest, and Public Space,

Contextualizing Lefebvre in the US City", McCann (1999) argues that Lefebvre's ideas need to include race in order to fully understand urban problems in the US. He contends that,

> Lefebvre's conceptual framework is especially instructive when used to understand how the production and maintenance of "safe" public spaces in U.S. cities is fundamentally related to representations of racial identities and to an ongoing process in which subjective identity and material urban spaces exist in a mutually constitutive relationship. (McCann, 1999 p. 164)

Although Lefebvre omitted race as a constitutive element in the city, urban centers today are much more diverse, and race plays a more dominant role in current interpretations of the right to the city. A second similarity is the connection to environmental challenges when analyzing the metabolic flow of raw materials, energy, and water into the built environment of the city. As Demaria states,

> The politics surrounding metabolic flows gives rise to antagonisms and alliances that are not necessarily re-enactments of twentieth century struggles; instead of epic contestations between capital and organized labor, or demands for recognition and rights that characterize so-called "new" social movements, metabolic conflicts erupt and alliances are formed and fragment as people struggle to define their "place" in, and relation to, dynamic situated urban political ecologies. (Demaria, 2016, p.294)

Though this perspective has not always historically been included in RTTC perspectives, Revol (2014) notes that due to the correlation of environmental inequality and social inequality - such as poor neighborhoods being more susceptible to environmental disasters - cities have had to confront environmental problems, and therefore must include the environment when discussing RTTC. A third similarity is the concept of justice, which is at the root of both the EJ and RTTC movements. The first attempt to link justice with a geographical term was made in 1968 by Bleddyn Davies, who created the term "territorial justice" (Dikeç, 2001), though now the two (spatial justice and territorial justice) are inseparable. This fact is illustrated by Revol, who states that, "right to the city cannot exist without spatial justice…spatial justice can be considered the first component in the formulation of right to the city" (Revol, 2014, pp.23-24). So, what exactly

is spatial justice? Dikeç defines it as "a critique of systematic exclusion, domination, and oppression; a critique aimed at cultivating new sensibilities that would animate actions towards injustice embedded in space and spatial dynamics" (Dikeç. 2001, p.1793). For both EJ and the right to the city, justice is a key component of the framework. Therefore, in order to understand the phenomenon of chatarreros in Catalonia, both an EJ and RTTC perspective are useful frameworks.

8.2 Space within the city: Perceived, conceived, and lived

The RTTC framework is defined by the social space that is occupied within the city. Lefebvre views this social space as a social product where socio-political actions occur. Although, this connection is not always obvious, Lefebvre points out that,

> "Socio-political contradictions are realized spatially. The contradictions of space thus make the contradictions of social relations operative. In other words, spatial contradictions 'express' conflicts between socio-political interests and forces; it is only *in* space that such conflicts come effectively into play, and in so doing they become contradictions *of* space. (Lefebvre, 1991, p.365)

Therefore, analyzing different spaces within the city provides a framework to view the socio-political conflicts that occur. When trying to define what constitutes urban space, Lefebvre took an expansive view that encompassed what he labeled perceived space, conceived space, and lived space, or the perceived-conceived-lived triad (Lefebvre, 1991). Purcell presents Lefebvre's perceived-conceived-lived triad this way,

> **Perceived space** refers to the relatively objective, concrete space people encounter in their daily environment. **Conceived space** refers to mental constructions of space, creative ideas about and representations of space. **Lived space** is the complex combination of perceived and conceived space. It represents a person's actual experience of space in everyday life (Purcell, M. 2002, p.102).

In relation to the IRS, perceived space is the physical space that the chatarreros find themselves in. This would include the physical circuits of the chatarreros, including their collection and

drop-off points, as well as streets, sidewalks, waste containers, and all physical places and things in between. The chatarreros conceived space includes their mental construction of space. This includes understanding material flows throughout the urban core, especially the locations of collection and sales of materials, using spatial skills to determine how much material fits inside their carts, and understanding how their work is perceived themselves and others. Finally, the chatarreros lived space is a combination of both their perceived and conceived space, and represents their actual experience of space in everyday life.

8.3 Three forms of commons within the urban environment

Aside from three perspectives on space, Lefebvre advocated for three dimensions of the right to the city: everyday life, sharing space, and creative activity (Lefebvre, 1968; Purcell, 2002; Susser, 2013). These three dimensions are enacted through three forms of commons, 1) urban commons around production and consumption, which includes a means for a decent everyday life, 2) urban commons around public spaces of mobility, and 3) urban commons around creativity and collective visions of imagined communities (Susser, 2013). The argument is that when all three of these commons are brought together, the conditions are set for a renewed right to the city.

Since the first commons entails ideas of production and consumption and a decent everyday life, it begs the question about who can claim ownership of waste, and therefore work. Lefebvre argues that the rights to the city include a "renewed right to urban life" (Lefebvre, 1968), which includes a right to participate in the use of public goods. Porras (2018) states that chatarreros could be defined as 'miners of the city,' who are extracting recyclable materials and re-usable objects from among the urban solid waste. However, he points out that "unlike miners,

neither their work nor the value they add to the materials is recognized. In other words, while the copper in the hands of a miner is considered raw material, the copper in the hands of a *chatarrero* is part of the city's waste" (Porras, 2018, p.539). The question of ownership is paramount to this investigation, and includes analyzing language used around ownership, and the differences between open access, private, state, and communal ownership.

The second commons concerns concepts regarding public spaces of mobility. Concerning the phenomenon of chatarreros, this commons addresses access to public spaces such as streets and open spaces to gather, but also access to public resources, since regardless of who owns these materials, they are being accessed by the informal sector. However, in many communities across Catalonia (and globally) barriers to access are being enacted to limit or completely remove opportunities of collection. These barriers can be physical, such as installing 'smart' containers, that are operated through a card or password so only certain residents or state agents have access. Or these barriers can include increased staffing to monitor materials, or a more drastic approach which entails legal enforcement that includes the police and the legal system.

The third commons hints at creative and collective visions of imagined communities. This includes the chatarreros imagined communities of self-determination and local empowerment, and the right to inhabit, faced with the reality of a dependence on global demand for their materials. Since the introduction of the 'National Sword,' a policy decision in China which drastically reduced the amount of materials China would buy, the price of paper has continued to drop around the world, directly having an impact on the number of chatarreros exist, as well as their shift to collecting alternate materials. This shift has also exposed the co-dependent relationship that the formal and the informal recycling systems have, as staffing needs of the city are also dependent on the number of chatarreros that are collecting materials.

8.4 What constitutes a citizen?

A unique part of the RTTC, that is not included in EJ literature, and an element that fits in well with the chatarrero phenomenon, is the addition of ideas regarding citizenship. Since the continued rise of globalization and urbanization, the notion and allegiance of nation states has been called into question. As clarified by Revol, "cities, and not nations, are confronted with the impact of immigration, the complexity of international economic relations, frequent travel, and the upsurge in telecommunications" (Revol, 2014, p.22). This is the consequence of the emergence of neoliberalism that changes the way capitalism works and its link with the state (Brenner 2001). Since urban governance now has to deal with issues that were once uniquely the concern of nation states, the question of who qualifies as a citizen must also be re-redefined (Revol, 2014).

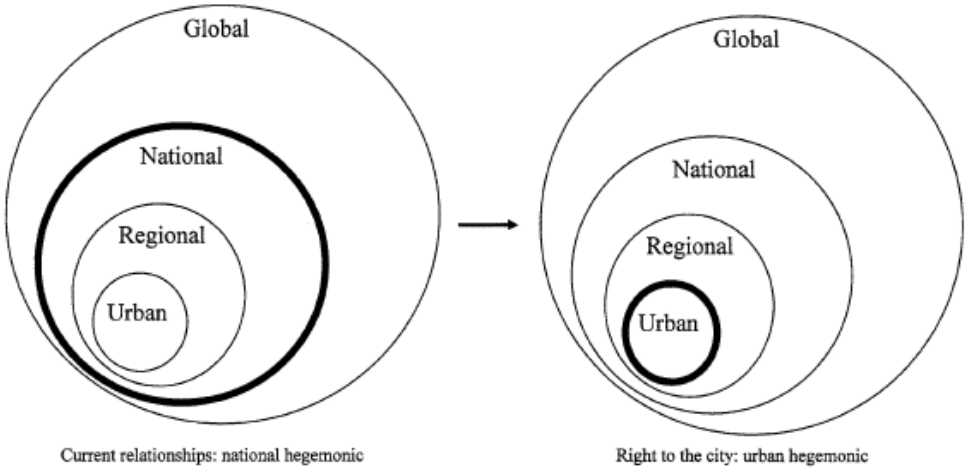
According to Lefebvre, that answer should be based on those who you want to enfranchise, which in his opinion, is designed to further the interests "of the whole society and firstly of all those who inhabit" (Lefebvre, 1996, p.158). Lefebvre's concept of inhabitant is expanded on by Purcell, stating that "because the right to the city revolves around the production of urban space, it is those who live in the city – who contribute to the body of urban lived experience and lived space – who can legitimately claim the right to the city…whereas conventional enfranchisement empowers national *citizens*, the right to the city empowers urban *inhabitants*" (Purcell, 2002, p.102). Framed a different way,

> the right to the city, therefore, is not simply a participatory right but, more importantly, an enabling right, to be defined and refined through political struggle. It is not only a right to urban space, but to a political space as well, constituting the city as a space of politics. Urban citizenship, in this sense, does not refer to a legal status, but to a form of identification with the city, to a political identity. (Dikeç, 2001, p.1790).

According to this definition, immigration status would not matter, but rather how one identifies themselves both within the space they occupy and the political identity they assume. Purcell

(2002) further discusses the idea of "urban citizen," proposing that citizenship could be given at both the national and local level. Figure 3.2 provides an example of what the switch could look like.

Figure 3.2: Alternative scalar relationships for defining political membership



Source: (Purcell, 2002, p.106)

Therefore, according to RTTC, citizenship would be based on the occupation of space, rather than born or acquired rights. This form of citizenship would legitimize participation in the decision-making processes for the city inhabitants, regardless of nationally recognized citizenship, ethnicity, or place of birth, but instead, given to those that are currently occupying city space and living out the routines of everyday life within that space (Lefebvre 1996; Purcell, 2002; Revol, 2014).

Chapter 4

Conceptualizing the work of the informal recycling sector

Trying to conceptualize the work of the informal recycling system (IRS) is very challenging since there is a large diversity of positions and circumstances within the IRS. This chapter starts by identifying what the informal economy is and how it is defined. Next, it examines different characteristics of informal work that are found around the globe and whether the work can be considered 'decent.' This is followed by looking at the working conditions where the activities of the chatarrero occur, and the variety of positions that fall under the IRS umbrella. Since most of the chatarreros in Catalonia are not Spanish citizens, a section is devoted to explaining the process of citizenship in Spain, and demonstrating why many of the chatarreros will probably not achieve it. Finally, based on the categories laid out in this chapter, the chatarreros are placed in categories that are relevant to their situation.

1. The informal Economy: Other forms of work and other types of workers

According to McGovern (2013), although the concept of work is a common theme in academia and a central activity in our lives, the meaning of the concept of work is not readily transparent and is difficult for social scientists to reach consensus. Marx, whose work is central to concepts of labor, focuses his philosophies on waged work, though he recognizes 'other forms of work' outside of waged work (Mingione, 1994). These other forms of work, are part of what is commonly referred to as "the informal economy," or people performing "informal work."

It should be noted that there is a difference between the informal economy and informal work, whereas the first acts as an all-encompassing umbrella that includes a broad range of

activities that take place outside of the formal economy, the second separates those activities into different subsets. For example, the informal economy can be separated into two types:

> (1) all activities which, by their very nature, are defined as illegal, which are part of the *criminal economy*
> (2) conventional productive activities carried out in violation of tax or labour law (Sanchis, 2005)

The first type could include work such as prostitution, illegal drug sales, and a whole host of illegal activities, while the second includes a variety of activities that are not illegal, but are performed outside of tax or labour laws. Whereas, informal work can be separated into two types; unpaid work and paid work. Unpaid work would include activities such as farming for subsistence, domestic work around the house, or volunteer work (Sanchis, 2005). Pfau-Effinger (2009) separates informal paid work into three categories; work done to avoid poverty, "second jobs" usually carried out by craftsman after hours that are not reported, and exchanges of services amongst friends, colleagues or neighbors.

Critics of Marx, and specifically his absence of other forms of work, have mostly originated from feminist critiques looking at issues of childbirth and the contribution of women engaged in work outside of waged work. Narotzky sums it up with this question, "can a concept such as labour bridge the gap between the inescapable concreteness of lived experience and the diverse abstractions used to make sense of it?" (Narotzky, 2018, p. 30). This inescapable concreteness of lived experience is at the heart of understanding these other forms of work, specifically for participants in the IRS. Porras focuses on the theoretical reference of "other jobs" or "other workers," and states:

> The main theoretical reference for the analysis of "other jobs" and "other workers" originates from studies of informality and is the theoretical and political apparatus most widely employed by neoliberalism to understand, explain and offer solutions to the phenomenon of "other jobs" (de la Garza Toledo, 2011). The concept of informality…emerged specifically from the need to explain the characteristics of a labour structure that failed to coincide with the traditional models studied by economists of the day (Porras, 2018, p.538).

According to these definitions, the waste pickers of the world are part of the informal economy and are performing informal work, and although the waste pickers are making money from their activities, their work is performed outside of the sphere of waged work, since no contracts or set wages are included.

2. Characteristics of informal work

By definition, the Informal Recycling Sector (IRS) is a form of informal work, although the notion of informal work cannot be explained by a single causal theory, as it is highly heterogeneous and a wide range of interpretations exist regarding the concept of informality (Porras, 2018). For the ILO, the informal economy is examined through terms of *decent work deficits*. These deficits are defined as the engagement in poor-quality, unproductive and unremunerative jobs that are not recognized or protected by law. These jobs lack the absence of rights at work, inadequate social protection, and have little or no representation and voice (ILO, 2002). From neoliberal perspectives, informality is a phenomenon created by the State, a product of the regulation of labour activities and relations that hinder the natural functioning of the market (de Soto et al., 1987; Porras, 2018). Finally, from a structural perspective, the informal sector is above all, a low-cost labour model (Porras, 2018).

According to Porras, "it [informal work] is a functional model that absorbs labour when there is not enough employment and which manifests itself in terms of activities that do not present the characteristics of waged work, although the objects it pursues might be the same (hospitality sector, construction, etc.), or of those associated with (true or false) self-employment" (Porras, 2018, p.543). Regardless of the definition, what all informal work has in common is that the people performing the work are not recognized or protected under the legal

and regulatory frameworks, and are characterized by a high degree of vulnerability (ILO, 2002). To highlight the degree of vulnerability, the ILO state that,

> They [the informal economy] are not recognized under the law and therefore receive little or no legal or social protection and are unable to enforce contracts or have security of property rights. They are rarely able to organize for effective representation and have little or no voice to make their work recognized and protected. They are excluded from or have limited access to public infrastructure and benefits. They have to rely as best they can on informal, often exploitative institutional arrangements, whether for information, markets, credit, training or social security. They are highly dependent on the attitudes of the public authorities, as well as the strategies of large formal enterprises, and their employment is generally highly unstable and their incomes very low and irregular (ILO, 2002, p.3).

Thus, the work in the informal economy, including the IRS, cannot be termed "decent" compared to recognized, protected, secure, formal employment (ILO, 2002).

3. Categorizing occupations of the informal waste pickers

As mentioned, waste pickers are a part of the informal economy. They are people that scavenge for materials and objects that their previous owners no longer want, and which they believe have some recoverable value (Porras, 2018). The International Labor Organization (ILO) categorize waste pickers into 13 different categories of informal occupations:

1. Itinerant waste buyers (IWBs) who move along a route, and pay households (or businesses) for separated recyclables.
2. Itinerant Waste Collectors (IWCs) who collect recyclables, re-usables, clothing, furniture, and metals with no money exchanged. Mainly observed in, but not limited to, South-Eastern European cities.
3. Itinerant collectors of swill (food waste) for feeding pigs and other animals. Mainly observed in, but not limited to, Latin America and Asia.
4. Street pickers who collect recyclables and bulky waste set out for formal collection.
5. Container pickers who remove materials from community or commercial containers or secondary collection sites.
6. Truck Pickers who are formal waste crews (or their friends) who skim valuables during the formal waste collection.
7. Re-usables pickers also sometimes public employees, who extract WEEE, furniture, toys, and clothes from municipal recycling centers or depots.
8. Dump and landfill pickers who work and often also live on the landfill or dumpsite, meeting trucks, and sorting through the waste as it is disposed there.

9. Small and large junk shop owners and workers that buy material from the IWBs and different types of pickers of even employ waste pickers, often paid by the piece/kg.
10. Mobile Re-usables Collectors. Individuals, families, or small groups of entrepreneurs who collect re-usables, generally electronic or electric appliances, furniture, or clothing from households or from waste set-outs.
11. Second-hand Traders. Individuals, families, or small groups of entrepreneurs who buy and sell re-usables, often having stands or booths at open markets like a "Porta Portese" market in Rome, "Russian markets" in the Balkans, "European clothing" markets or street vending in Africa, or "flea markets" in North America.
12. Second-hand Transporters and Processors: semi-formal companies that sort, grade, and trade used clothing, WEEE collectors and exporters who sell second-hand computers in Africa.
13. Non-Professional street person collectors. This category of casual or occasional street pickers was for the first time quantified in Bogotá, Colombia, where they account for 10% of the recycling attributed to the informal sector. (WPRPW, 2016, pp.179-80) based on Scheinberg et al. (2010a, 2007b), and Scheinberg and Nesic (2014). Information on reuse categories from Occhio del Riciclone (2012, 2009, 2008).

As can be seen from this list, the IRS is not uniform, and represents different occupations and statuses. According to the Working Party on Resource Productivity and Waste (WPRPW), The IRS "can be distinguished depending on whether they are a professional who has been working in recycling for many years, whether they are first, second or third generation on the landfill, an amateur or a new entrant, an occasional worker, a family member who contributes without considering themselves a waste picker, or an indigent or street person who picks waste with no other means of income" (WPRPW, 2016, p.184).

There are a variety of ways that a waste picker in the IRS might self-identify. For example, a waste picker can be part of a larger cooperative or association that works collectively for the betterment of the whole, as is common in many parts of south America, and is more consistent with the distinctiveness of micro-entrepreneurs. In other places, such as parts of Morocco and Egypt, the IRS self-identify as 'small enterprises' (WPRPW, 2016). Moreover, waste pickers can also identify as individuals or family enterprises, as in south-eastern Europe, or as self-employed workers as is the case in south and east Asia. As well, there is a small union of waste pickers in Serbia called the 'Syndicaat,' who are currently working with a high-profile

Roma politician, however, according to the WPRPW, it is not clear whether this is a labor organisation or a political platform (WPRPW, 2016). In addition to how members of the IRS self-identify, there are a range of other considerations. As stated by the ILO,

> Workers in the informal economy differ widely in terms of income level, age, education level, status in employment, sector, type and size of enterprise, location of workplace (rural or urban, private or public areas), degree of coverage of social and employment protection. Economic units in the informal economy also demonstrate a vast diversity of characteristics with regard to size, sectors of concentration, degree of compliance with laws and regulations, or level of productivity, among others (ILO, 2018, pps.1-2).

How the IRS view themselves, in consideration of the previous list of factors, represent important distinctions to consider when trying to conceptualize their participation in larger waste management systems.

4. Working conditions of the Informal Recycling Sector

The working conditions for waste pickers vary depending on their specific role(s), location, the materials they are recovering, and perceived legality of their work. Waste picking can be challenging and dirty work "which can be associated with serious health risks, social isolation, illegal activities and organised crime" (WPRPW, 2016, p.181). The WPRPW of the ILO compiled the following list of labor conditions experienced by informal workers. According to the WPRPW (2016), some of these are specific to informal recyclers, whereas other conditions, such as the lack of identity cards or social services, are common in other informal sectors:

- higher levels of income than formal occupations with the same level of qualification
- long working hours, no holidays or vacations
- long-distance biking, pushing, pulling or carrying. Itinerant pickers without transportation walk up to 20 km per day, those with non-motorized transport bike up to 35 km per day
- muscle and other physical strain from lifting and carrying
- accidents, abrasions, infections
- exposure to all kinds of weather
- contact with medical wastes, body parts, dead animals, human and animal feces

> • exposure to toxic chemicals in the waste or as products of reclamation processes, such as burning of polyvinyl chloride (PVC) coatings to extract copper and other metals from insulated wire and cable
> • social isolation, ridicule, vandalism, other forms of harassment
> • no recognized occupation
> • lack of access to medical facilities, education, housing
> • income loss when sick, pregnant, or too old to work; no pension or social security
> • child labour (usually accompanied by parents)
> • police and sexual harassment, blackmail, violence
> • no access to credit and often no access to banking or financial services
> • barriers to formalizing enterprises or acquiring personal identity documents (WPRPW, 2016, pp.181-182)

As can be witnessed, the working conditions of the IRS leave the workers open to a wide variety of possible health concerns, as well as physical and sexual violence. It is important to remember that many waste pickers, especially those who lack citizenship or face ethnic discrimination would not choose to do this work if they received legal status, or had an opportunity to find other employment (Ramlov, 2016; Florin, 2019). As well, there is broad agreement among specialists that informal recyclers are exposed to a wide variety of hazards, but health issues are hard to quantify. As stated by Binion (2012), the available studies on this issue "have difficulties in defining the effects of long-term exposure, and as a consequence, diseases may also be wrongly classified" (Binion, 2012, p.50).

Although the working conditions of the IRS are important, focusing solely on their working conditions is not sufficient, as health effects can also be related to legal frameworks and government attitudes. According to Wittmer (2018), the legal marginalization of informal recycling and associate activities, insufficient government resources for low-income urbanites, and discrimination by some health and social service providers increases environmental health inequities among informal recyclers (Wittmer, 2018). Improving worker's health is necessitated by social integration policies. In Canada, the creation of cooperatives and associations by

informal recyclers has proven to be effective in alleviating hazards, and "allowing social programs, such as extended health care and child care, to be funded" (Binion, 2012, p.50).

5. The process to citizenship in Spain

One of the main challenges for the chatarreros of Catalonia is that they are not citizens of Spain, and therefore cannot obtain legal employment which keeps them in the informal economy. The process for legal employment is quite challenging. Once someone comes to Spain, it takes 3 years to obtain temporary legal status, provided the following three conditions are met; 1) proof of residency in the country for three years, 2) evidence of effort towards becoming part of the community (usually through increased knowledge of Catalan/Castellano), and 3) obtaining a job offer for at least 1 year. Since most immigrants learn the language, either by being self-taught, or enrolling in classes, and all immigrants are registered upon entrance into Spain, the main method used to deny immigrants temporary legal status is the ability to obtain a work contract (Ramlov, 2015). If a person is able to obtain a work contract, then they are legally allowed to work in Spain for that year, and will have to renew their status at the end of the year, while demonstrating that they have worked the previous year. If after three years, the person trying to become legal does not have a contract, the three years starts over.

If someone has been able to obtain a work contract for at least a year, then after the first year they will need to re-new the contract for 2 years additional years (three years total working), then 2 additional years after that (five years total working), and then five years after that (ten years total working). After 10 years of legally working in Spain it is possible to apply to obtain nationality, but how quick that can happen depends on the country the applicant is coming from, and can take anywhere from 2 – 10 years, depending on the history the country of origin has with

Spain (Pregonia, 2018). Once somebody is legal, then they can start the paperwork to bring over family members, but whether that is successful depends on the job they have, where they live, how much money they are making, and their ability to demonstrate that their language is improving (Pregonia, 2018).

As demonstrated above, the bureaucratic process of citizenship makes is extremely daunting. The main challenge of the bureaucratic process is obtaining a work contract, because as social worker Nuria Pregonia states, it is "very, very, very, very hard to find a job [in Catalonia]" (Pregonia, 2018). Not to say that it is impossible, and certainly some migrants have been able to obtain a work permit and have gone on to obtain citizenship, but for the majority of chatarreros, procuring Spanish citizenship is still a long way off.

6. The work of the sub-Saharan chatarrero in Catalonia

The waste pickers in Catalonia originate from sub-Saharan Africa, predominately from the country of Senegal, and are referred to as *chatarreros*. The name refers specifically to the scrap objects (*chatarra*) they collect, though as mentioned in chapter 3, a better definition of the task they perform would be "reclaimers" or "miners of the city," where they spend their time extracting recyclable materials and re-usable objects from among the urban solid waste (Porras, 2018). According to Porras, the work of the *chatarreros* in Catalonia is based on a group of activities that presents its own distinct division of five functions: the selection, separation, transport, improvement and selling of recyclable materials and re-usable objects (Porras, 2018). The work of the chatarrero is a global urban activity intimately related to the logic of high consumption and waste production (Samson, 2009; Porras, 2018). It is work that is performed in most of the big cities of the world and is classified as precarious work, meaning employment that is poorly paid, insecure, unprotected, and cannot support a household (Fudge, 2006).

The chatarreros mostly fall into numbers 4 and 5 of the ILO's categorization of waste pickers (listed above). Number 4 are "street pickers who collect recyclables and bulky waste set out for formal collection," and number 5 refers to "container pickers, who remove materials from community or commercial containers or secondary collection sites." The majority of the waste the chatarreros collect is *chatarra* (metals) and *cartón* (cardboard), but as mentioned by a waste picker (Actor #2), "if you see it, grab it," meaning if you can make money off of something, then you should take it. Due to this philosophy, the chatarreros of Catalonia also fall into category number 10, "Mobile Re-usables Collectors. Individuals, families, or small groups of entrepreneurs who collect re-usables, generally electronic or electric appliances, furniture, or clothing, from households or from waste set-outs" (WPRPW, 2016, pp.179-80). Finally, because the chatarreros of Catalonia will take other jobs (usually manual labor, paid in cash without a contact) if they become available, they can sometimes fall into category number 13, that is, "Non-Professional street person collectors who are casual or occasional street pickers" (WPRPW, 2016, pp.179-180). Each chatarrero's situation is different, and each day of collection is different depending on what opportunities present themselves.

The working conditions of the chatarreros of Catalonia fall into many of the categories outlined by the WPRPW. They work long hours with no holidays or vacations, walking many hours a day. They are exposed to all kinds of weather, and are subject to anything thrown into or near the trash (including rotten food, needles, baby diapers, etc…), along with any toxic chemicals near, or a part of, the materials they take. The chatarreros often face social isolation, have no pension or social security, and have no access to credit or financial services. As well, some have been exposed to police harassment, though not the ones I interviewed. Where the experience of the chatarreros in Catalonia differ from the list, is that they do not make higher levels of income than

formal occupations with the same level of qualification, but make significantly less. Additionally, there is very little child labour noticed in Catalonia. Occasionally someone talks about a young person doing this work, but most people I talked to have never seen it, making me believe it is either rare, or out of sight. The final differences are that since the chatarreros also come to Spain as adults, they might or might not have had access to education, most are not homeless, but live in a shared housing situation, often with other men in cramped situations, and though not legally allowed, the chatarreros I talked to were able to get medical attention if they needed it. A further discussion of these ideas is found in the analysis chapters, chapters 7, 8 and 9.

PART 2

Conceptual Framework and Methodology

Chapter 5

Conceptual Framework

This chapter outlines the conceptual framework that was used to conduct the investigation, and breaks it down into two sections. The first section describes some background to the phenomenon that exists, and identifies the key problem that this investigation is trying to resolve. Next, the environmental justice framework is presented as an epistemological approach to view the phenomenon, including new frameworks within environmental justice, and the limitations that they have. This section wraps up by integrating environmental justice with Lefebvre's *Right to the City* by describing why Lefebvre's Right to the City was the theoretical approach that was chosen for this investigation, and how it was applied. The second section of this chapter examines the main question for the investigation and three supporting sub-questions, each with its own hypothesis. The chapter ends with a visual presentation of the analysis model that was used.

1. Problems and key elements of the approach

The underlying question of this investigation is determining how informality is valued with regard to the environmental goals of a society. This section looks at the epistemological approach of the study, showing that although it is observed that informal workers are present, very little is known about who they are and the work they are doing. Next, a closer look at the environmental justice (EJ) lens is conducted, pointing out the inability of the framework to fully conceptualize the work of the informal recycling sector from strictly an EJ perspective. Some of the newer EJ frameworks which come closer to capturing this phenomenon are analyzed, however, they have limitations especially a lack of perspective on the migrant experience. After that, an argument is made for using Lefebvre's *Right to the City* and *The Production of Space*, as

a framework for this investigation. Finally, the framework in which this investigation was achieved is explained.

1.1 The study of the informal recycling sector of Catalonia and its challenges

As explained in the first four chapters of the thesis, though there has been an informal recycling sector in Catalonia for many years, the existence of chatarreros from sub-Saharan Africa is a phenomenon that has only existed since the economic crisis of 2008. Though the presence of informal recyclers is noticed through-out Catalonia, there is little understanding, especially in the academic world, of their prevalence, the contributions that their work is making towards environmental goals, and how their work is affecting the formal waste system.

Uncertainty exists as to whether or not this phenomenon is replicated in other parts of Catalonia, and if so, to what extent. As well, if the phenomenon only exists in certain parts of Catalonia, it is unclear if it exists in the same ways, or if there are specific factors that take it in a different direction. Moreover, though there have been a few small inquiries conducted by employees in the city of Granollers, there is uncertainty about whether additional studies have been carried out in other communities in Catalonia, and if so, whether or not there has been any coordination amongst the different municipalities in order to have consistency with their data.

Furthermore, it is understood that the work of the informal recycling sector is a positive benefit to the natural world, since by the very nature of the work, they are helping recycle products that otherwise might be incinerated. But exactly what benefit they are having is still widely unknown. In order to understand the environmental impact that the informal waste sector is having, it is important to know exactly what materials they are collecting, in what volumes, and with what frequency. In short, without quantitative data, no valid environmental analysis can be accomplished.

Additionally, even though knowledge of the existence of informal workers is well known, there is no clear understanding of the relationship between the formal and informal recycling sectors, including whether their circuits interact and how, nor how they are perceived by each other. Other unknown questions include, does the formal system value the contributions of the informal system and see them as a benefit to their labor, or does the formal system resent the informal workers, and see them as hampering their work? Have there been attempts to integrate the informal workers into the formal system, or is the goal to completely limit the informal system's access to resources? Understanding how these two systems interact and view each other will help provide a framework for understanding the phenomenon, as well as determine the future of the phenomenon.

As well, supplementary questions exist concerning the waste pickers themselves, such as demographic makeup, country of origin, reason for doing this work, citizenship status, and the social reality they experience. Based on the literature (Gutberlet, 2010; Kaza, 2018; Reno, 2009;), waste pickers often experience prejudice, stigma and high levels of social exclusion, so it's easy to assume that this is also the case in Spain. However, without any empirical data, it is merely speculative. Moreover, aside from the experience that informal workers have with the general public, there is also little information about their own social networks and community they have with each other, and why some choose to do this work, and why other immigrants choose alternative work.

Finally, there are some deeper philosophical questions that underlie this investigation such as who owns waste, and who should have access to it? In the public conscience, waste by definition is something that has no value, and therefore needs to be 'thrown-out,' either by burying or burning it. Regardless of the method, the main goal of waste management has been to

remove it from society. In this sense, it doesn't matter who owns it, since it has no value. But from the perspectives of both the formal and informal waste systems, some of that waste is seen as a desirable resource, and questions remain about who owns it, who has access to it, and why.

1.2 Epistemological and methodological approach

Trying to find a specific epistemological framework that allows for an understanding of how informality is valued with regard to the environmental goals of a society is challenging, since this phenomenon is multi-faceted, and relates to multiple disciplines within sociology: specifically work, environment, and immigration. The environmental justice (EJ) framework popularized by Bullard (1990) in his groundbreaking work "*Dumping in Dixie: Race, class and environmental quality*," offers a starting perspective, especially since the main actors in this study face social exclusion, are mostly from a different ethnic group then the legal citizens around them, and are working amongst environmental dangers. However, the EJ framework is missing some key pieces of the chatarrero experience. Some of the newer frameworks under the EJ umbrella, offer a stronger perspective from a labor perspective, but have their limitations as well.

As mentioned in chapter two, the EJ framework is both helpful and limiting in helping understand the social context of the informal waste sector of Catalonia. The EJ framework is lacking in two specific areas of relevance to the informal worker experience in Spain. The first has to do with differences between US perspectives and European perspectives, where in the US the focus is on race, and where in Europe the focus is on class (Laurent, 2011; Martuzzi, 2010). For that reason, the EJ framework has a limited amount of attention directed to the labor concerns of workers. The second noticeable omission is the absence of writing on the immigration experience, including cultural norms, language, and citizenship status, which

defines the reality of many (though not all) of the waste pickers in Catalonia. The following three offshoots of environmental justice demonstrate where the EJ framework is lacking.

Martinez-Alier's (2013), influential work, *environmentalism of the poor* is often used to describe the experiences of waste pickers in the global south, and provides a relevant perspective since the informal workers of Catalonia are not only poor, but their environment is a source of their livelihood (Martinez-Alier, 2013). This philosophy, stemming from the EJ movement, makes a nice contribution by combining both labor and the environment. As well, Martinez-Alier's idea of Ecological Distribution Conflicts (EDC) also relate to the informal workers in Catalonia, since there is a social distribution of environmental costs and benefits regarding the labor that the informal workers provide and the environmental risks that the work involves. Though there is an emphasis on livelihood struggles (though most of the experiences in the literature focus on the global south), where this framework lacks is in its absence of literature on the immigrant experience.

Working-Class Community Ecology (WCCE) is another framework under the EJ umbrella that tries to combine environmental justice, environmentalism of the poor, and political ecology by focusing on the interdependence among humans and non-human nature (Barca, 2012). Barca's work, like Martinez-Alier's, mixes livelihood struggles with those of labor. Barca proposes a socio-ecological view of the working class, pointing out that jobs that require physical work are usually both the lowest paid and contain the highest risk (Barca, 2012), which holds true for the IRS experience. The WCCE approach also focuses on labor unions and their role in supporting environmental causes, but due to the lack of citizenship papers, the waste pickers in Catalonia are not members of labor unions, so although the waste pickers are also working class, they do not receive the benefits that working class citizens receive.

A third possible EJ framework for contextualizing the Informal Recycling Sector (IRS) is the degrowth movement. Degrowth relates to the experiences of the IRS specifically since justice is a central tenant of the framework, arguing for a socio-ecologically just society, and seeking an equitable transition towards it (Akbulut, 2019). Degrowth is a unique perspective to view the IRS phenomenon since the IRS' very existence is based on the material consumption of society. If material consumption is reduced, there could be an argument that informal recyclers would also have a reduced supply of commodities. Since the end result of the degrowth philosophy is a just and equitable world, there is an assumption that if material consumption is reduced, the waste pickers would be integrated into the equitable transition to a newer reality. Though the degrowth perspective adds a unique view to perceive the IRS, it also has limited literature in regard to the immigrant experience, and doesn't fully describe the experience of the IRS in Catalonia.

The articulation of these different approaches, and the multi-faceted and interdisciplinary nature of the problem, demands a mixed-method approach which combines interviews, participatory observation, questionnaires, and comparative research methods. This research is for the most part qualitatively driven, since the main focus of the investigation is on understanding the complexities of the social experience of the IRS in order to correctly explain and conceptualize the phenomenon. Additional details of the methodological approach will be addressed in chapter 6.

1.3 Theoretical approach

The theoretical approach chosen for this investigation stems from Henri Lefebvre's 1968 book, *The Right to the City* (RTTC), and expanded upon in his later work, *The Production of Space* (Lefebvre, 1991). As mentioned in chapter three, there are similarities between EJ and Lefebvre,

in regard to environment (Revol, 2014), justice (Dikeç, 2001), and race (McCann, 1999), with both focusing on elements of equity and injustice that are happening to the most excluded in society. As well, both frameworks are viewed as a social movement originating at the grassroots level. Where they differ is that instead of inequity being the main framework, Lefebvre's work focuses on space, and different forms or dimensions of the commons. Lefebvre's key idea in *The Production of Space* is that humans not only produce social relations and use-values, but in doing so, also produce social space, which in of itself is a social product (Lefebvre, 1991). Seen through a political lens, "the production of space in its contemporary urban form expressed the contradictions of present-day capitalism: the increased centrality of power versus the increased segregation of the powerless to the peripheries, the technical homogenization of space versus its commercial fragmentation" (Narotzky, 2013, p.123).

In order to differentiate the different aspects of space, Lefebvre separates space into three categories: perceived, conceived and lived space, also referred to as the perceived-conceived-lived triad (Lefebvre, 1991). As described by Purcell,

> **Perceived space** refers to the relatively objective, concrete space people encounter in their daily environment. **Conceived space** refers to mental constructions of space, creative ideas about and representations of space. **Lived space** is the complex combination of perceived and conceived space. It represents a person's actual experience of space in everyday life. (Purcell, M. 2002, p.102)

This framework is preferred over other EJ frameworks in that it provides more room to contextualize the working and lived experiences of the IRS in Catalonia. Instead of only focusing on the environmental injustice that is taking place, it allows a framework to explore the physical spaces where the formal and informal waste sectors connect,

understand how the work of the IRS is perceived, and examines the everyday lived experiences of the chatarreros. This is not to say that the concepts of environmental justice are completely abandoned, as the main tenants of justice, equity, and sustainability are underlying notions of the investigation. However, the perceived, conceived, lived framework helps to further contextualize the work and lived experiences of the IRS by demonstrating how the space that the IRS occupy, also shapes how their work is perceived.

Along with tools in which to view space, Lefebvre's RTTC also offers three dimensions of commons (Lefebvre). These three dimensions are enacted through three forms of commons, 1) urban commons around production and consumption, which includes a means for a decent everyday life, 2) urban commons around public spaces of mobility, and 3) urban commons around creativity and collective visions of imagined communities (Susser, 2013). In addition to the viewpoints allowed through Lefebvre's three categories of spaces, these three dimensions of the commons provide an opportunity to explore some of the central ideas of the investigation. The first form of commons provides a framework to address the overarching question regarding ownership of waste. The second dimension of commons provides space for examining who has access to materials and resources, while the third dimension provides a unique opportunity to redefine citizenship, something that was missing in most EJ perspectives. Together this analysis helps explain how notions of commons and ownership in Catalonia shape who can access and benefit from materials perceived as waste.

1.4 Right to The City as a framework for understanding the informal recycling sector

The following work utilizes the frameworks put forward by Lefebvre's seminal works: *The Right to the City* and *The Production of Space* to understand how informality is valued with regard to the environmental goals of a society. It is important to note that Lefebvre's views are not a panacea for understanding the IRS of Catalonia. His work provides a strong framework for understanding informality, and relates to most of the informal recycler's reality, but it is not a perfect match in all scenarios. Specifically, Lefebvre is advocating for a call to action to reclaim the city as a co-created space, by lifting control away from capital and the state and toward the urban citizen (Lefebvre, 1968; Purcell, 2002; Narotzky, 2013; Soja, 2008), or as he states, "the right to the city is a cry and a demand!" (Lefebvre, 1996, p.158), a revolutionary goal which is not an end goal of the chatarreros, nor any part of the IRS. The main actors in this investigation do not see themselves as revolutionaries trying to overthrow power structures, but as humans that are just trying to survive. Nevertheless, Lefebvre's work provides a language and a solid framework to discuss the reality of the informal recycling sector of Catalonia.

The first chapter of analysis (Chapter seven) focuses on the informal workers of Catalonia: who they are, where they are from, how they are viewed, and how they view themselves. Though the chatarreros are from multiple countries, the majority of participants in the case study come from either Senegal, or Gambia (which is located within Senegal), so therefore, this chapter starts with the history of Senegalese immigration to Spain. Historical background is provided for why immigration takes place, and the various routes that that are taken to reach Spain. From there, demographic information is provided regarding the education level, fluency, and the amount of time spent both in Spain and Granollers. This is important regarding Lefebvre's view on urban inhabitance and who can claim a right to the city. The next

section focuses on the different ethnic origins amongst the chatarreros of Catalonia, demonstrating how the ethnic class they came from in Africa has a direct bearing on what work they perform here in Spain. The following section provides insight into how the various informal recyclers are viewed in Catalonia, providing both a historic as well as modern context, showing that besides their ethnicity, they are often distinguished by the type of transportation they use in the collection of waste. As well, there is a section on the kindness and welfare that some citizens and some of the formal recycling sector bestow on the chatarreros, a phenomenon that is unusual in the global case of waste pickers. Finally, insight is provided into how the chatarreros view themselves, both positively and negatively.

Chapter eight utilizes Lefebvre's three concepts of space: perceived, conceived, and lived (Lefebvre, 1991), to help explain the phenomenon of chatarreros in Catalonia. In the first section, the physical aspects of perceived space are analyzed with a focus on intersecting points between the formal and informal waste management systems. Here the daily activity of both systems operates in parallel circuits throughout the city, overlapping with one another at collection points and drop-off points scattered around the urban core. Lefebvre's perceived space also provides a window to view the physical circuit of the chatarrero in order to determine the geographic range of their activities. As well, the geographic space of the different municipalities in Catalonia provide some context for the territorial determination of the various modes of transportation that the informal workers use.

In the next section, Lefebvre's framework of conceived space turns the focus toward the mental constructions of space. Here it is used to deconstruct the various material flows through the urban environment to further observe access points by the informal sector. Additionally, the conceived ideas of municipal employees and Granollers citizens is analyzed to understand how

the informal recycling sector is perceived by the formal system. In this section, five areas are evaluated demonstrating how the formal recycling system does not view the informal recycling system as part of waste management, but instead views them as a problems involving social services and public order, further amplifying the stigma and exclusion they face.

In the final section (lived space), the everyday experiences of the IRS are examined, with a special emphasis on the chatarreros of Granollers. This includes other informal work they are able to get, the amount of Euros they make in a day and where that money goes, the distance they travel in a day, the volumes, type and frequency of materials they collect, and the average amount of hours worked and kilometers walked. As well, the environmental injustice they experience is exemplified by the high levels of exposure to risk factors they are subjected to. Much of the lived experience gathered for this investigation is supplied by the empirical quantitative material collected in the case study.

Chapter nine changes focus on the three forms of the urban commons pulling from Lefebvre's 1968 classic, *Le droit a la ville,* or The Right to the City. As previously mentioned, the three forms of the urban commons are; 1) urban commons around production and consumption, 2) urban commons around public spaces of mobility, and 3) urban commons around creativity and collective visions of imagined communities.

The first section examines urban commons around production and consumption, by looking at the question of ownership and waste. This is first done by analyzing the language used by the municipal employees while describing the actions of the informal recycling sector, clearly demonstrating that they view certain behaviors as illegal, but also that their determination is place-based. Diving further into the concept of place-based ownership, the physical locations of the desired waste is separated into Feeney's (1990) four types of property; 1) open access, 2)

private, 3) state, and 4) commons. Using Feeney's four types of property, the access points of the informal recycling sector are separated between open access, private, and state property to determine ownership, while waste itself is considered as a commons.

The next section in this chapter focuses on urban commons pertaining to public spaces of mobility, and focuses on state actions to decrease accessibility to the resources. Deixalleries and smart containers are investigated to see how through state action, accessibility has continued to be limited. In regard to deixalleries, municipalities have created physical barriers, increased staff presence, and used local law enforcement to curtail access by the IRS. In a process of limiting access through design, 'smart containers' are deployed in some municipalities in Catalonia. These smart containers come with specific cards to open them, which are only accessible to select members of the public.

In the final section of chapter nine, urban commons around creativity and collective visions of imagined communities, the imagined control of the price of commodities and scalar perceptions of citizenship are evaluated. First a look at the National Sword policy in China is examined. The National Sword Policy drastically changed the price of paper/cardboard, and has had a dramatic effect on the informal recycling sector of Catalonia. Since this decline in price happened during the investigation, prices during the questionnaire and prices after the questionnaire are compared, showing the reason for the dramatic drop in the number of informal recyclers, and how the formal system adjusted because of that. Additionally, this section examines the co-dependent relationship between the formal and informal recycling sectors. Where the informal system is dependent on the structure of the formal system in order to collect materials, the formal sector is dependent on the informal system to keep their collections costs low. The last part of this section evaluates the possibility of chatarreros, who despite their

national identity, do in fact inhabit the city, which according to Lefebvre, grants them a right to the city, and a key to political inclusion.

2. Research questions, hypotheses, and analysis model

This section looks first at the main question of the investigation, followed by three sub-questions that support the main question, and three hypotheses that correlate to the three sub-questions. This section ends by presenting the analytical model that was used. The analytical model seeks to represent the main features of the informal recycling sector and how these features intersect with one another.

2.1 Questions and Hypotheses

This investigation is composed of one main question, and three sub-questions each with their own hypothesis, amounting to four questions in total. The main question guides the whole investigation and is the impetus for the study. The three sub-questions all help answer the main question, and each of them is the focal point for each of the three analysis chapters (7-9). Additionally, each of the three sub-questions is accompanied by a hypothesis which is directly trying to answer the sub-question question. The following are the main question, and the three sub-questions, along with each supplementary hypothesis.

2.1.1 Main question for the investigation

The main research question for this investigation is, *how is informality valued with regard to the environmental goals of a society*? From the onset of the investigation, it has appeared obvious that the informal recycling sector in Catalonia is making a substantial contribution to the zero waste goals of Catalonia. In many cities through-out Catalonia, informal recyclers are seen

pushing shopping carts and modified bicycles around the city with carts full of cardboard and metals. This suggests that the environmental contribution of the informal recycling sector is large, yet there are no statistics showing their impact. As well, there is an extremely limited amount of academic work on waste pickers in the global north, and chatarreros in Spain in particular, which draws the conclusion that their environmental contributions are not valued. The focus of this investigation is to understand exactly how informality is valued with regard to the environmental goals of a society, while further expanding the academic literature on waste pickers by supplying empirical data on the unique phenomenon of the Catalan chatarreros.

2.1.2 Question #1: Who is the informal recycling sector in Catalonia and what is the social reality where it exists?

This question is needed in order to provide a context for the unique situation of the IRS in Catalonia. In order to understand how they are valued, it is important to understand what their social reality consists of. This includes discovering the IRS countries of origin and why and where they ended up in Spain, the demographics of this population, how they are viewed by Catalan society, and equally important, how they view themselves.

Hypothesis #1: Informal recyclers are adapting to the situation they are in, based on their limited options. They see themselves as workers, Muslims, and community members, while society views them as other, less than, or invisible.

When reading the literature on waste pickers through-out the globe, there is always an element of prejudice and discrimination, and I assume that this takes place in Catalonia as well. The Non-profit El Xiprer, conducted a campaign about the chatarreros and titled it, "(in)Visibles," which leads me to believe that if they are not actively discriminated against, then they are either invisible of ignored by mainstream Catalan society. Since they are from a

religious country, my guess is that their identity as Muslims is probably strong. Furthermore, since many have lived in Catalonia for many years, although they are not legal citizens, they probably view themselves as contributing members of society.

2.1.3 Question #2 How are the activities and working conditions of the informal recycling sector influenced by the spaces in which they exist?

Question #2 is asked through the framework of Lefebvre's (1991) three concepts of space: perceived, conceived, and lived in order to understand the activities and working conditions of the IRS. Currently, there is no academic information that examines how far spread the informal system operates, what their circuits are, and how they are able to move material in and out of the urban core. As well, there is no collected data on the state actions that have occurred in regard to the IRS, and how these measures affect their lives. Finally, no data exists that provides empirical data on the working conditions of the IRS, including the hours worked, kilometers walked, euros made, and health risks they experience. Viewing the IRS through the lens of perceived, conceived, and lived spaces can help provide information on the activities and working conditions of the IRS, and help determine how those activities are valued.

Hypothesis #2: The activities and working conditions of the informal recycling sector, including their circuit, interactions and collections, are limited due to the spatial configurations of their surroundings.

Since the chatarreros in this case study are using shopping carts, I assume that their circuit and range is limited by the number of recuperadoras in their area, as well as the physical confines of the city. Moreover, state interactions either provide the IRS with more or less access to resources, thereby defining what their work looks like. Finally, the volumes of material that

the IRS is able to access, the price they receive for these materials, and the health risks they endure, determine whether or not they continue with this line of work.

2.1.4 Question #3 How do notions of commons and ownership in Catalonia shape who can access and benefit from materials perceived as waste?

Question #3 is concerned with Lefebvre's three notions of the commons. Urban commons around production and consumption helps frame the question regarding ownership of waste, which helps determine how the chatarreros work is valued. Moreover, analyzing state actions concerning access to materials demonstrates the value that the state gives to the IRS's work, and determines if the formal system sees the IRS as a benefit or a liability. Furthermore, the symbiotic relationship between the formal and informal systems allows for a greater understanding of the financial relationship between the two. Finally, recognizing the IRS's habitation in the city provides, from a Lefebvrian perspective, a right to political inclusion.

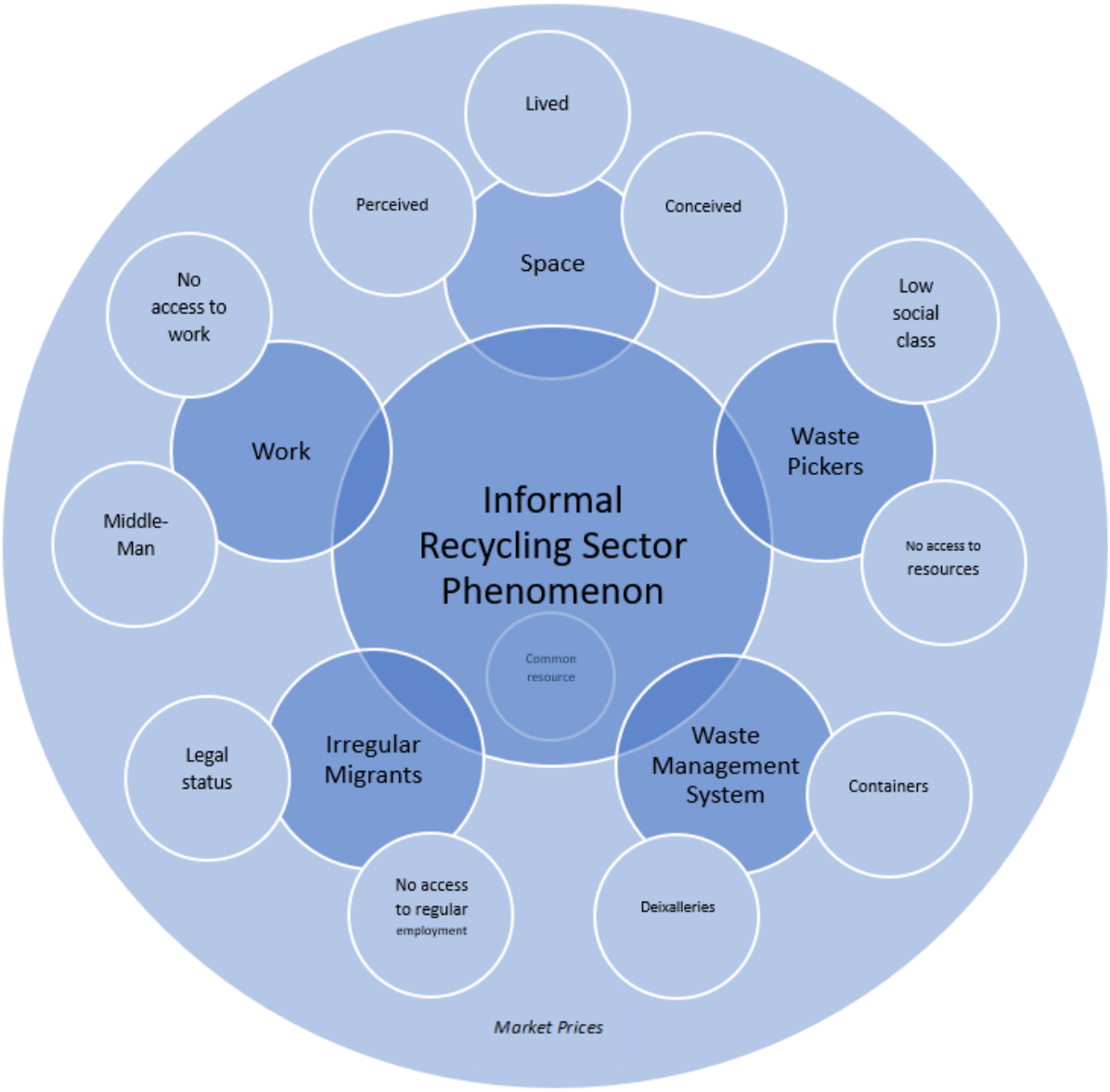
Hypothesis #3: Due to notions of the commons, policy decisions limit the informal recycling sector's access to waste and exclude them from ownership.

In preliminary conversations with Catalan residents and Granollers city employees, often the question arises, "who owns waste?" There are different perspectives regarding whether the IRS should have access to the waste in, on, or near the containers and the deixalleries, since in the collective conscience, waste is discarded because it has such limited value. Analyzing the various actions taken by policy makers, such as the installation of "smart containers," can provide some idea of who they believe should have access to waste.

2.2 Analysis model outline

The outline (on the following page) highlights five main dimensions of the phenomenon examined in the investigation. The specific configuration of the phenomenon in Granollers (location of the case study) regarding these five dimensions provides a visual representation to the question: *how is informality valued with regard to the environmental goals of a society?* as well as the 3 sub-questions. Although there are different types of informal recyclers in Granollers, the main group studied in this investigation are from sub-Saharan Africa, and their immigration status plays a key role in explaining the phenomenon.

Figure 5.1: Conceptualizing the informal recycling sector phenomenon



Chapter 6

Methodology: A Mixed-Methods Approach

This chapter identifies the methodology that was used to perform this investigation, including specific topics related to the case study, and the analysis method. The first section explains the wider scope of the investigation, including what the investigation is about, what were the main techniques used, and why they were chosen. Additionally, this section describes how the investigation evolved, and why the case study location was chosen, including key actors. The following section looks at the case study that took place and the different methods that were used for it. This section also discusses challenges that were faced in the investigation and how they were overcome. The final section addresses how the data was analyzed. It is also important to recognize that although I had not planned it this way, the price of cardboard dropped dramatically during the investigation, and the timing allowed a first-hand look at the global connection of the waste trade, and the impact that it can have on local populations.

1. Explanation of work

For this body of work, I have used a Mixed Methods approach that is qualitatively driven, which means that both qualitative and quantitative data have been collected, although the rationale of qualitative research embraces the whole research project. As stated by Mason (2006), "mixing methods helps us to think creatively and 'outside the box', to theorize beyond the micro-macro divide, and to enhance and extend the logic of qualitative explanation" (Mason, 2006, p.9). This research is also predominantly qualitatively driven, since the main focus is on understanding the complexities of social experience, and to be able to explain and generalize the phenomenon. (Mason, 2006). According to Mason (2006), using a qualitatively driven approach "can draw on and extend some of the best principles of qualitative enquiry. In the process, it can benefit from

ways in which qualitative researchers have sought to develop constructivist epistemologies, and to engage with thorny methodological issues especially around questions of interpretation and explanation" (Mason, 2006, p.10). The qualitative approach in this investigation was necessary in order to ensure a dynamic approach that would be open to revision should new evidence become available.

The majority of this methodological work was carried out through primary data collection, using participant observation, in-depth, semi-structured interviews, a weekly questionnaire, and qualitative content analysis. Additionally, I also used secondary data analysis from other academics related to the theme in order to provide a context with which to frame my research. The main body of work was a case study in the city of Granollers, Catalonia, where the majority of the work took place. In addition to the case study, a comparative analysis of Granollers with other cities within Catalonia was completed. Both of these two comparative analysis were done in cooperation with Dr. Espluga, and Dr. Porras.

I chose a mixed methods approach to this investigation as it seemed the most appropriate for a study like this, where I am both counting the kilos of cardboard collected (quantitative), and conducting in-depth interviews to try and understand the social reality of the waste pickers (qualitative). According to Medina, a leading scholar on waste pickers, most studies on waste pickers prior to 1998 had been either quantitative or qualitative, and, therefore, had limitations in their reliability and validity (Medina, 1998). Medina states that "qualitative methods tend to be strong in validity but weak in reliability, while quantitative methods tend to be strong in reliability and weak in validity. By combining the use of both methods…it is possible to balance the strengths and weaknesses of the two and achieve a higher degree of reliability and validity" (Medina, 1998, p. 109-110).

2. Choosing a location to conduct research: Challenges and opportunities

One challenge for this project is that access to chatarreros can be very challenging. At the beginning there was uncertainty about who they were, what language(s) they spoke, where they came from, and their willingness to participate in a study. In addition, there was an ethical consideration, as we did not want to do any type of investigation that could ultimately hurt them in the long run. The first decision was to determine a location where we would have access to this group of people. In the end, we chose the city of Granollers.

The location of Granollers for the case study was chosen based on personal connections, and an unexpected addition. My thesis supervisor, Dr. Espluga, had a connection (Carme Clapés) that he had worked with on other projects. Mrs. Clapés works for the city of Mataró on waste management programs, but she also volunteers at a soup kitchen (El Xiprer) in the city of Granollers where the target population congregates every morning for breakfast, thereby providing a consistent location to reach out to the target population. In addition to managing the soup kitchen, El Xiprer also helps the waste pickers by serving as a kind of information hub, to help them meet people, connect with government agencies, and find resources they might need. El Xiprer also has meeting rooms that they were willing to let us use. In the end, this location seemed like the perfect place to conduct a case study.

The first snag came when we met with City Councilors of Granollers to talk about the project. We met at El Xiprer (April 19, 2018), and the concern amongst those present was that the waste pickers do not speak English (my native language), Castellano or Catalan. The assumption at this time was that they speak French, since Senegal and Morocco were both French colonies (Rendon, personal notes April 19). Luckily, through this conversation, it was

understood that there was someone living in Granollers from Senegal who speaks French and Castellano, and she might be interested. It turns out, there was a woman (Astou Toure) who is originally from Senegal, but has lived many years in Granollers. Mrs. Toure is fluent in Castellano, Catalan, French, Arabic, Wolof, and Mandinka, and we were able to use her as my translator. Since Mrs. Toure does not speak English, Castellano was our common language. Since I am not yet fluent in Castellano, our difficulties were overcome by using written questions for the questionnaire and for the first round of in-depth interviews. For interviews with key experts, I used three different volunteer translators to help me with the language difficulties. As well, Dr. Espluga also sat in with me on the interview with the *recuperadora* (Ferralles Batlle), and the follow-up interviews. It turned out that some of the waste pickers did speak French, but not all of them. The languages used during the questionnaires and interviews were Castellano, Wolof, Arabic, Mandinka, and French.

3. Case study: Granollers

The majority of this data comes from an investigation of the waste pickers of Granollers, a city of 60,000 people located north of Barcelona in Catalonia, Spain. This project was funded by Ecoembes, a quasi-governmental entity who were interested in finding out the amount of waste pickers in Catalonia, their collection circuit, the impact they are having on the waste management system, and some ethnographic information about who they are, where they are from, and their plans for the future. Although some of the focus of this work was for the Ecoembes project, it was also an opportunity to collect additional information for this thesis, therefore, some of the work for the two projects were done simultaneously.

This case study is broken down into 6 sections; 1) Spending time with the chatarreros of Granollers to try and understand their circuit (participant observation), 2) Interviews with the

main experts and key people in Granollers, 3) completing a questionnaire which was filled-out by a selected group of chatarreros, 4) In-depth interviews with the chatarreros of Granollers, (5) follow-up interviews with 5 original participants and 3 new chatarreros, and (6) interviews with municipal workers through-out Catalonia.

For the waste picker's time and participation, we decided to pay them 10€ per questionnaire filled-out, and then 20€ for the in-depth interview. For a roughly 2-month questionnaire process, this worked out to roughly 100€ per participant. Paying the waste pickers was important both on valuing their time, contributions, and expertise, but also as a way to encourage participation, and build rapport. The participants all agreed to be interviewed, knowing that their answers would be anonymous. Due to their irregular situation, they did not want to sign any forms or papers, hence a verbal confidentiality agreement was a conducted, with a representative of the NGO, El Xiprer as a witness. (See section 3.3.2. for more details).

3.1 Participant Observation: Spending time with the chatarreros

My participant observation took place in the city of Granollers spending time with the waste pickers there. I spent multiple mornings having breakfast with the chatarreros at the non-profit, El Xiprer, between Oct 16, 2018 and December 11, 2018. "Participant observation refers to the process in which an investigator establishes and sustains a many-sided and situationally appropriate relationship with a human association in its natural setting for the purpose of developing a social scientific understanding of that association" (Lofland, 2006, p. 17). On June 26, 2018, the situationally appropriate relationship consisted of me obtaining my own shopping cart and pushing it through the streets of Granollers, searching through the containers for valuable materials, and then selling those materials to the recuperadoras (middle-men). The

waste pickers that I worked among mostly consisted of Sub-Saharan African immigrants collecting metal and cardboard on the streets of Granollers, Catalonia.

The physical space used to conduct this participatory observation research was completed in 3 different spaces. The first place was **El Xiprer**, a non-profit in Granollers where the waste pickers met in the morning for free breakfast, received support from their social worker and staff, and served as a meeting place for the waste pickers to share information. This would also be the location where the waste picker questionnaires and waste picker interviews took place. The second place is **the physical streets of Granollers**. This is the physical work-space of the waste pickers of Granollers. It includes all public places within the city of Granollers, specifically, streets, alleys, sidewalks, and parks. Waste pickers also went inside private businesses to obtain recyclable materials. However, the vast majority of the work was done outside in or near the public trash containers lining the streets and alleys of Granollers. The third place that participant observation took place was at **Ferralles Batlle**. Ferralles Batlle is one of three companies that buys products (paper and metals) from the waste pickers. This space is important for participant observation as it is where a "carrito" (shopping cart) can be obtained, where the material is delivered, collected, and paid for, and as a spot where chatarreros talk and share information with each other and Ferralles Batlle employees.

3.2 Interviews with key experts

The interviews with key experts included members of the Granollers City Council, Granollers City Staff, NGO social workers, waste buyers, industry experts, and a Peace Corps volunteer who served in Senegal for cultural understanding. These interviews helped me to understand the social reality that the chatarreros exist. I was also able to understand the main waste circuit of

Granollers, gather quantitative data of collected materials, learn basic cultural competency, recognize public perceptions of the waste pickers, and learn about past campaign conducted regarding the waste pickers. These interviews, though essentially open and exploratory, were organized into three sections; (1) the past – perceptions and experiences, (2) the present – perceptions and experiences, and (3) the future – expectancies and future plans, however, the process was flexible enough to explore more in specific areas if new information became available. The key experts I interviewed consisted of the following people:

- Julián Porras – Expert on the informal economy of Catalonia – February 27, 2018
- Paco Cruz, David Pérez Caralt, Ignacio Fernández, Astou Toure, Carme Clapes – municipal employees and social workers - May 25, 2018
- Interview with AlenCop waste wickers – waste picker cooperative - May 31, 2018
- David Perez – Granollers Social Worker – July 2, 2018
- Francesc Martínez Mateo – (Asesor-coordinador del Área de Acción Comunitaria y Bienestar) – July 13, 2018
- Nuria Pregonia – Social Worker– July 13, 2018
- Ryan Huggins – Peace Corps volunteer in Senegal - August 10, 2018
- Amadeo Barbany – Business owner in Granollers– October 2, 2018
- Carme Clapes – Waste expert - October 26, 2018
- Ignacio Fernández – El Xiprer social worker - November 28, 2018
- Ferralles Batlle – Recuperadora - November 30, 2018
- Lourdes Ariza – Consorci per la Gestió dels Residus del Vallés Oriental – December 5, 2018

For this section of the research, I used qualitative content analysis (QCA) and ATLAS.ti. A Further discussion of the analysis is discussed at the end of this chapter, in section 5.

3.3 Chatarrero questionnaire

The questionnaire section collected mostly quantitative data (but also qualitative data), and focused broadly on the variety and amount of materials collected, income generated from collection, hours worked per week, health concerns, and the collection circuit. The waste picker questionnaire was carried out over a 9-week period (Oct. 16, 2018 – Dec. 11, 2018) and consisted of 7 weeks of data which was conducted once a week for two months. This time was picked, for two reasons. First, it was perceived as an average work week for the waste pickers. There was an original idea to conduct the questionnaires in June of 2018, but because of Ramadan (the majority of the waste picker participants are Muslim) we decided not to. Secondly, we decided not to conduct the questionnaire in the middle of the summer, as the main translator (Astou Toure) was unavailable. Therefore, we picked the time that we thought would provide us with the most accurate data and that worked for the questionnaire conductor (myself) and translator Astou Toure. The reason that the questionnaire was done over 9 weeks but with only 7 weeks of data, was the first week we only collected information per day, and after reviewing the data, we decided to change this to weekly counts. So although this information was valuable and useful, it was not included in the final tallies. The other reason is that one week (the week of Oct. 29th) was a holiday on the day we usually came to conduct the questionnaires, so collecting data was unavailable.

For the waste picker's time, we decided that it was fair to pay them 10€ per questionnaire, as the time it took them complete the questionnaire affected their normal hours of work. By paying the waste pickers 10€ per questionnaire it also created an incentive for them to participate in the process, and greatly improved my relationship with them.

Nine people chose to participate in the questionnaire process. During this period, Mrs. Toure (translator) and myself sat down with the waste pickers individually, and asked them the set of questions on the questionnaire. Mrs. Toure asked each question and recorded (in Castellano) the answer to each question. Therefore, the information provided was directly from the waste picker's own answers. I answered clarifying questions, expanded the conversation if new and useful information was presented, and talked freely with the waste pickers as best I could based on our limited amount of common language.

3.3.1 The "outsider" participant researcher role

One of the challenges of engaging in this type of research is gaining the trust of the actors that you are engaging with. Lofland (2006), refers to this as the "outsider" participant researcher role. As Lofland states,

> The major strategic problem of getting in, then, falls to the outsider seeking admission to a setting for the purpose of observing it or securing access to individuals for the purpose of interviewing them…you are more likely to be successful in your quest for access if you enter negotiations armed with connections, accounts, knowledge, and courtesy. (Lofland, 2006, p. 41)

This was true in my case, as the first day of introductions and participation in the questionnaire I was met with skepticism and mistrust. Two things helped worked in my favor. First, the connection with Mrs. Toure allowed the mistrust to subside a bit, as she was from Senegal, spoke their languages, and spoke out in favor me, arguing that I was someone that could be trusted. As Lofland states, "oftentimes access is well-nigh impossible without them (connections)" (Lofland, 2006, p. 41-42). Secondly, as part of being an outsider, I also had to account for why I was conducting the research. As if I was reading from a page out of Lofland's book, *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*, I quickly followed his advice and

identified as a student, which is a profession that is both understood by the majority of people of the world, and also a non-threatening profession. These two things helped immensely. Additionally, I also felt that being an immigrant myself and facing some of the same difficulties with the language, as well as already having some credibility from my time conducting participatory observation, made the process of building trust easier, though I have no way of quantifying that.

3.3.2 Assurances of confidentiality

Although I had a connection and identified as a student, I still faced challenges of trust and acceptance. On October 16, 2018 during my first day of questionnaires, the following was written in my notebook while on the train back to Barcelona where I live.

> "I couldn't write in my notebook, because the chatarreros thought I was writing about them. Chatarrero #7 was skeptical of the project, when Astou told them what it was about, he made sure he didn't want his name written down, and questioned whether I was going to turn in the list of chatarreros to authorities. Astou explained that I was a student, and did not work for the government. #7 said he didn't want to participate, and after the first 5 minutes, he got up and left." (Rendon, October 16, 2018)

As can be seen, one waste picker in particular did not feel comfortable, and did not want his name written down anywhere. I also decided I would not be writing many notes down during my time with the questionnaire and interviews, as that would be highly suspect amongst this group of people. Although this particular participant left, luckily the remainder stayed and continued to be involved in the project.

As noted above, one of the main concerns that the waste pickers had was the fact that I knew their names, which presented a loss of confidentiality. This problem is also something Lofland talks about, stating that,

> "One of the central obligations that field researchers have with respect to those they study is the guarantee of anonymity via the "assurance of confidentiality" – the promise that the real names of persons, places, and so forth either will not be used in the research report or will be substituted by pseudonyms." (Lofland, 2006, p. 51)

Because this detail was not thought out as well as it should have been, I talked to Dr. Espluga, and he, I and Mrs. Toure agreed that moving forward, instead of using names, we would use #'s for the different participants. This decision was captured in my notes on October 25th of 2018,

> 1 no show. Change to #'s instead of names.
> We started off the meeting telling everyone that we were not going to write down anyone's names, and instead just wrote down #'s. I wrote down the order of #'s in my notebook, as Astou just wrote down 1,2,3,4…. This greatly eased the minds of the chatarreros, and #14 in particular physically relaxed, smiled, and then was more open to sharing his experiences with us. (Rendon, October 25, 2018)

And again, on November 8, 2018, two weeks later.

> Two people didn't show, #1 and #12. Chatarreros are more comfortable with me, and now settled into routine. (Rendon, November 8, 2018)

These first few days were the beginning of a compilation of trust that would be built for the next few months, and also an important reminder that not only was I collecting information on the kilos of metals and cardboard they were collecting, I was also "asking people to grant access to their lives, their activities, their minds, (and) their emotions" (Lofland, 2006, p.43).

3.4 In-depth interviews with select chatarreros of Granollers

A series of in-depth semi-structured interviews took place with 8 of the participants in the study. According to Legard (2003), key features of an in-depth interview include a combination of structure and flexibility, interactive-ness, and the researcher using a range of probes and other techniques to achieve depth of answer. Additionally, "the in-depth format also permits the researcher to explore fully all the factors that underpin participants' answers: reasons, feelings, opinions and beliefs" (Legard, 2003, p.141). These interviews were completed using some base

questions as a guide which included a series of open-ended questions in order for the interviewee to not choose preestablished responses.

As mentioned, for this part of the investigation, 8 people participated in the in-depth interviews. The youngest participant was 22 years old, and the oldest was 60 years old with the average age being 37.86. Four of the people being interviewed were from Senegal, 3 from Gambia, and one from Morocco. The formal education level of the participants was very low. Two members had no education at all, one attended primary school, three attended secondary school, and two went to an Arabic school. Though because Mrs. Toure was with me, we were able to have open and relaxed interviews.

These interviews took place on two separate days at a room in the non-profit, El Xiprer. Four interviews (#'s 1, 4, 10, and 14) took place on December 4, 2018, and four interviews (#'s 2, 3, 5 and 6) took place on December 11, 2018. The interviews with the waste pickers consisted of categorizing the ethnographic and sociological aspects of their reality. These interviews included questions regarding; 1) the demographic make-up of the waste pickers, including age, place of origin, educational level, and languages spoken 2) a background section which included questions on family life, reasons for leaving place of origin, and reasons for ending up in Granollers, 3) a section on health and livelihood, where waste pickers were asked about how they became involved in this work, other sources of income, likes and dislikes of the work, and how their free time was spent, 4) a material flow section of questions were asked that focused on the circuit of the work performed and additional materials collected and (5) finally, a policy section was completed which focused on the perceived numbers of waste pickers in Granollers, reasons for the current number and future plans. For the in-depth interview, we paid each waste pickers 20€ per interview, as the time it took them to wait their turn and complete an interview

(roughly 30 minutes per interview) affected their normal hours of work, and we felt that they should get compensated for their time and expertise.

Since this was the last day with the chatarreros, I decided to write some reflections in my journal, specifically on ideas of trust between myself, them, and the project. This was my journal entry from December 11, 2019

> The first day people were wary of process, wondering why they were picked, and what they had in common with the others. The last day people were friendly w/others, jovial, and in general, in good humor.
>
> I made cookies for everyone. They asked whether there was alcohol in them. Once they were convinced that there was no alcohol in them, they politely ate some, and then # 4 took the rest for the road. (Rendon, December 11, 2019)

Trust (and friendship) had been achieved. These interviews were translated, and written down by Mrs. Toure, and later, the data was entered into an excel spreadsheet to be quantified and analyzed.

3.5 Follow-up interviews

Eight follow-up interviews took place with 5 of the original participant members, and 3 new waste pickers. These interviews took place at the non-profit, El Xiprer, and lasted between 30 and 45 minutes. The questions were written by myself, asked by Professor Josep Espluga, and had translation help from Astou Toure. These interviews provided follow-up to the original interviews to understand what changes had taken place and to clarify any understandings that did not take place with the first round of data. The first four interviews took place on September 4, 2019, and the second four interviews took place on September 11, 2019. Since some of these people did not participate in the original interviews, and I do not use direct quotes from the first in-depth interviews, I cite their contributions as Interviewee #1, Interviewee #2, etc., based on the order in which the interviews took place. For this section of the research, I used qualitative

content analysis (QCA) and ATLAS.ti. A Further discussion of the analysis is discussed at the end of this chapter, in section 5.

3.6 Interviews with Municipal workers through-out Catalonia

For this section, twenty-two municipalities were selected based on three different criteria:

- They were from different geographical areas of Catalonia
- They were important municipalities within the region
- Municipalities were close to sites of waste management companies and/or paper mills.

Of these twenty-two municipalities, interviews were conducted with twelve city employees from either the environmental, cleaning or waste management branches of their respective city. These interviews were conducted with the help of Dr. Julián Porras between May 8, 2019 and June 18, 2019, with three of the four provinces through-out Catalonia. In some of the municipalities, waste management managers or technicians did not want to participate in an interview due to the proximity of the municipal elections on May 26, 2019. This fact can demonstrate the politicization of the subject matter of waste, for two reasons: the high cost of the collection system as a part of municipal budgets, and the fact that issues such as taxes and urban conflicts associated with waste collection can be problematic during electoral periods. A final reason that some professionals did not want to give an interview was that from their point of view, the topic was not related to their job duties, indicating that many places either don't see the informal recyclers (they are invisible) or that they don't think it is a waste issue (this topic will be further discussed in chapter 9). These interviews were conducted to understand the differences and similarities of the chatarrero phenomenon through-out the autonomous region of Catalonia,

understand how the formal recycling sector views the informal recycling sector, and better understand the waste picker experience. The people interviewed were municipal workers from the following cities:

Table 6.1 Municipal staff interviewed in Catalonia

Municipal staff #	City	Date of interview
Municipal staff #1	Mataró	May 8, 2018
Municipal staff #2	L'Hospitalet	May 13, 2018
Municipal staff #3	Terrassa	May 16, 2018
Municipal staff #4	Salt	May 17, 2018
Municipal staff #5	Rubí	May 22, 2018
Municipal staff #6	Besalú	May 23, 2018
Municipal staff #7	Igualada	May 30, 2018
Municipal staff #8	Sant Sadurní d'Anoia	June 6, 2018
Municipal staff #9	Girona	June 7, 2018
Municipal staff #10	Barcelona	June 11, 2018
Municipal staff #11	Valls	June 11, 2018
Municipal staff #12	Olot	June 18, 2018

It is necessary to add that the technicians from Granollers and the Consorcio de Residus del Vallès Oriental were already interviewed prior, within the framework of previous exploratory interviews to contextualize the case study in Granollers.

The topics of the interviews were as follows:

- Description of the municipal waste management system: Actors involved (consortiums, municipalities, companies, merchants, etc.); Type of waste management system (door

to door, containers, green points); Formal and informal relations with other actors (recuperadoras, police, paper companies, etc.)

- Description of local informal recyclers: data, characterizations, areas of influence; evolution, and perceptions.
- Recuperadoras (recovery companies): paper or metal recuperadoras in the area of influence, quantity, conflicts, etc.
- Public policy: public policies or projects designed and/or implemented around informal recyclers in the municipality.

Of the 12 interviews carried out, 10 of them were recorded in audio and 2 were manually recorded. The transcription and coding processes were carried out between July and September of 2019. In order to ensure anonymity, both in the registration processes and the coding have been omitted the names of those interviewed. Since all the people interviewed were technical workers with the municipalities, I cite their contributions as Municipal staff #1, Municipal staff #2, etc., based on the location of the city, and the number system outlined above.

4. Data analysis

For the interviews that took place, including interviews with key experts, follow-up interviews and interviews with municipal workers through-out Catalonia, I used qualitative content analysis (also called thematic analysis), "a method for identifying, analyzing and reporting patterns (themes) within data (Braun, 2006, p.79). According to Morgan, "QCA is an appropriate choice when the available data and the research goals call for the advantages of content analysis in describing what patterns are in the data as well as the advantages of grounded theory in interpreting why these patterns are there" (Morgan, 1993, p.119).

For the coding process, I used a coding software called "ATLAS.ti " to code the data, enabling me to identify the key elements of the data that help explain the waste picker phenomenon. Through this process, themes were identified, and patterns were recognized. As Braun mentions, "a theme captures something important about the data in relation to the research

question, and represents some level of *patterned* response or meaning within the data set" (Braun, 2006 p.82). I then used these themes to help organize my analysis, and ultimately, to answer my research questions. As well, I followed Saldaña's (2009) guide that "coding is the transitional process between data collection and more extensive data analysis" (Saldaña, 2009, p.4). Much like chatarreros searching through a container for useful information, I searched through the interview data to collect dialogue that emphasized, clarified, or distinguished a specific argument, and used it to complete more extensive data analysis. This was done through a process of *de*coding, and *en*coding, by both deciphering the core meaning of a passage through reflection, and then appropriately labeling the passage (Saldaña, 2009). The analysis of the coding process is done by searching across the data set, (in this case interviews), to find repetitive patterns of meaning (Saldaña, 2009; Braun, 2006). These patterns of meanings can have many characteristics, as identified in the following list,

- Similarity (things happen the same way)
- Difference (they happen in predictably different ways)
- Frequency (they happen often or seldom)
- Sequence (they happen in a certain order)
- Correspondence (they happen in relation to other activities or events)
- Causation (one appears to cause another) (Hatch, 2002, p.155)

For this investigation, I have found elements of all of these pattern characteristics in all of the coding that was undertaken.

The main challenge I had with using ATLAS.ti was my limited ability at speaking Spanish. It took many hours to listen to the interviews in Spanish through ATLAS.ti, and although I could follow the main ideas of the conversation, it still took me awhile to understand the exact thing that was being said. This created problems, as I could still direct quotes from ATLAS.ti, but then I had to translate them to English in order to use them for the thesis.

ATLAS.ti was still useful for coding, but would be a much more effective tool if the interviews were in a language I am fluent in.

PART 3

Analysis and Conclusions

Chapter 7

The chatarreros of Catalonia: How they are viewed and how they view themselves

This chapter focuses on the informal workers of Catalonia: who they are, where they are from, how they are viewed, and how they view themselves. Though the chatarreros are from multiple countries, the majority of participants in the case study come from either Senegal, or Gambia, located within Senegal, so therefore this chapter starts with the history of Senegalese immigration to Spain. From there, demographic information is provided regarding the education level, fluency, and ethnic origin of the chatarreros of Catalonia. Next, there is a discussion about how the various informal recyclers are viewed in Catalonia, providing both a historical as well as modern context. Finally, insight is provided into how the chatarreros view themselves.

1. History of Senegalese immigration in Spain

The case study for this investigation was carried out with sub-Saharan west African immigrants. Though many countries comprise western sub-Saharan Africa, the majority of the people that comprise this investigation are from Senegal or Gambia, while a few are from surrounding countries, especially Guinea-Bissau, Guinea, Mali, and Mauritania. Since the majority are from Senegal (City of Granollers, 2013, 2014, 2017) and Gambia, which is located inside Senegal, the focus of this section is on immigration from Senegal.

Immigration to Europe is not a new phenomenon for the Senegalese. In the 1960's, the majority of migrating Senegalese went to France (due to both country's shared histories), and other African countries such as Ghana, Gabon, or the Ivory Coast. Additionally, many Senegalese were hired by the French industrial sector, or recruited into the French army (Baizán, 2019). In the 1980s, a profound economic recession, coupled with a process of deregulation and

liberalization in Senegal hurt the living conditions of everyday Senegalese, and since neighboring countries were also affected, many started migrating to other parts of Europe (Baizán, 2019). In conjunction with this recession in Senegal, the labor market in Spain and Italy went through a process of industrial restructuring and partial deregulation, opening up labor opportunities for Senegalese migrants in these two new countries (Baizán, 2019). During this period, the majority of Senegalese migrants lived and worked in agriculture areas, settling on the margins of the cities (Jabardo, 2006). Since the 1980's, the number of Senegalese communities have continued to expand in both of these countries. However, it wasn't until the economic recession of 2007 that employment opportunities in Europe started to decline, and Senegalese started looking for more opportunities outside of the agricultural sector, many turning to urban activities.

Since 2007, emigration from sub-Saharan Africa to Europe and the United States increased by 30% (Galarraga, 2018). According to a 2018 survey by the Pew Research Center, "since 2010, at least one million sub-Saharan people have legally settled in the European Union" (Galarraga, 2018). In fact, in 2018, Senegal ranked tenth in the list of countries with undocumented immigrants who arrived in Europe (Baizán, 2019). Furthermore, this migration wave is not going to stop anytime soon. A 2017 survey revealed that 44% of Senegalese (from a population of around 15 million) revealed plans to seek life abroad in the next five years (Galarraga, 2018). It is important to point out that not all of the Senegalese immigrants who come to Europe stay in Europe. As pointed out by Baizán,

> After 10 years, about one third of Senegalese immigrants in Europe return to their country. In most cases it is a voluntary decision; however, about 5% of these returns are administrative expulsions. According to the research carried out, the probability of returning would be multiplied if the difficulties and costs of migrating to Europe imposed by migration policies were reduced. Migrants are reluctant to return if the possibility of emigrating again is closed

> and, above all, if they have no guarantees of being able to reintegrate economically in Senegal. (Baizán, 2019)

This data shows that two-thirds of the Senegalese immigrants remain in Europe.

There are two main reasons for immigration from Senegal: the labor demand in Spain, and economic insecurity in Senegal (Baizán, 2019). While interviewing recent graduate students in Senegal, Jabardo (2006) was told that it is more cost-effective for Senegalese to try their luck in Europe than to continue going to a school to receive a degree that they will never be able to use (Jabardo, 2006). Additionally, it is extremely hard, especially if you are a low social level, to make money in Senegal. As Jabardo (2006) states, "to some extent emigration is mutating the criteria of social prestige" (Jabardo, 2006 p.42). This mutating of social prestige is due to the fact that about half of the immigrants in Europe send remittances to their families back home on a regular basis (Baizán, 2019). The extra money received by the families back home in Senegal allow them to have a better quality of life, including access to more resources and an improvement in their welfare and social position(s), thus increasing their social prestige (Jabardo, 2006; Baizán, 2019). A professor at Cheik Anta Diop University in Dakar summed it up this way, "In the past, emigration was identified with the shepherds, peasants or workers. Now the emigrant is a more prestigious person in Senegalese society" (Jabardo, 2006, p.42).

The route to Spain for Senegalese migrants has changed over the years. The first Senegalese immigrants came with a visa obtained from Dakar, Mauritania, or another African country such as Ivory Coast, Gabon, or Congo. Later, Senegalese immigrants traveled north through Morocco, ending up at the towns of Ceuta and Melilla in the northernmost part of the country (Jabardo, 2006). Today, many Senegalese migrants take what is called, "the Libyan route."

Map 7.1: The Libyan Route

Source: (Parellada, 2018)

The Libyan route covers 5,000 kilometers of land before reaching the Libyan coast, where the migrants then try to cross the Mediterranean. This route goes through 5 different countries, Senegal, Mali, Burkina Faso, Niger, and Libya. There are buses that travel from Senegal to Bamako in Mali, Oagadougou in Burkina Faso, Niamey in Niger, and finally to Agadez in Niger. Once in Agadez, you need a trafficker to get you through the Sahara Desert (Parellada, 2018). The route can be dangerous and long, often taking months, and sometimes years. There are smugglers for certain parts of the journey, thieves that steal from you or hold you for ransom, and prior to the internet and cell phones, there was limited contact with loved ones back home.

The chatarreros that participated in the case study mostly crossed the Sahara into Libya, and then spent a few months in Italy before arriving in Granollers. Others ventured across the Strait or the Canary Islands and spent a few months in Tenerife, Malaga or Granada before eventually ending

up in Granollers. All of the participating chatarreros knew that their final destination was the Granollers area since they already knew family or friends (neighbors of their hometowns) residing there.

2. Economic insecurity and lack of access to education in sub-Saharan Africa

So why are immigrants from Senegal and neighboring countries coming to Spain? As mentioned previously, labor demand in Spain, economic insecurity in Senegal play a vital role. The economic insecurity in sub-Saharan Africa mainly stems from a limited amount of opportunity that the migrants find in their country of origin. Ryan Huggins, who was a Peace Corps volunteer in Kedougou, Senegal for two years in 2003 and 2005 provides the following insight,

> There's not a lot of hope inside that country (Senegal) if you're growing up as a minority without a family with connections. Because even if you have an education, there's no job prospects. There are either government ones if you have connections to get a job in, or there are private ones that you have to have someone sending money back for. And the way it works to get something set up and start something, you need a lot of connections, and it's hard, so people tend to stick to their own ethnic groups. When people migrate, they probably stick to the groups they know. (Huggins, 2018)

As mentioned by Huggins, there are no job opportunities, especially if you do not have many connections, and are from a low social class. That is not to say that people who come to Spain do not have an education, but the level of education depended on where you lived and opportunities around you. In Huggins experience she states that, "in cities, probably everyone went to elementary school and High School, (public and private). In villages there was a (Christian) missionary school where children learned to read and write, yet for village kids, even finishing elementary school wasn't very common" (Huggins, 2018). Mrs. Toure informed me that "the majority of the people [chatarreros in Granollers] come from the "*campo*" (countryside) and did agriculture work with cows and sheep" (Toure, May 25). During interviews with the chatarrero,

this assumption was correct, these are men from the countryside who most had limited access to education. Two members had no education at all, one attended primary school, three attended secondary school, and two went to an Arabic school. Arabic schools are less structured and primarily religious focused, but do offer some language, reading and writing instruction, which focus on religious texts.

Although the focus of this paper is not focused on the migratory route of the chatarreros, it is important to mention that it is a significant hardship that sub-Saharan African immigrants endure to reach economic opportunities, and gives some context for the mental state and integrity of the people in this study. To provide a context of this experience, Toure states that often,

> families lose contact with immigrants for 2 years as they make the journey. When they finally arrive and contact their families, sometimes their families and wives have 'moved on´ since they hadn´t heard from them. Therefore, the families think that they are dead. After two years of not hearing anything, nothing from them. At times, their women leave them, and their property and their house….and they don't find out until after two years, they come here (Spain) and are able to contact people back home. (Toure, May 25)

This description of the journey validates the lack of opportunity that exists in the immigrant's country of origin, since they are willing to endure this type of hardship just to hopefully have some economic opportunity and hope for the future.

3. Languages spoken by the chatarreros of Granollers

The participants in this study spoke a total of seventeen different languages. The average number of languages spoken was 5.75. One person spoke some of 12 different languages, and the least amount was 3. Table 7.1 clarifies the languages spoken by the participants.

Table 7.1 Languages spoken

Language	# of people who speak it (out of 8)
Mandinka	7

Castellano	5
French	5
Wolof	4
Catalan	3
Fula	3
Arabic	3
Serer	1
Basinip	1
Berbere	1
Sarakhote	1
Dutch	1
Mossi	1
Haoressa	1
Yaroba	1
Santi	1
Soninke	1

Source: (Rendon – Author's own elaboration based on data obtained)

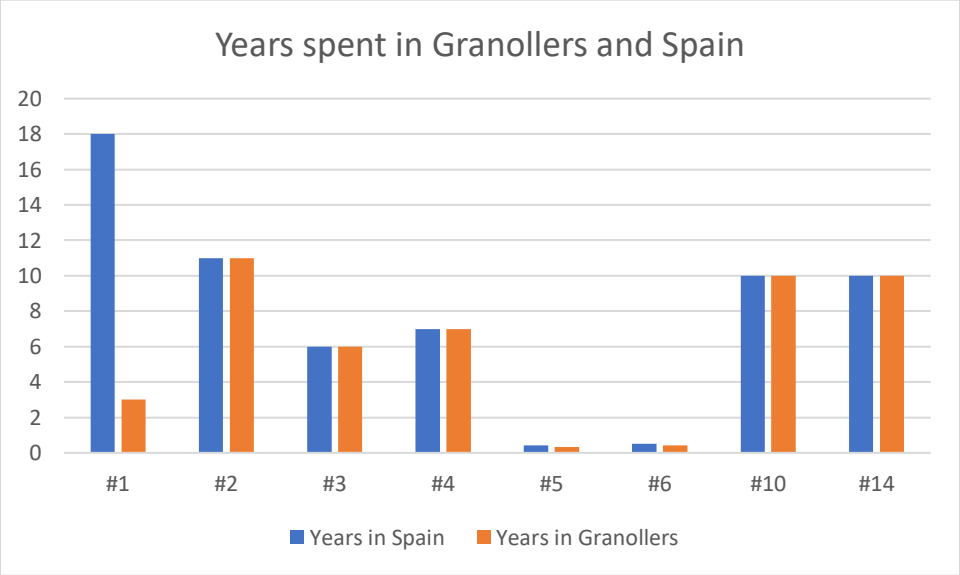
As Huggins asserts, even though financially these communities have limited resources, due to the proximity of neighboring communities that speak different languages, and because it is common for parents to speak multiple languages, "it's not uncommon for most people to know how to read and write and speak four languages" (Huggins, 2018). This was certainly true of the participants in this study, although it should be mentioned that although five of the participants said they spoke Castellano, this does not mean they are fluent, and from direct observation, and I would say only two spoke it at a level that would be considered equal to a level of an "independent user" in regard to the common European framework for reference of languages.

4. Time spent in Granollers

8.4 years was the average amount of time spent in Spain of the participants in the interviews. The outliers were eighteen years and five months, as the one man who had been in Spain for 18 years came over from Morocco at the age of five. 5.7 years was the average amount of time spent in Granollers of the participants in the interviews. As figure 8.1 (below) shows, most of the

participants either came directly to Granollers, or shortly after, and then stayed. When asked why they came, the reasons were either to seek work or for a better future, and they chose Granollers based on relationships with people that were already there. This reality is consistent with Huggins (2018) perspective that when people migrate, they gravitate towards pre-established relationships. When asked what their plans were for the future, six (75%) said that they planned on remaining in Granollers, one was interested in moving to another part of Spain, and participant #1 was interested in moving back to Morocco, his country of origin. What is revealing about this chart is that for the people participating in the study, once they came to Granollers, they stayed, and now are planning on staying for a long time.

Figure 7.1: Years spent in Spain and Granollers



Source: (Rendon – Author's own elaboration based on data obtained)

Although this is a small sample of people, it says that the people who are working in Granollers as chatarreros are not traveling around Spain or other countries in Europe, but are building community and want to continue staying in one place. This data also contributes to Lefebvre's ideas on citizenship that will be talked about in chapter 10.

5. How social class in country of origin determines work in Catalonia

When Senegalese immigrants arrive in Spain, their work options are very limited. Since they are not legal citizens, they cannot access formal employment, or receive the social benefits that are offered. According to Ignacio Fernandez, a social worker with El Xiprer,

> Not everyone ends up as a chatarrero. There are social classes. When people arrive and they don't have documents, there are options for working: farm work, chatarrero, etc. There are some that would NEVER go to work as a chatarrero. Some will go pick lettuce. Others will join in the collective ´mantero´ work. These tend to be more educated people. They work together as a collective. But chatarreros are not working collectively. They are working alone. Very independently. Isolated. They are people from a lower social class. People with more ´lacks´ - less studies. (Fernandez, 2018, May 25)

This information tells us many things. First is that although they have no legal documentation or citizenship, there are work opportunities for newly arrived immigrants. Second is that due to the social stigma, many would choose not to do this type of work if given other options, and third is that there is a social class that exists amongst the immigrants themselves which has an effect on the type of work that they will engage in once they have reached Spain. When Mr. Fernandez is pressed further about job options for newly arrived immigrants who are not citizens, he states that there are other options within the black market, saying that "they can work in the field, building houses, work in gardens, and pawn materials" (Fernandez, 2018). In fact, these are all preferred options, and collecting cardboard/metal is the last resort, when work in these other areas cannot be obtained. This is also consistent with what the chatarreros told me themselves. As mentioned in chapter two, the social stigma of the work of chatarreros is the same in Spain as it is everywhere in the world, the perception that they are doing work that is degrading and dirty (Reno, 2009).

One of the most interesting and unexpected findings in this investigation is that what work Senegalese immigrants ultimately end up doing is somewhat determined by their ethnic group and connections back in Senegal. According to Huggins, when the Europeans were colonizing this part of Africa, "the ethnic group's natural territories originally moved across the latitude lines (east to west)…and when the Europeans made new countries and colonies, they all went vertical, so every country has a mix of ethnic groups that were not historically sharing territory together " (Huggins, 2018). The result of this was that people still had ethnic and cultural connections with their original group, but were now a part of a new political group that they were forced to connect with. The new political identity of these people still had limited influence on their lives. As Huggins states, "because I lived on the border with Mali and Guinea it was a very fluent border and people went to their neighbors on the other side like they always did, you know, and just the concept of it being one country didn't serve people because the Wolofs controlled this, and the Pulars controlled that, and the Mendinks were down here" (Huggins, 2018). In other words, for the people living in this region, culture, ethnic identity, and connections still matter more than national identity, and these hierarchical and social classes are now being played out in Spain.

Since those that choose to work on farms are out in the country, and those that do construction are often on sites that are also visibly removed from the public, the majority of the sub-Saharan African immigrants that are seen in the urban space are broken down into two groups, the *chatarreros* and the *manteros*. These two distinctions are based on the Castellano word that describes their activities. Chatarreros (chatarra = scrap/metal) are the waste pickers at the base of this investigation, and manteros (manta = blanket) are people selling products on top of a blanket (usually a white sheet). According to Toure, the waste pickers all want to be

manteros since it is a higher status profession, however, it will never happen since they are from a different ethnic class. According to Toure, the manteros are Wolof, and the chatarreros are Mendink (Toure, 2019), which are two distinct ethnic classes. When asked about the ethnic divide in Senegal, Huggins states that "The Wolofs run the show…it's definitely a hierarchy. You're not going to see a Mendink President. Your connection is always your family. Family is your connection with everything" (Huggins, 2018). Therefore, which one of the two jobs (chatarrero or mantero) that a sub-Saharan African immigrant without citizenship might perform in Spain is largely determined by the ethnic group they come from, and the connections that they have. This dialogue with a chatarrero in one of the follow-up interviews further exemplifies this reality,

> #3: I don't. I've seen people, but I don't know them. Most of those who are manteros, they speak wolof. I speak Mandinka. You see them but you don't know what to say to them. We have no relationship.
> Q: But there are people who live here in the Granollers area and go to Barcelona to work as manteros?
> #3: Yes. But they're wolof. Mendinks don't do it.
> Q: Who makes the most money, manteros or those who collect cardboard and metal?
> #3: The manteros. They earn a lot more. Yes. They themselves say that what they earn per day, working in a company they wouldn't earn that much. That's why they don't want to work on anything else. (Interviewee #3, 2019)

Huggins further clarifies the social state of sub-Saharan west Africa by affirming that,

> These different groups used to inhabit different regions (essentially spanning latitudinally across similar ecosystems) and warred with each other occasionally. Then colonialist came in and drew country boundaries that lumped disparate groups together and cut off some small groups from their larger kin. And now there is still very strong ethnic group affinity and alliances holding money, power, jobs etc. The Wolofs dominate everything in Senegal for example, and everyone has had to learn to speak Wolof regardless of their own ethnicity. Mendink are the majority in Gambia, Bambara in much of Mali, etc. So, it leads to tensions between groups but at the same time there is a shared history of being cut off from their ancestral lands and ways of life and pride in their country (especially their football team). Things evolve, groups intermarry and people change…it's complicated. (Huggins, 2019)

Does this mean that a Mendink from the countryside would never become a mantero? Not necessarily since people intermarry, immigrants form connections in route to a new way country, and personal charisma, access to education, and skills can help, but the chances are small, or as Huggins proclaims, 'it's complicated.'

6. How Catalonians view the work of the chatarrero

How Catalonians view the work of the chatarrero of course depends on the person you are interviewing, and their interactions or lack of interactions with the chatarrero. The following empirical data is from interviews primarily with city employees through-out Catalonia, but also elected officials, business owners, and social workers in Granollers. The codified answers generally fell into 4 categories; 1) the number of informal recyclers, 2) El Drapaire (the historic waste pickers in Catalonia), 3) various difference amongst the waste pickers in Catalonia, 4) and a general (and sometimes specific) concern for the men doing this work each day.

6.1 Determining the number of informal recyclers in Catalonia

It is not easy to offer a definitive number concerning the informal recyclers in Catalonia as that number is constantly shifting due to several factors including parallel jobs that informal recyclers might be performing, the fluctuating prices of materials, and the migratory flows of people. The estimates made by the technicians interviewed are disparate and based on very personal intuitions. While the presence of informal recyclers exists in all regions of Catalonia, in general it appears that the phenomenon of sub-Saharan migrants or Maghreb people (those from northwest Africa) with a cart walking down the street (similar to the chatarreros in the case study) is more prevalent in large cities or metropolitan areas, whereas in smaller cities and rural

areas it is more common to see informal recyclers operating out of a van. For example, in the cities of Mataró, L'Hospitalet de Llobregat, and Rubí, the experts interviewed make the claim that there have been more than one hundred informal recyclers with carts in their streets. As stated by this technician in the city of Mataró,

> I would be fooling you if I tell you fifty or a hundred. That was in the past, but now it's hard to see them. Really, I don't know, twenty people are going around now. (Municipal staff #1, City of Mataró)

Or this example in the city of Rubí,

> Question: And how many 'Chatarreros ' do you think there are?
>
> Answer: My perception..., which is a feeling, is about a hundred if I had to put a number on it. (Municipal staff #5, City of Rubí)

In cities located in more rural or less densely populated areas, perceptions are much lower. In these cities it seems that the majority of informal recyclers are using a van, and the recyclers do not always live in the same town or city in which they are collecting materials. As mentioned by this technician from the city of Sant Sadurní d'Anoia,

> In Sant Sadurní there are a couple of Maghreb that go to the deixalleria. There are three or four people. Between the deixalleria, the emergency area and the paper, maybe 10 or 15 people. (Municipal staff #8, City of Sant Sadurní d'Anoia)

Or this statement from the technician in the city of Valls,

> I could tell you that I have not seen more than 10 or 15, but what's the full picture? I can't say... There are many, but especially in the industrial area. Although it is generally close to all the containers, people go there, and they dump everything. And this becomes a point of exchange, people know that it exists. Like a market, one comes and drops things off, and another comes to collect it. (Municipal staff #11, City of Valls)

Or this example in Salt,

> "With a cart there are very few, people usually use a truck or a van, which there is more. In a population of 30 thousand inhabitants, I've seen one or two people who use a cart, but a van, I could identify between 6 and 10, which will not only collect here, but move around to nearby villages. (...) I would say they are sub-Saharan, or Moroccan, those from eastern Europe, they were in vans. With a cart, there were some here, and now I don't see them, two sub-Saharan boys and a Moroccan boy." (Municipal staff #4, City of Salt)

This quotation from Salt is interesting because although Salt is a somewhat large city for Catalonia, it uncharacteristically has informal recyclers using a van for collection and very few using bicycles and shopping carts. This anomaly could be because the urban environment in Salt discourages carts in favor of motorized pick-up, but I do not know. As demonstrated above, the number of people participating in the informal recycling sector greatly varies across Catalonia, and the numbers that we do have is from speculation by the city employees. As well, aside from the city of Salt, the majority of large cities see more people collecting with bicycles and shopping carts, while the more rural areas tend to trend toward vans.

6.2 El Drapaire – Historic rag pickers in Catalonia

An interesting discovery from conducting this research was learning the history of this profession in Catalonia. Like the rest of the world, there has always been an informal recycling sector in Catalonia, as demonstrated by this city employee in the town of Valls.

> I believe that they [IRS] have always existed, for all life, before when there was no waste law there were the recoverers, both paper, iron, whatever, now there it is a legal system, for example, they used to come and buy your newspapers…a gentleman would come to the house and we would separate the paper and give it to him. For the paper industry it has always been an entry point for them. (2018, Municipal staff #11, City of Valls)

And again, by Perez,

> The cardboard and the metal will always be in the market to be picked up by who wants to do it. I have always lived here and there has always been the underworld collection (cardboard, glass, iron, etc.). (Perez, July 2 email)

Though this profession has always existed in Catalonia, there is one waste picker identity that is the most famous, and he is called *El Drapaire*. The literal translation of drapaire is "draper", referring to fabric, cloth or textile, and which in the early 20th century made up the Ragpickers trade Union of Barcelona (Porras, 2017). Due to the historical account of the drapaire, their work

is socially recognized and a clearly defined activity in the local consciousness. In a few of the interviews with city employees, the interviewee made reference to current chatarreros as modern-day drapaire. For example, the city employee in Sant Sadurní d'Anoia asserts,

> At the moment there are people who no longer pick up the cardboard from the containers, I mean, I don't know what to call them, I was going to say Romanians, but I don't know if it's politically correct, how should we call these people, drapaire? (2018, Municipal staff #8, City of Sant Sadurní d'Anoia).

What was interesting in these interviews, is that where chatarreros are usually seen in a negative context, el drapaire is more complex. El drapaire is mostly discussed in a positive light, but also as a character that walks the line the between the light and the dark. This balance is revealed in Catalan culture, such as in the 1967 song "El Drapaire," by the famous Catalan singer Joan Manuel Serrat, who used lyrics to explain the hardships of the work. For instance, "every morning whether it was sunny or raining, despite the cold or the fog, from street to street we heard the cry, 'Women, here comes el drapaire'" (Serrat, 1967). Further into the song, Serrat sings these lyrics, "I am the drapaire, I buy bottles and papers, I buy rags and dirty clothes, old umbrellas and furniture…I am the drapaire, and the singers were singing, 'You're getting too angry already. Has your mother not told you that I am the man with the sack?'(Serrat, 1967.) This last sentence is in reference to the drapaire stealing children with his sack if they misbehave. This is interesting because on the one hand, the drapaire is seen as a hard-working person, whose labor and profession is respected, yet at the same time, he is the local boogey man, who steals children. This demonstrates that within the historical imagination of Catalonians, the waste picker is both industrious, and at the same time, capable of horrible acts. El drapaire also is represented in the children´s book, *En Roc Drapaire*, about a young drapaire out on adventures around the city. Moreover, if you type in "drapaire.com" into any search engine, it will take you to a brewery in Barcelona called *El Drapaire de la Cervesa Artesana*, or

"the rag picker of the artisanal beer." These examples illustrate el drapaire's cultural relevance and social status in Catalonia.

So, what happened to the famous el drapaire? It is understood that many of the old drapaire, though initially informal, eventually became formal and today are the *recuperadoras*, or middleman, who buy the cardboard and metal from the chatarreros, and often from the city as well. As a city worker in the town of Besalú mentions, "the old drapaire, some evolved to be the current waste managers" (Municipal staff #6, City of Besalú). This statement was proven true, as when interviewing Ferralles Batlle, one of the recuperadoras in Granollers, the owner spoke from a position of pride stating that, "we are lifelong drapaire. When I met my husband, he was the son of the village clothier" (2019, Ferralles Batlle). Ferralles Batlle is an example of a drapaire becoming a legal profession and now acting as a middle-man to buy materials from the chatarreros.

In a similar perspective to modern day chatarreros, el drapaire was seen as doing a job that was of low social class but beneficial to society, and as someone who put in long hours of hard work in order to complete his task. However, in the collective memory of many Catalonian residents, the drapaire of the past and modern day chatarreros differ in two important ways; 1) el drapaire were Catalan or at least spoke Catalan, and/or 2) the work they were doing was legally recognized, whereas today, the chatarreros are not Catalan, nor speak Catalan, and are doing work that is currently illegal. Because of these two things, the chatarreros do not hold the same community prestige of the drapaire. As a municipal employee in Besalú tells it,

> Here, we used to have the typical drapaire, which is true, that in many cases were people of Gypsy ethnicity, but I remember cases of when I was little, that they were fully integrated people here, who spoke Catalan even, and who had children in school or in college and they were engaged in an activity that was then totally lawful and without any problems, because there were no waste management procedures (Municipal staff #6, City of Besalú)

This quotation is interesting since it shows that ethnicity is a consideration in the role of the drapaire, and how, from this staff's perspective, those that spoke Catalan were lawful. Here is a more concrete example from the city of Girona clarifying the ethnic perception of el drapaire.

> There were draperies in Girona and they were not the gypsies, it was a population here, in the nearest old town of San Daniel. In San Daniel road there were drapaire, that is now a select area and has changed completely, but they were not gypsies. (Municipal staff #9, City of Girona)

In this case, the ethnicity of the drapaire was an important part of how this person remembered them. These quotations emphasize the difference in perception between the drapaire of the past and the chatarreros of the present.

6.3 Differences amongst the informal system

The municipal workers had a hard time talking about the informal recycling sector and trying to identify who exactly they were. What was realized is that there is no colloquial language, neither in the technical or administrative realms to identify these people. From the interviews with the municipal employees, there is no common word (aside from drapaire of old) used to designate the informal groups of men and women who select, collect, transport, and sell materials from the urban waste. The ways that the municipal employees identify these people seem to fall into two main categories; 1) the type of transportation they used for collection, and 2) the different ethnicities that were doing the work.

6.3.1 Different modes of transportation and different biases

The first criteria with which formal recyclers in Catalonia tend to classify informal recyclers is by the mode of transportation they use. The three different modes of transportation for collecting materials are; a supermarket cart, a bicycle, and a van. In the eyes of the local technicians

interviewed, this classification could have some relation with the ethnic origins of the different groups (i.e., cart-sub-Saharan, bicycle-Maghrebs; van-Gypsy, etc.), as noticed in this statement,

> There are people searching, people with a bicycle looking, and with boxes glued to the bicycle, or with shopping carts, some with a shopping cart. It also depends on the shape of the city, which allows certain types... But it is not very common to see what you see in Barcelona. Here most are Maghreb, women and men, who dive and go and look, but I think very little organized, at least what I see, what I detect. Vans were used when the paper and cardboard were paying well, and then yes there were vans, but they were gypsy. (Municipal Staff #9, City of Girona)

Similarly, the physical space of the municipality also influences the way the activity is carried out, and which mode of transportation is used. If it is a territory with several nearby towns, vans can make more sense, as you couldn't cover that much ground with a shopping cart or a bicycle. If it is a municipality with recovery companies located near the city center, supermarket carts or bicycles can be the right tool. (This specific aspect will be covered in Chapter 10, perceived space).

Delineation by transportation type was most often used regarding the bias of perception the formal waste managers held. For example, the main perceptions of city employees through-out Catalonia, as well as the Consorci per a la Gestió dels Residus del Vallès Oriental (CGRVO) is that there is a difference between organized groups with vans, whom in their perspective are more likely to steal, and the chatarrero who are pushing carts through-out the city and selling directly to the recuperadoras. Or as stated by a municipal employee in the city of Sant Sadurní d'Anoia, "so we have to separate very well the ones we see digging from a container and those who go in a van" (Municipal staff #8, City of Sant Sadurní d'Anoia). Most city employees, as well as the CGRVO viewed the chatarrero from Africa as not having a big impact on the larger system, and seemed to be more sympathetic to their welfare, while believing that they creating few if any problems. As this municipal employee in L'Hospitalet states,

> They (the chatarreros) don't generate conflict, they're people who work alone, they go container to container trying to look for what they can inside the trash. They also go looking

> inside the gray containers, looking for some metal to see if it can have any value, and then continue down the road (Municipal staff #2, City of L'Hospitalet).

A municipal employee in the city of Rubí talked about the benefits that chatarrero offer in regard to the cleanliness of a neighborhood. Stating that,

> When you (city employees) go to clean there (where chatarrero have been) it seems that they are doing a social service, they are helping to give a little more decorum to that environment that is there, and I don't feel it as an extra cost because they're doing this activity (Municipal staff #5, City of Rubí)

Although this is not the case with all city employees, this message was heard from multiple people. From their perspective, there was a clear delineation between those who are organized with a van, and those that are pushing the shopping carts around and usually working by themselves, with the prior in a negative light, and the latter in a somewhat more neutral light.

The municipal employees and CGRVO both condemn those members of the informal recycling sector that are collecting materials around Catalonia with the use of vans because, from their perspective, the people using vans are both 'stealing' from the deixalleries (more on this in chapter 11), and they are choosing to stay informal to cheat the system. They feel that if this sector of the recycling system is that organized, then they should go through the legal process to get registered and compete legally with the other recuperadoras. An employee from Girona (Municipal staff #9) mentioned that in Girona, those working with vans did not meet any legal conditions, did not have insurance, and so therefore, his department chose to report them to the police. His over-arching view concerning this sector was that "if you want to do this (participate in the recycling system), then do it right, and register" (Municipal staff #9, City of Girona). This perspective was mentioned multiple times by those in the formal recycling system.

6.3.2 Ethnic differences amongst the informal recycling sector

The second way that municipal employees classify the different members of the informal recycling sector is by ethnicity; African immigrants, eastern European immigrants, Catalan, Roma/Gypsies, etc. This classification, although it can sometimes be related to forms of transport or type of materials collected, is believed to have its foundation in the networks of communities that are dedicated to working as informal recyclers, or with migrant collectives that are settled in certain municipalities. In this sense, the municipal employees perceive a spatial delineation depending on the neighborhood or area of the municipality in which these collectives are located. It can be argued that the populational distribution of migrant communities on the territory also plays a relevant role in the existence of this informal activity. The following statements from municipal employees demonstrate the use of ethnicity to determine different types of informal workers:

> There are people from everywhere, but there are also local people, it is true that a lot of them are immigrants from Africa, from Eastern Europe, from Romania, but there are also some from here. (Municipal staff #2, City of L'Hospitalet)

Here are wo examples from the city of Sant Sadurní d'Anoia.

> In Sant Sadurní there are a couple of Maghreb that go to the deixalleria. There are three or four people. Between the deixalleria, the emergency area and the paper, maybe 10 or 15 people (Municipal staff #8, City of Sant Sadurní d'Anoia)

> Of course, typifying a collective is like... There are Maghrebs, there are some family of Roma ethnicity and there are people here of few resources. (Municipal staff #8, City of Sant Sadurní d'Anoia)

An example from the city of Terrassa,

> Here in Terrassa. the gypsies would top the market… but with the crisis of the east (Chinese stopping collecting materials from outside of China), Maghrebs, 15%, Africans, not so many. (Municipal staff #3, City of Terrassa).

An example from the City of Girona,

> Here most of them are Maghrebs, women and men who rummage and pass and seek. I think they are very unorganized, at least what I see, what I detect. Vans we had during the time

> when the paper, the cardboard was paid well, and then there were vans, but they were gypsy. (Municipal staff #9, City of Girona).

This example is unique in that it includes both women and men. A unique part of the chatarrero phenomenon in Catalonia is that there are vastly more men than women participating in this work, and amongst those from sub-Saharan Africa, almost entirely men. This is different than global gender statistics involving informal workers, where the balance between men and women is generally equal, and where "in developing countries, the percentage of women workers who are informally employed is substantially higher" (Bonnet, 2019, p.5). According to Scheinberg et al. (2016), most waste pickers in the EU are men, except in the case of Roma minorities, where this activity can be individual or family based (Rosa, 2018).

This final example from the city of Salt shows how municipal staff can often combine both mode of transportation and ethnicity, and link them together.

> I would say they are sub-Saharan, or Moroccan, those from Eastern Europe, they were in vans. With a cart, there were some here, and now I don't see them, two sub-Saharan boys and a Moroccan boy." (Municipal staff #4, City of Salt)

What this data demonstrates is that municipal employees often view the informal recycling sector through the lens of ethnicity. This data shows a unique link to Bullard's work on environmental racism, the foundational blocks of environmental justice, by showing a distinct group of marginalized people facing social stigma who are identified externally by their ethnic origin.

6.5 Kindness and welfare concerns

A very hopeful finding in this investigation is that there was a lot of genuine care for the welfare of the chatarreros. Of course, this is not the case for all people interviewed, but even if there was not an outright willingness to help the chatarrero, there was an understanding of the challenges that they face. This was seen from one of the first meetings that I had with social workers and municipal workers in Granollers. While riding the train home reflecting on the meeting, I wrote in my journal, "everybody here cares about the welfare of the chatarreros and do not want to participate if it (the investigation) could hurt them in any way." (Rendon, May 25, 2018). At numerous times when planning out the investigation, the municipal workers (as well as the chatarreros themselves) were only willing to participate if the findings would not hurt the chatarreros in anyway. One social worker told me flat out, "we want to make sure it (the case study) doesn't go against the chatarreros – For example, Ecoembes (the partial funder) could use the data to harm the people" (Perez, 2018 – May 25). Of course, these ethical considerations are necessary for a doctoral investigation, but I was surprised at the level of care and compassion that was shown towards the welfare of this population, especially since discrimination and stigma are prevalent with waste pickers in most parts of the world. This concern for the welfare of the chatarreros was seen amongst the social workers, some of the business owners, the recuperadoras and the municipal workers that I engaged with.

It is not surprising that this type of concern would come from social workers since this is their profession, but when I asked one social worker how he thought community members in Granollers viewed the chatarreros, he proclaimed that, "I don't know what everyone thinks, but principally, I think there is a collective awareness of respect. The chatarrero isn't a violent person, doesn't start problems, they work hard" (Fernandez, 2018). One business owner,

Amadeu Barbany, proudly talked about the character of civic participation within the city, and knew some of the government's attempts at helping the chatarrero, mentioning language classes, gloves that were given out, and some improved carts for the chatarrero (Barbany, 2018). As well, Mr. Barbany talked about the group, "Granollers Más Colores" who are working on making a more accepting community, and believed that government should create an exhibition on the chatarrero to 'put a story with a face' and show the value that they provide (Barbany, 2018). Certainly, this is not the view of all business owners within the city, but Mr. Barbany offered a surprising amount of support for the chatarreros.

Ferralles Batlle, one of the recuperadoras that were interviewed for this investigation, also spoke mostly favorably about the chatarreros. This could be because Ferralles Batlle are making a profit off of the chatarreros work, but in conversations with the owner as well as my personal observations in the field, there seemed to be a genuine respect and concern for the chatarreros. Whether or not they had the same level of compassion as the social workers, my perception is that both the recuperadoras and the municipal employees had sympathy about the situation that the chatarreros found themselves in, and believed that they were not criminals, but people doing what they had to do to survive. In discussing the current condition of the chatarreros, the owner of Ferralles Batlle stated that

> The reality is, they have to eat. This is what you may not understand. These guys, no matter how hard it is to retrieve the materials, will go in search of them. They have no other choice. These guys aren't going to steal. Maybe there will be some, because I was robbed, but 98% are not thieves. They are going to make a living working…They don't leave their homes because they want to. (Ferralles Batlle, 2018)

This understanding, that it was not so much choice as survival, was also prevalent in conversations with the municipal workers. As described by a municipal worker in Besalú,

> As long as there are people in need, people will seek their lives as best as they can, and better not to dock in the street. It's not an easy or pleasant activity. They are livelihoods, they're not business. (Municipal staff #6, City of Besalú)

And again, in the city of L'Hospitalet.

> The ones in the cart are the last link of the chain, after them there is no one else, and with this they have to pay for food, because they will not get much money either, they must live in an area. Each must have their zones of influence and they go on. (Municipal staff #2, City of L'Hospitalet)

This perspective is unique in the global plight of waste pickers, and was an unexpected surprise that went against the standard narrative of the informal waste picker. Since this was not an isolated case solely in the city of Granollers, but shared by municipal employees through-out Catalonia, it makes the situation of waste pickers in Catalonia different than the global experience.

It should be noted that in 2015 the NGO "El Xiprer" created a public awareness campaign of their own titled "(in)Visibles," which sought to tell a story about who the chatarreros were and put a name with a face. This campaign focused on the positive attributes of the chatarrero, especially the environmental difference their work was making, and some information about who they are and where they came from.

Picture 7.1 (in)Visibles of Granollers

Source: (Rendon – Dec. 12, 2017 – created by El Xiprer)

By looking at the differing roles of the formal recycling sector and non-profits is not surprising that the government acted out of concern about perception and cleanliness of the city, while the NGO's focus was on the welfare of the chatarreros themselves.

7. How chatarreros view themselves: Ethnic, religious, environmental steward, and ashamed

As mentioned earlier, the participants in this study first and foremost identified themselves by what ethnic group they belonged to, so if asked, people would say I am Mendinka, I am Bambara, or I am Pulaar, for example. As previously mentioned, this somewhat determined the work they were doing in Spain, but also allowed them a structure within other sub-Saharan

African groups, and they used it to make connections and search out commonalities they might have with others.

The other way the chatarreros of Granollers self-identified was by religion, as by far, the vast majority are Muslim. This became apparent to me as the first time I met my interpreter, Astou Toure, I wrote in my journal, "first meeting with Astou. She is great. Small, strong, wearing a head scarf and not shaking my hand" (Rendon, personal journal May 17, 2018). I also realized the importance of their religion based on my participatory observation, and my relationship with one chatarrero in particular, Actor #2. He was the person who helped me get my own cart, who took me around the city and showed me the ropes, and whom I had the strongest connection. I realized that his religion helped shape his day. He would get up early and get to El Xiprer for a morning meal, then work until 14:00, when he would stop and go home to wash and pray before returning to work (Rendon, personal notes June 22, 2018). A week later, when I tried to give him some money for helping me out, he refused it and said, "I have everything I need, Allah provides" (Rendon, personal notes June 29, 2018). Due to the religious identity of the chatarreros, we also had to plan our case study around the dates of Ramadan, as we knew that due to the religious holiday, our data would not be consistent with other months.

In the follow-up interviews, the participants were asked for their perception of the other informal recyclers who were operating at the time in the Granollers area. From their responses, it sounds like there is a cordial relationship amongst the different chatarreros in Granollers. For instance, when they meet other chatarreros on the street, they often greet each other and talk. They tend to have good relationships with each other, and some on weekends spend time with each other.

> Q: During the day do you talk to other people who pick up cardboard like you? Can you talk to them?

#3: Yes. I know people who also pick up...
Q: Where do you talk?
#3: On the street
Q: But do you already know each other?
#3: Yes. Some of them I do. (Interviewee #3, 2019)

Or this example from interviewee #1,

> #1: Yes, yes. If we meet, we talk to each other, we greet each other, without problems... Sometimes we Invite each other over. On Saturday or Sunday, if there's not much activity, they come to my house or I'll go to theirs, and we eat and talk... (Interviewee #1, 2019

What this demonstrates is that even though they carry out this activity alone, individually, they maintain a network of contacts with other people who are also doing the same work. Despite this, it appears that this network is also informal, with no specific structure outside of ethnic and language connections.

Another consideration is the environmental benefits that the work of the chatarrero is providing. The chatarreros are making an environmental impact hourly based on the work they are doing. As Gutberlet states,

> Binners (name for waste pickers in Canada) are environmental stewards because they recover resources that otherwise would be discarded and would often end up at the landfill. Recovering these materials for recycling saves natural resources, energy, and prevents further environmental destruction as a consequence of primary resource extraction. (Gutberlet, 2010, p. 3340)

From this perspective, chatarreros are environmental stewards, who are making a positive contribution to both their community and to the planet. As part of the questionnaire, when I asked them if they thought that they were making a positive environmental difference, of the eight, seven (or 88%) said yes, and one said no. Though this is a small sample size, it is consistent with the views of most waste pickers around the world. That is, although they are doing work that they have to do in order to survive, many also take the position that the work they are carrying out has a positive impact on the planet.

Aside from the gratification they took from the environmental benefits of their work, there is still a sense of shame for some of the chatarreros. Due to the negative stigma, and low social class of the work, most chatarreros were not proud of the work that they were doing. In the first meeting I had with the social worker at El Xiprer, he told me that, "they are not proud of their work, and hide from their families at home that they are doing this. They didn't come here to do this type of work" (Fernandez, May 25). This is very true, and I heard this story from multiple chatarreros. They thought that there would be economic opportunity in Spain, but they never imagined that this is the work that they were going to be doing. Mrs. Toure frames it this way,

> The majority of chatarreros are from the 'campo,' and that those from the city with more education would be embarrassed to do this work. The majority of these people have come over on the rafts, have never had the opportunity to study, do not possesses documents, and the little money they make, they send home. But they are not able to explain this to their family. They want a better life. There are some that have university degrees that are doing this, but without documents, it may be the only thing you can do. There are people from the same communities back home, that came over on the same rafts, and that will encounter each other, and it is embarrassing to be found doing this type of work. (Toure, May 25)

This is the harsh reality of the experience of the participants. Most come a social context with little economic opportunities, and suffer through a dangerous trip to get to Spain. Yet, due to a lack of citizenship and a lower social class, they end up spending their days rummaging through trash cans to make enough money to stay alive and try and send money home. Often when their families back home ask what they are doing for work, they lie, as they are ashamed of the work that they are doing. After spending a day pushing a shopping cart around the streets of Granollers, I wrote in my notebook that, "while pushing my cart, I felt invisible. Nobody looked at me, as nobody knew me, nor I them" (Rendon, personal journal June 22, 2018), but then I remember what my friend (Actor #2) told me, "keep your head up. Do not look down on yourself, you are surviving" (Actor #2, 2018).

Chapter 8

Limits of informal recycling sector activities through the social production of space

The conditions in which the activity of the informal recycling sector is developed, are a direct response to the different spaces that they occupy. In Henri Lefebvre's 1991 book, *The production of space*, Lefebvre separates space into three different sections, perceived space, conceived space, and lived space, or the perceived-conceived-lived triad (Lefebvre, 1991). Purcell breaks it down this way,

> **Perceived space** refers to the relatively objective, concrete space people encounter in their daily environment. **Conceived space** refers to mental constructions of space, creative ideas about and representations of space. **Lived space** is the complex combination of perceived and conceived space. It represents a person's actual experience of space in everyday life. (Purcell, M. 2002 p.102)

In this chapter, the three different sections of space are utilized to help explain the phenomenon of chatarreros in Catalonia. In the first section, the physical aspects of perceived space are analyzed with a focus on intersecting points between the formal and informal waste management systems, followed by a discussion on the circuit of the chatarreros and their territorial determination based on physical space. In the second section, the mental constructions of space (conceived) are observed through analyzing the material flows through the urban core, and how the chatarrero are conceived by the formal system. In the final section (lived space), everyday experiences and working conditions of the chatarrero are examined, including kilometers they are walking, hours they are working, materials they are collecting, and the risk factors they are exposed to. These working conditions of the informal recycling sector are an important aspect of their activity, and as stated in the theoretical and conceptual framework, a necessary dimension for understanding the informal recycling sector.

1. Perceived space: The physical space of man and material

The first section of this chapter is about perceived space: the tangible physical space that people encounter in their daily movements. This can include buildings, waste containers, shopping carts, other people, and urban transport routes. This chapter examines the perceived spaces where the formal and informal recycling sectors connect, specifically, where the material is collected, and where it is dropped off. As well, the physical circuit of the informal circuit is analyzed, along with the territorial determination of the various modes of transportation used by the IRS.

1.1 Perceived spaces where formal and informal connect

The work of the informal recycling sector, being an urban activity, occupies multiple perceived spaces of the city. On a basic level, the informal workers own bodies and the material they are recovering physically occupy space in the urban environment. Additionally, their mode of transportation, being shopping cart, bicycle, or van physically occupies public space, both on public roads and sidewalks used to transport materials during the daily circuit of the workers, and where these modes are stored when not in use. Finally, if their collected materials are not taken directly to the recuperadoras, the location where the informal workers store their materials also occupies public space.

Daily, the activity of informal recyclers and formal waste management systems operate in parallel circuits. They both take place at the same time, providing a similar service to society. Though for the most part, the two systems operate independently of each other, the physical space they work in overlaps in two spaces: where they collect materials, which includes the containers, the deixalleries, and commercial door to door recovery, and where they sell their materials, which are the various locations of the recuperadoras.

1.1.1 Collection points: Containers and deixalleries

The first place where the relationship between the formal collection system and the activities of informal recyclers physically materializes, is the space occupied by the containers in the urban fabric. As mentioned in chapter one, the different municipalities in Catalonian either use surface containers (picture 8.1 below), a door to door system, buried containers (picture 8.2), or pneumatic systems (picture 8.3). The buried containers and pneumatic containers physically make it impossible for informal collectors to access the material, either by dropping it below ground, or by compression, sending the materials to an inaccessible location.

Picture 8.1: 5 Fraction model in Barcelona

Source: (Rendon – Barcelona – Sept. 19, 2018)

Picture 8.2: Buried containers in Figueres

Source: (Rendon – Figueres - Jan. 20, 2019)

Picture 8.3: Pneumatic containers in Barcelona

Source: (Rendon – Barcelona – Jan. 21, 2019)

The surface containers in picture 8.1, exemplified by the 5-fraction model, provide the best accessible space for the informal system to collect materials.

The municipal employees interviewed for this investigation acknowledge that the surface containers generate the right conditions within the urban space that are favorable to the activities of the informal recyclers. They also perceive that the bad waste practices of citizens (who, for example, do not use the correct containers, or leave material outside of the container) makes these spaces more conducive to the emergence of informal activities.

The second collection point where the relationship between the collection systems and the activities of informal recyclers physically materializes are at the deixalleries. The deixalleries operate similarly to the surface containers as they are a physical box filled with material that can be accessed. As can be seen in picture 8.4, concerning accessibility, a deixalleria can be perceived as a large surface container.

Picture 8.4 South deixalleria in Granollers

Source: (Rendon - April 29, 2018**)**

However, the big difference between the surface containers and the deixalleries is the conflicts that have been created around the deixalleries. This will be further discussed in section 2 of this chapter regarding access to materials.

A final perceived space where the formal and informal recycling sectors overlap is through the commercial porta-a-porta (door-to-door) program, where private businesses collect cardboard, which is then either collected by the city or the chatarreros. There is also a curbside porta-a-porta program for individual residences, however, it is mainly used in small towns throughout Catalonia, and is not accessed much by the chatarreros. As a municipal employee in Girona states,

> I don't think the door to door facilitates this kind of thing (informal recyclers). It is much easier (for them) to access a container. (Municipal staff #9, City of Girona)

Nevertheless, in the case study in Granollers, it was observed that the chatarreros did in fact collect cardboard from the commercial porta-a-porta businesses. More of this specific area of collection will be discussed in the chapter 10 concerning private ownership.

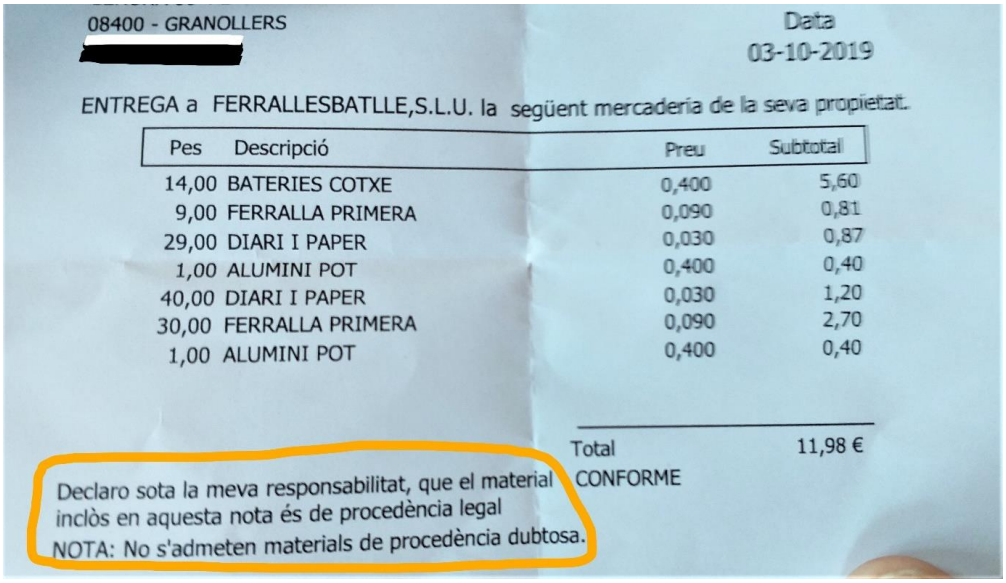
1.1.2 Drop off points: Recuperadoras

The final physical place where the formal and informal recycling system connect are at the recuperadoras, where both the formal and informal workers sell their materials. When asked whether there were recuperadoras in the town of L'Hospitalet, a municipal employee there said that,

> Yes, in Hospitalet there are two large industrial zones, before these types of centers (recuperadoras) were allowed to be within the urban zone, nowadays they can only be in industrial areas. There are not many, there are three or four that should be in the city, and they are great, and they are dedicated to collecting metals, some kind of plastic, cardboard, and paper. People who take it and sell it, and these people who go there to sell it, who are container hunters, the City Council has never intervened, allows it, and already consents. They are waste recuperators, companies are legal companies, discharged, pay their taxes. That's why we have them under control, where they are, what surface they have, what they do, and the business they have is not illegal, but well, it's also true that what they buy has often come out of a container. (Municipal staff #2, City of L'Hospitalet)

The last sentence of this quotation is very interesting, as it demonstrates that some of the recuperadoras, even ones that the city itself sells materials to is also buying materials from the chatarreros themselves. No doubt the city employees see the informal recyclers at some of these spots and vice versa. Whether they have much dialogue amongst each other is unknown, but it is a shared space that both sides occupy. As well, it is interesting to note that a warning is written on the receipts that the middle-men give to the waste pickers, addressed to derive the responsibilities of possible illegalities towards the waste pickers themselves. It says: "I declare under my responsibility that the material included in this note is of legal origin. Note: materials of dubious origin are not allowed" (picture 8.5). In this way, the recovery companies become legally exempt from responsibilities regarding the origin of the materials they buy, while the waste pickers assume all of them. One more example of the asymmetries that shape their mutual relationships.

Picture 8.5: Sample of receipt from the middle-men to the informal recyclers



08400 - GRANOLLERS
[redacted]

Data
03-10-2019

ENTREGA a FERRALLESBATLLE,S.L.U. la següent mercaderia de la seva propietat.

Pes	Descripció	Preu	Subtotal
14,00	BATERIES COTXE	0,400	5,60
9,00	FERRALLA PRIMERA	0,090	0,81
29,00	DIARI I PAPER	0,030	0,87
1,00	ALUMINI POT	0,400	0,40
40,00	DIARI I PAPER	0,030	1,20
30,00	FERRALLA PRIMERA	0,090	2,70
1,00	ALUMINI POT	0,400	0,40

Total 11,98 €

CONFORME

Declaro sota la meva responsabilitat, que el material inclòs en aquesta nota és de procedència legal
NOTA: No s'admeten materials de procedència dubtosa.

Source: (Rendon - October 4, 2019)

1.2 Circuit of the chatarreros of Granollers

One way to determine the physical space that the informal workers, the materials that they collect and sell, and their mode of transportation occupy is to understand their everyday circuit. In the case study for this investigation, which was carried out with the chatarreros of Granollers, a weekly questionnaire was used to determine the different parts of the city that the chatarreros traveled. Through the investigation, it was determined that the chatarreros of Granollers work through-out the city of Granollers, but occupy a much larger area. The physical space of work they occupy is based on two things, where they pick up the material they are collecting, and where they drop it off. When I asked the chatarreros if they have regular places to collect materials, half of the participants said yes and half of the participants said no. Of those that said yes, the regular places were specific containers in town and specific businesses that they either stop by regularly, or where the business owner calls them to come collect the material that they have saved for them. The remainder of the chatarreros pick-up paper/cardboard in any of the

containers found through-out the city, with an emphasis on the ones that are closest to one of the four drop-off locations. This is because the ability to do their work is based on having a market physically close enough in order to sell their product. For the chatarreros of Granollers, there are four drop-off points where the waste pickers sell their paper/cardboard (and metal), they are: Ferralles Batlle, Llorens, El Roche and Recuprieto. However, for the people who participated in the eight-week study, only the first three locations (Ferralles Batlle, Llorens, and El Roche) were used.

Picture 8.6: Ferralles Batlle (Carrer Tarragona, 23, 08402)

Source: (Rendon – April 9, 2018)

Picture 8.7: Llorens (Carrer de Lluís Companys, 55, 08401)

Source: (Rendon – June 8, 2018)

Picture 8.8: El Roche (Carrer Santa Madrona, 4, 08420)

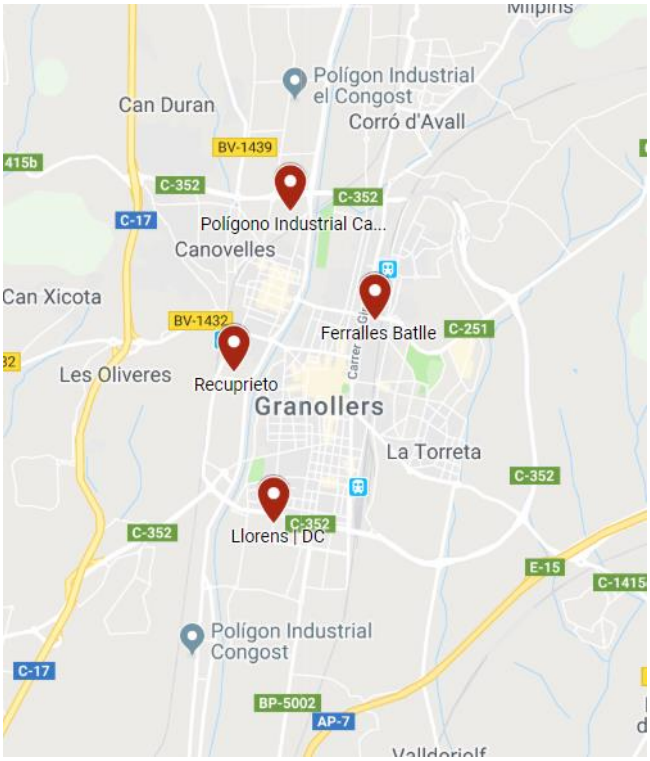
Source: (Googlemaps – October 23, 2019)

Picture 8.9: Recuprieto (Carrer de Mataró, 48, 08403)

Source: (Rendon – June 8, 2018)

Pictures 8.6 – 8.9 highlight the locations of the four drop-off locations in Granollers used by the chatarrero for paper/cardboard and metal drop-off. When placed on a map, a spatial representation is created which shows where the recuperadoras of Granollers are located.

Map 8.1: 4 drop-off locations in Granollers



Source: (Rendon – Author's own creation using Googlemaps)

As can be seen by Map 8.1, the four different recuperadoras surround the downtown of the city, allowing waste pickers to move through-out the urban core. Knowing the physical spaces of the locations determine collection routes, distance to and from each individual recuperadora, and allows an individual to calculate time/cost benefits based on those calculations.

It is also understood that the chatarreros that participated in the case study routinely walk the same streets, and the same circuits each day. Each one has preferred routes, usually originating from their place of residence. However, just because one chatarrero is working a routine, it does not exclude other recyclers from also working those same routes. This is because of an instability of resources in the containers, and therefore if the first chatarrero does not find anything, it is still possible for the next chatarrero to find something, as seen from this exchange.

> #1: Yes, every week more or less the same.
> Q: And could there be someone else who goes through the same places you go through?

> #1: Yes, although not normally... Every person has his luck. I can come in and get lucky and I can win. And you can come in and not win. Or the other way around. Luck is like that. Sometimes there are people who don't give to people [like us], but if you leave it next to the garbage, the first one who finds it, it's yours. And there are other people who, when he has something, he keeps it for you and gives it to you. (Interviewee #1, 2019)

Collecting cardboard and metal is a dynamic process that depends to some extent on chance, unless somebody is storing materials for the chatarreros. The people storing materials for them are merchants, workshops, construction sites, etc., or as one chatarrero said, "all kinds of good people" (Interviewee #1, 2019). These are people with whom the chatarreros have established a previous link, which is usually consolidated overtime. For example, interviewee #4 has several companies and people who keep materials (mostly metal) for him, and every 15 days or so he goes to pick it up. Interviewee #6 said there are older people who ask him from time to time to help them take care of their gardens. Interviewee #7 said there is a company that keeps cardboard and metals for him, and interviewee #8 said that several companies (mainly builders) keep metal for him. These same companies sometimes call interviewee #8 to let him know they have metal for him to pick up, but usually it is he who stops by periodically to see if they have anything stored. If the chatarrero is unable to collect it, then the companies leave it on the street for another chatarrero to pick it up.

> There are some people who call me to give it (materials) to me. They keep it for me. But if I've been out and I haven't been able to go, then they leave it on the street and someone else comes by and takes it away. This week I would have picked something up, but it wasn't there and others have taken it. (Interview #8, 2019)

For informal recyclers who have recently started this activity, almost nobody saves them materials since they do not yet have the contacts or have established the necessary connections.

> Q: Is there a store or company that stores material for you?
> #3: No, no one. If I'm lucky, I see something on the street, well, but if not...
> Q: But there are people who do keep them? No?
> #3: Yes, but it's people who have been here longer and have more contacts. I still do not. People who have been here for more years do. (Interview #3, 2019)

These personal connections are imperative for chatarreros to establish, in order for them to survive. Although the chatarreros do not have legal citizenship papers, they are members of the community, known to the shopkeepers, police, and formal recyclers, and because of these connections are a part of the community.

1.3 Territorial determination of modes of transportation

The territorial characteristics of the municipality can influence the way in which the informal recycling activities are carried out and help determine which mode of transportation is used. All the 12 municipalities analyzed had the presence of informal recyclers, although, according to the perceptions of the technicians interviewed, there are differences between some areas of the city and others. As a municipal employee in Girona states, “the municipality cannot do the same system throughout the municipality, because it has very different sectors and very different urban characteristics (Municipal staff #9, City of Girona). For instance, in areas with higher demographic densities there are more sub-Saharan migrants or Maghreb that collect materials from the streets using a shopping cart, a situation similar to that of the case study. While in smaller cities and rural areas, motorized vehicles are much more numerous. As well, if it is a territory with several nearby towns, motorized vehicles are a better mode of transportation.

Additionally, the spatial proximity of recuperadoras facilitates certain modes of transportation more than others. If it is a municipality with recovery companies located near the city center, supermarket carts or bicycles can be the right tool. As described by this municipal employee in the city of Rubí,

> It is also true that metal, when on the street, is removed by them [informal recyclers]. And that this metal extraction that appears in the city has a destination point locally. It is logical, if I end up loading it in a cart, which I found "accidentally" at Aldi's door, it is logical to take it on foot to the recovery platform that exists in this environment. (Municipal staff #5, City of Rubí)

These local recovery companies (recuperadoras) play a key role, to the point that the activity of informal recyclers would not be possible without the availability of these companies. However, although the informal recyclers are dependent on the recuperadoras, the recuperadoras are not dependent on them, which creates an unequal power structure, and allows a greater opportunity for discrimination to occur.

It should be noted that if there are no recovery companies in the municipality, it does not necessarily imply that there are no informal recyclers. As has already been said, the existence of these informal activities also depends on the unique characteristics of the city. For example, in Girona there are no urban spaces for recuperadoras, so they are located in neighbouring municipalities. Consequently, it is possible that this activity is adapted to this situation, and the informal recyclers have storage places, or the process of transportation is carried out with motorized vehicles. As stated by this municipal employee in Besalú, when asked if there are recuperadoras in his town,

> No, but they'll sell it elsewhere. We do not have companies here that are engaged in managing waste, we have them outside the region, but I imagine they know where to go. (Municipal staff #6, City of Besalú)

Therefore, it seems reasonable to believe that the existence of small-scale and non-motorized informal recyclers would be related to the presence of recovery companies near the urban center, and if there are not any, motorized vehicles would be more likely.

2. Conceived space: Conceptual space regarding the informal recycling sector

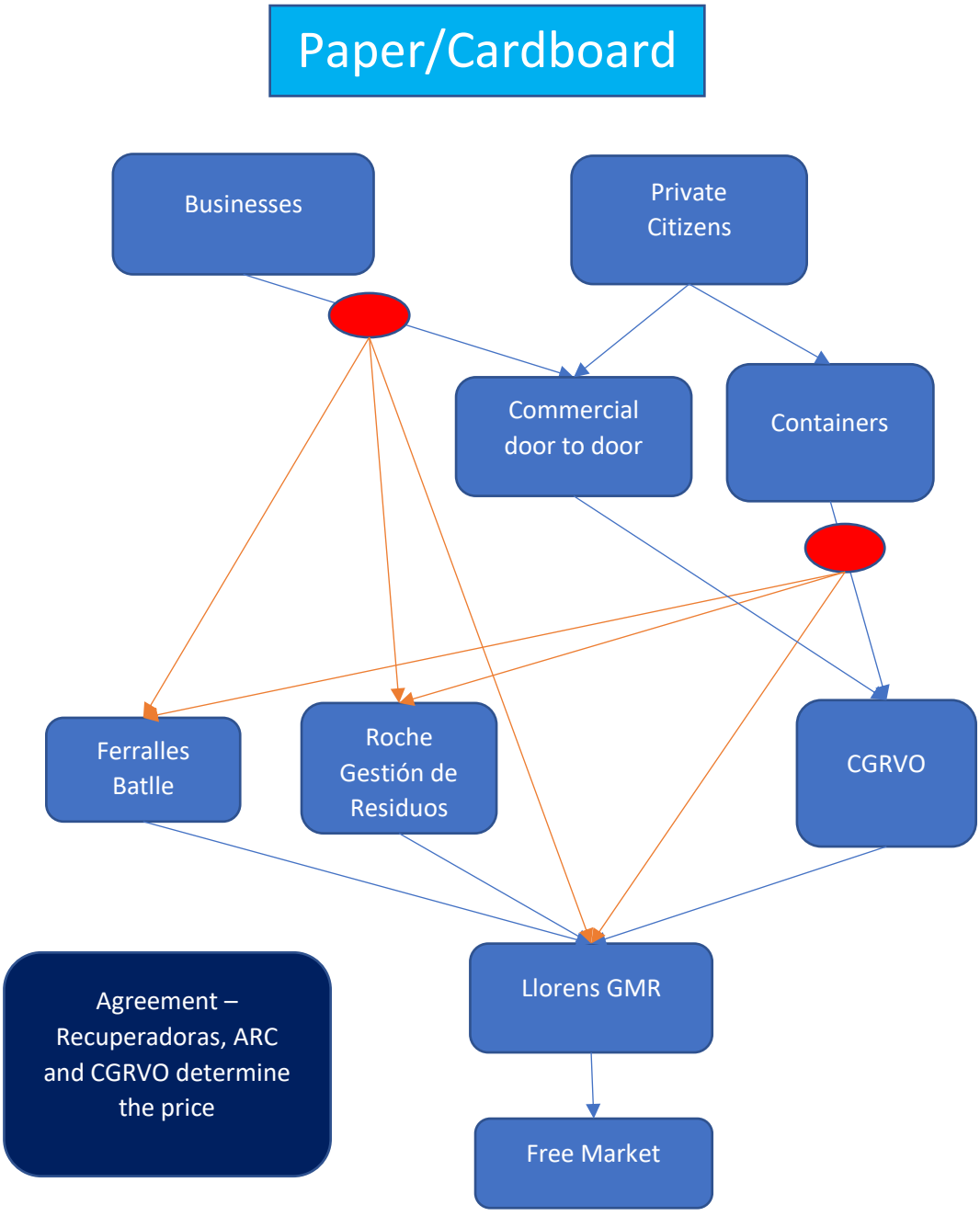
The second category Lefebvre used for identifying space is his concept of conceived space. Conceived spaced is the conceptualized spaces that forms images, theories, power structures, maps, and abstract space constructs. The conceived space that dominates this investigation is the

conceptual construction regarding the circuit of waste itself, and the informal recycling sector's perceived participation, or lack of participation in meeting the environmental goals and objectives of the formal recycling sector. It is understood that though the informal recycling sector is clearly participating in recycling objects out of the waste stream, their presence is seen by some as a social problem to be dealt with by the municipalities and the powers that they hold.

2.1 Material flows throughout the urban core

Through Lefebvre's conception, conceived space consists of the conceptual construction of space. For both the waste managers as well as the chatarreros this is the mental flow of waste within the city. Anticipating where it is coming in, where is the final destination, and all of the stops in between. In particular to this investigation is the intervention by the chatarreros. Figure 8.1 demonstrates the interruption of paper/cardboard flow by the chatarreros in Granollers.

Figure 8.1: Interruption of paper/cardboard flow by chatarreros of Granollers



Source: (Rendon – Author's creation based on participatory observation)

Figure 8.1 demonstrates the circuit of paper/cardboard in Granollers, and where that flow is interrupted by the chatarreros. The blue arrows show the formal flow of paper/cardboard that

takes place in Granollers. The red dots show the two points where waste pickers affect the flow of paper/cardboard. The red dot on the left is paper/cardboard collected directly from businesses, and therefore never going into the containers managed by the city, and the red dot on the right shows the paper/cardboard collected from, in or near the curbside containers. The red arrows demonstrate the new flow that takes place once the waste pickers interrupt the planned flow of materials. The two locations that do not receive as much paper/cardboard due to the chatarreros existence, are the commercial pick-ups for businesses and the CGRVO. Instead, the paper/cardboard go to one of the three recuperadora drop off spots (Batlle, Roche or Llorens). Regardless of how it gets there, the paper/cardboard of Granollers ends up with the Llorens company who then sells it on the free market. This figure shows us that the chatarreros access the paper/cardboard at two primary locations, either from the businesses themselves, or directly from the containers, which is the same place that the formal recycling sector also access it. Regardless of whether the formal or informal recycling sector collects the paper, they both take them to the same place (Clapes, May 25), and they will ultimately be processed the same way. Deixalleries are a separate location of materials, not included in this diagram, but which are accessed by some of the informal recycling sector, and discussed later in this chapter and in chapter 10.

Understanding how the material flows, in this case paper/cardboard, provides a mental map for both the formal and informal recycling sector. For the former recycling sector, it provides them data that help allocate resources. This mental understanding helps determine routes used for collection, frequency of collection, and to determine which type of waste segregation model and collection model to use. For the informal recycling sector, having a conceptually conceived flow of materials helps determine where the best access points are for selecting, separating, transporting, cleaning, and selling their materials. It should be noted that

the formal recycling sector view their territory as defined by political boundaries, and work within those boundaries, whereas the informal recycling sector's territory can span multiple municipal boundaries.

2.2 Conceiving the informal recycling sector as a social problem

Most of the municipalities interviewed have attempted to reduce or manage the problems associated with the activity of informal recyclers, but it is observed that the measures promoted have little to do with waste management, and instead, have more prominence in the areas of social services and public order. Surprisingly, the work of informal recyclers is rarely conceptualized as part of the waste management system. Rather, some of the measures that have been applied go in the opposite direction of recycling goals and objectives. For example, it is observed that some councils have established agreements for future bidding for the waste management service, consistent with the implementation of deterrent mechanisms that hinder the activities of informal recyclers, such as changes in the collection systems, the implementation of "intelligent" containers which are more hermetically sealed (more on this in Chapter 9), or increasing security measures at the deixalleries.

In general, municipal waste management staff tend not to recognize informal recyclers as actors who are part of the waste management system, but instead see them as a social problem that has more to do with street cleanliness, immigration, and social service operations. Aside from mentioning the environmental benefits of the work, though some employees recognize that, or concern about their welfare, most of the comments about the informal workers were based on negative public perceptions of their activities. In particular, there were four activities that tended to drive political engagement with the informal recycling sector; 1) waste scattered on the ground

after a container was rummaged through or a manufactured good was disassembled 2) shopping carts left out in public, in the right of way, or in a location that is perceived as dangerous, 3) recovered material stored in residential houses, and 4) public uncomfortableness near the deixalleries.

2.2.1 Waste dispersed as a consequence of the selection of material

Prior to the start of the case study, our team met with the Mayor of Granollers to get his approval for the project, and to ensure access to the municipal employees. The Mayor told us that he cares about the welfare of the chatarreros, but is also interested in keeping the streets clean (Michael personal journal, May 21, 2018). This second interest was the main factor for either municipal or police involvement with the chatarreros, since one of the problems that most concerns the municipal employees is the dispersion of waste in urban space as a result of the selection of materials carried out by recyclers. As mentioned by this municipal employee in the city of Girona,

> There is a social problem with those who rummage…of those who dig around in the containers, because they leave things sprawled all over, this is the problem…if they were to take things out, and leave things in good conditions, nothing would happen. What happens is that, one, the city is complaining because they are breaking containers, because to see (what's inside) they cut the rubber bands and get things; and two, they take things out, they crumble them right there on the floor and they don't pick anything up and then they leave it to you, all unkept, so this is really frowned upon. (Municipal staff #9, City of Girona)

This material that is left in the street generates a very visible impact in public space, especially in the case of the dismantling of appliances, which greatly annoys the municipalities. Even municipal employees and citizens who are sympathetic to the work of the informal recycling sector frown upon this practice.

In particular, the abandonment of electronic waste appliances (Residuos de Aparatos Eléctricos y Electrónicos or RAEEs) and bulky waste on the streets is one of the most important concerns for the waste management system, since it leads to a visually unpleasant landscape, and

tends to generate a recurrent cost of time and money for the formal system to clean it up. As mentioned by the municipal employee in the city of Salt,

> we have had more problems with the abandonment of bulky materials in the street than of thefts of material. For this, we have an extra cost, because we have a lot of mobility which generates a lot of furniture on the street, along with some illegal activity that leaves a tire, or other elements that generate an extra cost. This is more important than thefts of cardboard, or metal. (Municipal staff #4, City of Salt)

Another example from the city of Salt,

> on the side of the recuperadora they dismantle for example a washing machine. And the materials that are no value, they leave them outside, and that is an extra cost for the municipal collection of waste, who are constantly in the community to collect this waste. (Municipal staff #4, City of Salt)

A similar sentiment was shared in the city of L'Hospitalet,

> It (abandoning valueless materials on the street) generated a lot of discontent. There was a gentleman who had found a fridge and in the middle of the street, began to break it to pieces to separate the metal from the rest. The neighbor came down and, well, it was not right because the man occupied public roads to separate what he wanted to take and what he wanted to leave. And what he didn't carry or couldn't sell, he threw it everywhere, of course, the neighbors were upset. (Municipal staff #2, City of L'Hospitalet)

This same scenario was mentioned in the city of Besalú, particularly the perceived views of citizens.

> The neighbors start to be bothered because these people leave the remains of materials on the streets. (Municipal staff #6, City of Besalú)

These comments demonstrate that the visual image of the city is paramount to the municipal employees of the city, and whether the material gets recycled or not is of secondary importance to the image of a clean, orderly community. It is also noted that the phenomenon of waste being left in the streets appears to be more noticeable in the municipalities with a high mobility of people, corresponding to the largest cities and metropolitan areas. In smaller municipalities it does not appear to be perceived as such a serious problem. Regardless of where the abandonment takes place, what is clear is that municipal employees perceive a direct relationship between the

dismantling of these devices and the visibly problematic presence of informal recyclers in the conceptual space of the city.

2.2.2 Eliminating carts from the streets

Aside from RAEEs and other materials left scattered on the streets and sidewalks, the other object that creates an eyesore for the municipal workers of Catalonia is the volume and location of shopping carts that accumulate around the urban core. Bicycles and vans do not have this problem, as they blend in more with the urban environment, but shopping carts outside of shopping centers are much more visibly noticeable, especially since they have been taken from the shopping centers, and in the conceived space of municipal employees and some residents, is seen in a negative light. In the case study, I talked to Carme Clapés who has spent most of her life near the city of Granollers. She states that, "in the background (the subconscious mind), these people who are on the street (chatarreros), we do not like to see them. They are there, but we don't want to see them." (Clapés, 2018, Nov. 30). Though Clapés herself is a strong supporter of the chatarreros, she believes that it is the perception of the chatarreros, and specifically their shopping carts that are the main thing that bothers the citizens of Granollers.

In interviews with municipal employees, an argument which was mentioned a few times, is that shopping carts, depending on where they are located, can become a fire hazard. As Clapes (2018) notes, "According to the information we have, mainly from street educators, there are allegations, because they [the chatarreros] leave the cart below the balcony, and people say that it will cause a fire and such…And the City Council must also respond to this" (Clapes, 2018, Oct. 26). Carts being a nuisance was also mentioned by a municipal employee in the city of Rubí, stating,

> yes, as a result of neighborhood complaints, the police have had to act. They now have to deal with that shopping cart that is attached to the lamppost with a chain and a padlock. (Municipal staff #5, City of Rubí)

In fact, the original outreach to chatarreros in the case study (Granollers), was not for welfare concerns of the chatarrero, nor to increase the volume of recyclables, instead, "the campaign was basically to eliminate the supermarket carts from the street, and to create zones where they could put them" (Cruz, 2018).

As mentioned in chapter 2, the city of Granollers has had three campaigns in regard to the chatarreros, and though there has been some variation in the specifics of each campaign, the main thrust of the campaigns was a list of rules created not to remove the chatarrero, but to keep Granollers visually pleasing by addressing the shopping carts. The opening statement of the 2013 report is, "On June 11, 2013 we start the information campaign of the public space and civic-mindedness in relation to the people that made the collection of recyclable material on public roads throughout the city of Granollers" (City of Granollers, 2013), explicitly mentioning that it is the public roads (and the shopping carts occupying them) which was the impetus for the campaign. Though other information was gathered in the 2013 campaign (such as profiles of the interviewees and basic collection info), the main focus was the rules provided by the city regarding disassembling materials in public and the proper use of shopping carts. This campaign was called "the civility campaign," and contained a list of requirements for the chatarreros.

- Do not park carts on the sidewalks
- Do not tie the carts to the street furniture
- Do not park the carts in the space for the parking of vehicles
- Do not disassemble or manipulate items in the middle of the public
- Collect the items you don't want and return them to put in the corresponding container
- Do not circulate on the road
- Do not go down the sidewalk to spaces that are not adapted (City of Granollers, 2013)

Even though additional demands were made, such as not disassembling items and returning uncollected parts to the prescribed bin, as Cruz states, “the campaign was basically to eliminate the supermarket carts from the street, and to create zones where they could put them” (Cruz, 2018).

The next year, in 2014, there was an additional campaign that had more of an interest in who the chatarrero are, and what they are doing, however, the main purpose was a follow-up of the 2013 to make sure that the chatarreros were following the new rules. Here is a sign used in the 2014 campaign, again demonstrating that shopping carts on public roads was the main focus of the campaign.

Picture 8.10: Prohibido

Source: (City of Granollers, 2014)

In 2017, the final campaign of the city of Granollers was conducted. This campaign made more of an effort to find out the ethnographic make-up of the chatarreros, the social and physical welfare of the chatarreros, including access to health care, and their ability or inability to speak Castellano and Catalan. An interesting observation of these campaigns is that although they

restrict where disassembling can take place, and where carts can be placed, they don't outright restrict the process from happening, which in some ways condones the activity. As I noticed in my field notes, "the 3 campaigns 'legalize' or at least 'normalize' carts in common areas" (Rendon, 2018, personal journal April 9, 2018). Regardless of this observation, the main focus of the 2017 campaign was an update on the civility campaign of 2013, thus demonstrating the perception of cleanliness was still the driving force for government intervention.

2.2.3 Accumulating materials in residential areas

The third issue that drives political engagement between the municipal staff and the informal recycling sector is the argument that informal workers are using residential housing to store materials that they have collected. When this activity takes place, it creates an unsafe environment for the chatarreros as well as the neighbors, since it is bringing in materials that could be hazardous (as is the case with some e-waste), and depending on the volume, creating a potential fire hazard. The two cities where this was mentioned was in the city of Girona, and the city of L'Hospitalet. In the prior, it was not perceived as much of a problem, and in the latter, the activity has been removed through regulation. So though not a current problem, this practice has been an issue of conflict between the informal recycling sector and local governments.

When asked about whether there is any residential housing in Girona that is used to store materials, the municipal employee stated,

> "I have identified only one, we have sent the police several times and have not been able to find much, but yes we have complaints from neighbors saying there is always at least one fridge there. (Municipal staff #9, City of Girona)

Evidence of this practice was found in this exchange with a municipal employee in the city of L'Hospitalet,

> Question: Has there been any study on chatarreros?

> Answer: I do not know, the chatarreros were taken out of urban areas, say housing, because of the conflict that they generated, that they had with the neighbors. It turns out that those centers were visited daily because many people who were going to sell waste. It sometimes generated discomfort, they occupied the public road a lot, so the rule said, ok, I can't ban it (the activity of informal recycling) in the city but I can limit it to be done within the industrial zones, and that's the current norm in Hospitalet. (Municipal staff #2, City of L'Hospitalet)
>
> Question: And there have been urban conflicts around the chatarreros?
>
> Answer: They have taken them [materials] out of the urban scene, they are forbidden by regulations. Urban scene is understood where there are homes. They have to go to areas where there are only industries, industrial estates, because it generated a lot of discontent (Municipal staff #2, City of L'Hospitalet)

As can be seen from this quotation, the city's response was to ban any waste collection from informal recyclers within the city limit, and restrict this activity to industrial areas. This regulation somewhat legitimizes the work of the chatarreros, since it does not ban it outright, but only in certain areas, thereby de facto permitting it. Although this regulation somewhat legitimizes the work of the chatarrero in one section of one city, this type of regulation is not found in the greater Catalonia region.

2.2.4 Public uncomfortableness near the deixalleries

The final activity that drives political engagement with the informal recycling sector is the relationship that the informal recycling sector has with the "green points," or deixalleries. The deixalleries are located in cities throughout Catalonia and are a drop-off point for recycled materials that are not collected in the normal waste segregation models. This includes materials such as appliances, wood, cooking oil, batteries, and metals. An example from Granollers is shown in picture 8.11.

Picture 8.11 South deixalleria in Granollers

Source: (Rendon - April 29, 2018**)**

Many of the materials (though not all) found in the deixalleries contain materials that the informal recycling sector collects on the streets and from select business owners, mainly various types of metals found in appliances, furniture, wiring, and retired kitchen equipment. Some members of the informal recycling sector access these materials either by waiting outside of the deixalleries and asking residents to give them the material instead of gifting it to the municipality, or by hopping the fence (usually at night) to access the material. I mention "some" members of the informal recycling sector, as both of these acts: waiting outside the deixalleries to talk to the municipal citizens, and the act of going inside the deixalleries to remove materials is in general seen in a negative light. Most informal recyclers, especially the chatarreros using shopping carts, do not claim to participate in this activity. The act of going inside the deixalleries (to gain access to the resources), is discussed in more detail in chapter 9.

Conflicts at the deixalleries between the formal and informal recycling sectors were mentioned by municipal employees in many cities, and seems to be a common occurrence

through-out Catalonia. For example, here is a comment from a municipal employer with the city of Olot,

> In our region, we have mobile deixalleries, and now these deixalleries are associated with these people (informal recyclers)… because when we open up the deixalleries, after 10 minutes, when people arrive with their car, they (informal recyclers) stand behind the mobile deixalleria waiting for a user to bring a washing machine, or bring a laundry iron, or bring any waste of a certain value. This we are finding, or in the deixalleria de Olot, which has a fixed place and here we do have more episodes of robbery, and especially of appliances. Not of all the appliances, but engines, copper, and these types of material that they make a profit from by selling. (Municipal staff #12, City of Olot)

Here is another example from the city of Sant Sadurní d'Anoia,

> Here we have another problem, and that is the deixalleria. Next to the containers, where people are coming and rummaging are placed a couple of Maghrebs, at the entrance of the deixalleria, outside. When they see someone coming, a citizen who brings in their vehicle with something of value, they [Maghrebs] stop them and ask them if they can have it, instead of taking it to the deixalleria…the subject of the refrigerators, the washers, what they do is they rip this waste, dismantle it, right there outside the deixalleria, dismantle it, keep what's valuable and the rest, they put back inside the deixalleries, or throw it anywhere (Municipal staff #8, City of Sant Sadurní d'Anoia)

Concerns exist at the deixalleries about waste being thrown around and unsightly, as well as financial concerns, where municipal employees feel that the informal workers are cutting into their profits (this will be discussed in chapter 10). However, according to the municipal employees, the biggest concern at the deixalleries is the uncomfortableness the citizens feel having the informal recyclers present.

> We've had complaints that people have felt intimidated, when you go to the deixalleria to take trash and they stop you before we enter the deixalleria, that's what we've had complaints about. (Municipal staff #8, City of Sant Sadurní d'Anoia)

This same sentiment by a municipal employee in the city of Olot,

> We meet with older people, because they involuntarily view these types of people as harassment. That is to say, my grandmother goes to the deixalleria to throw away a frying pan and these people who are dedicated to extracting materials come down from their car and tell my grandmother, relax lady I'll get it, but my grandmother in this situation feels harassed. This makes good people sometimes go to these mobile deixalleries with a little bit of fear. (Municipal staff #12, City of Olot)

Municipal staff have tried to remedy this situation by building larger fences around the permanent deixalleries, providing extra staffing at both the permanent and mobile deixalleries, or by contacting the police. The informal recyclers that use a shopping cart or a bike are not likely to participate in this sort of activity, however, due to the social imagination of citizens and some municipal employees, there is not a clear definition of the differences in informal recyclers, and therefore any type of informal recycler may be indiscriminately blamed for negatively affecting the deixalleries.

2.2.5 Government response: Police and the judicial system

As mentioned, most of the municipalities interviewed attempted to reduce or manage the problems associated with the activity of informal recyclers, but the measures that they take have little to do with the theme of waste management and, instead, have more prominence in the areas of social services and public order such as the local police. This occurs because city councils and municipal employees receive social pressure to address the most visible aspects of the presence of informal recyclers: the unpleasant sights in the streets such as scattered waste, shopping carts locked to fences, and people hanging-out near the deixalleries.

One of the attempts by the municipalities to respond was to address the informal recyclers through the judicial system. The judicial system, including local police, has difficulties in generating and maintaining punitive strategies because removing materials and objects from the waste management system is not legally considered a serious offense. Therefore, the judicial approaches do not entail specific sanctions. This reality is exemplified by this statement from a municipal employee from the city of Mataró.

> "We had met with the police to see what we could do. The thing is that when you catch a person stealing or taking the material from the container, in the end, the penalty, when it goes to the judge, the value of this is so insignificant that even if you can catch them in action, nothing ends up happening." (Municipal staff #, City of Mataró)

Because of the limited repercussions that exist for informal recyclers, the police are not likely to get involved, and some police view this work as a positive option for those without citizenship. As mentioned by a municipal employee in the City of Sant Sadurní d'Anoia,

> the police have another view of this. If they [informal recyclers] are there [searching in the containers], then they're not committing crime somewhere else, that is, if they're rummaging through the deixalleria, they're not entering a house taking a fridge or a TV. All this is how it moves to reality, right now there's no control (Municipal staff #8, City of Sant Sadurní d'Anoia)

Put another way, "there is a certain police tolerance towards the chatarreros because the "lesser evil" is chosen, some urban disorder and normative transgressions are accepted against these populations being or going to 'crime'" (Porras, 2020, personal email).

Knowing that the police and judicial system have a limited capability, local governments are in a challenging spot. On the one hand, they are receiving public pressure to do something about the perceived bad actions of the informal workers, while on the other hand, they have limited options to curb the behavior of the informal recycling sector. As mentioned previously, the municipalities do not view the informal recyclers as a contributing part of the larger waste management system, but instead view them as a social problem. Ironically, since formal recyclers view the informal recyclers this way, the actions that formal recyclers have taken to deter informal recyclers from participating in waste management, such as making materials harder to access, or confining the actions of chatarreros to specific parts of the city, further distance the municipalities away from their environmental goals and objectives.

3. Lived space: Everyday experience moving in and out of space

Lefebvre's idea of lived space is the everyday life and activities of the main actors, in this case, the chatarreros. This space is an active space where social space is produced, and the practice of living is infused with the space that is inhabited. Or as stated by Purcell,

> Lived space is not just a passive stage on which social life unfolds, but represents a constituent element of social life. Therefore, social relations and lived space are inescapably hinged together in everyday life. (Purcell, M. 2002, p.102)

This category of space is what makes up social life, art, culture, and memories, and is the exact opposite of theoretical perspectives of what the informal recyclers lives should or could be. This section looks at the primary data collected from the questionnaires in the case study to determine the following information; 1) amount of euro's the chatarreros make, 2) the distance the chatarrero travel in their daily routine, 3) the volumes of materials that they collect, and 4) the amount of hours worked and kilometers walked.

3.1 Collecting cardboard/metal and other work activities

From data collected from the case study, most of the chatarreros have been engaged in informal recycling since they arrived in the Granollers area, although some were previously working in other activities (interviewees #2 and #4), which they had to stop because they were unable to renew their citizenship papers. Some interviewees acknowledge that they did not want to work collecting cardboard and scrap metal, but that they had limited choices since they didn't have citizenship papers. This exchange with interviewee #3 exemplifies this point,

> #3: When I arrived, I didn't do this work. But one day I saw a person on the street picking up cardboard and I asked him. What are you doing with this? And the person explained to me that he was looking for these things to sell. And I asked him how I could do it, because he had no papers or anything. And he told me we could do it together that day and that's how I'd learn. And we did it together, he taught me how to look, what things to pick up, which sites, where and how to sell it, etc.
> Q: And that person who taught you is still doing this work?
> #3: No, that person has papers. In 2015 he had been unemployed and that's why he was

collecting papers. But today he doesn't pick up because he's got a job again.

Validating the statements of the social workers, all the chatarreros that were interviewed mentioned that if they had citizenship papers, they would not be collecting cardboard and metal, but working a different job.

Although they don't have citizenship papers, the chatarreros are able to combine the work of collecting cardboard/metal while searching for other informal activities. From the point of view of the chatarrero, both types of tasks are part of the same temporary structuring. While pushing their shopping carts around the city, the chatarrero intentionally pass by people and businesses that they have a prior relationship with, in the hope that there are additional work opportunities. As interviewee #3 explains,

> #3: When I don't pick up cardboard, I walk. If I'm lucky someone says 'look, you could clean my house' or 'I need help for such a thing'... Then I do that.
> Q: But does it happen to you very often?
> #3: Yes, there are people I help and get paid for it. (Interviewee #3, 2019)

The other types of informal work available to the chatarreros can be classified into two groups: service work and agricultural work. Service work includes tasks such as cleaning houses, gardening, or painting. For this work, there is almost always a previous connection between the person offering work and the chatarrero. As interviewee #3 states, "sometimes there are people who call me to help them clean the house, the gardens, patios…they're older people who from time to time want me to help them. As they already know me…" (Interviewee #3, 2019). Most of this work is as an aid to older people, but there are also some chatarreros who provide help to freelance workers such as painters and plumbers.

> Q: What other job did you have last week?
> #7: With a plumber. Putting in tiles and helping him with his work. He's a self-employed worker who calls me sometimes. When he's got a lot of work, he wants me. But when it's over, then I return to cardboard. (Interviewee #7, 2019)

In general, chatarreros would prefer to engage in these tasks on a more regular basis, but cannot

because of their legal situation. It should be noted that these tasks are carried out in a territorial area that is somewhat wider that their waste collection circuit.

The other informal activity that many chatarreros undertake are tasks in the agricultural sector. However, these types of jobs are usually seasonal, occupying only a short period of time (usually in the summer), and require travel to more distant territories. As stated by interviewee #8,

> #8: No. Not this week, because I've been in Logroño picking grapes. I arrived two or three days ago.
> Q: How long has it been?
> #8: Fifteen days.
> Q: How did you get to go to Logroño?
> #8: Because I have friends there who want me when there is work.
> Q: Therefore, you combine cardboard collection with other jobs.
> #8: Yes. Because if there are other jobs that pay more, then I do them. I arrived this week from Logroño. I've collected some cardboard between yesterday and the day before yesterday. Very little, but I had to do something... (Interviewee #8, 2019)

Or this exchange which demonstrates the need for transportation,

> Q: Who do you live with?
> #6: I live with 5 people.
> Q: And you all collect metal?
> #6: The other people who live with me have bicycles, and they're going to look for work in the fields with the bicycle. Sometimes they do cardboard or metal collection, but they're usually going to work in the fields around here. I'm the only one who doesn't have a bike. (interviewee #6, 2019)

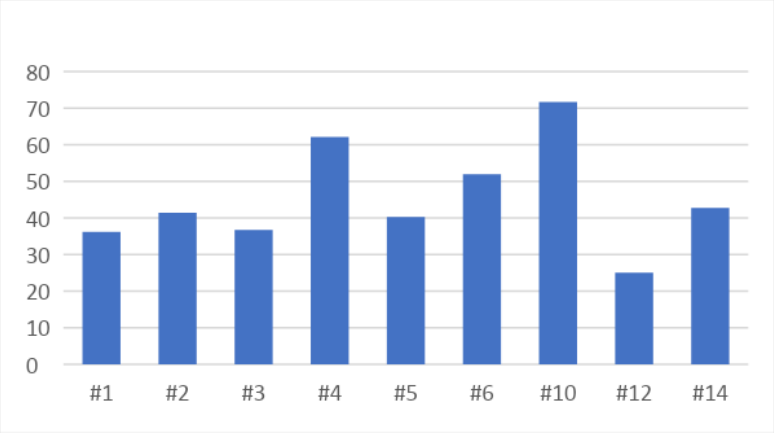
Other informal jobs exist for the chatarrero, and if given a choice, they would usually do those jobs first since they pay more, and have more dignity related to them. Collecting cardboard and metal is the last choice of work, but something for them to fall back on when no other informal work is available.

3.2 A day in the life – Euro's made and where it goes

As part of the case study, each week during the questionnaire, the chatarreros were asked how much money they made. The average amount per week during the observation period was 42.73

euros. If extrapolated, this averages to 2,455.96€ per year or 204.66€ per month. However, this number varied depending on the person.

Figure 8.2 – Euros per week per person



Source: (Rendon – Author's creation based on questionnaire)

From the nine people participating in the questionnaire, the most made per week was 150€ and the least amount was 15€. When asked what they did with their money, most of the chatarreros told me that after food, rent, gas, and electric, they send whatever they have left back to their wives and children in their country of origin. Though most continue to send money back to their families, none of them have had a chance to see them again since they arrived in Granollers, as their legal situation prevents it. For example, one participant (interviewee #6), has been in Spain for twelve years without visiting his family in Gambia, to which he sends money regularly. This limited amount of funds made by the chatarrero was confirmed by the social worker in Granollers who said that, "the majority of the chatarrero are not homeless, and the money they make is to pay or the basics, electricity, water, the basics" (Fernandez, 2018). In talking to other chatarreros, this limited amount of money and lifestyle are common, and therefore, the chatarreros generally have no savings, and are thus living day to day at a poverty level even though their work is making a positive contribution to society. As mentioned previously, an

important factor that was learned during the investigation is that the chatarreros had other jobs as well, and used the collection of cardboard or metals as a last resort. Therefore, the amount of money the chatarreros make constantly varies depending on what type of work they are able to find.

3.3 Distance traveled

In order to calculate the distance that the waste pickers travel, I needed a starting point to base the distance to and from. For the case study, I chose Ferralles Batlle (Carrer Tarragona, 23, 08402 Granollers) as the starting point because it is the most central of the recuperadoras, as well as the most utilized. From my analysis, Mollet is the farthest point that they collected from, and is roughly 13 kilometers from the starting point. I also added the frequency in which the town was mentioned to look at outliers in the data, and to determine if I wanted to include that specific town's monthly and annual data in my area of study. Table 9.1 shows the name of the town identified by the waste pickers, the distance from the starting point (Ferralles Batlle), the time it would take to get there, and the frequency in which it was determined. For example, though Mollet is the farthest distance noted in the study, it only came up 2 times, so is not a very consistent place of collection. The number of times it was mentioned is shown in the "frequency" column.

Table 8.1: Locations of collection

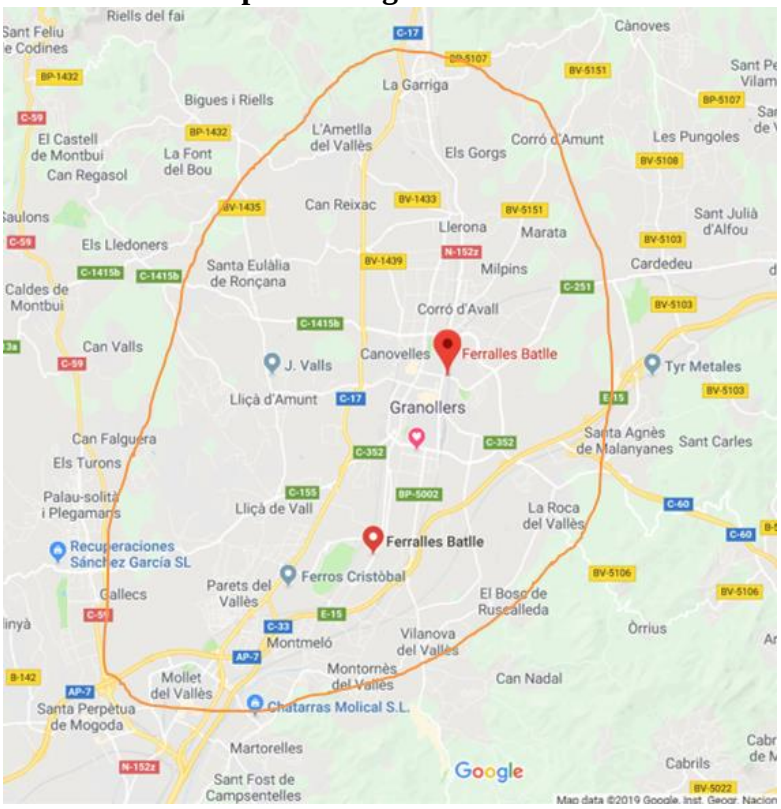
Name of the town	Distance	Time by foot	Frequency
Mollet	13km	2h 47 minutes	2
La Garriga	11,5km	2h 19 minutes	3
Lliçá de Vall	11,1km	2h 21 minutes	2

L'Ametlla del Vallés	8,4km	1h 40 minutes	2
La Roca del Valles	6,4km	1h 26 minutes	11
Lliçá d'Amunt	5,1km	1h 8 minutes	1
Franqueses del Valles	4,9km	57 minutes	43
Can Bassa	2,8km	35 minutes	18
Canovelles	2,7km	34 minutes	49
La Torreta	1,7km	22 minutes	7
Bellavista	1,2km	15 minutes	14
Granollers	0km	0 minutes	64

Source: (Rendon – Author's own creation using data from Googlemaps)

As seen in table 8.1, of the waste pickers that participated in the study, the majority of their time was spent in Granollers, Canovelles and Franqueses del Valles. Although there were waste pickers that were traveling up to 13 kilometers, it is very infrequent, with the majority being 4.9 km (or roughly one hour) away in a normal weekly collection. In order to have a visual sense of the area of study, map 8.2 was created to get a sense of space.

Map 8.2: Range of collection



Source: (Rendon – Author's own creation using Googlemaps)

From Garriga to Mollet de Vallés is 30 kilometers. This is not to suggest that waste pickers never work outside of this area, as it sometimes happens. In fact, some of the participants said that, although it is a minority, there are informal recyclers who travel to more distant municipalities, such as La Garriga, Mollet, and others, or even to Barcelona. Interviewee #3, for example, traveled once to Barcelona, but as it was not profitable, he has not returned.

> #3: I went once to Barcelona. I bought a train ticket back and forth, but I didn't find much. It's not worth it. It's better to stay around (Granollers).
> Q: And are there people who come from Barcelona to look for things here?
> #3: No. That doesn't happen. In any case there are some that from here go that way, but not the other way around.
> Q: But, therefore, there are some people here who go to Barcelona, right?
> #3: Yes, but not to look for cardboard. They're going to look for metal, because there's a company there that buys metal, just metal. (Interviewee #3, 2019)

Based on this discussion, it appears that the other way around does not happen, that is, there are no recyclers from other cities who come to Granollers to collect cardboard or metal. This data

supports the perception that the informal collection of waste is an urban activity, as although there is some travel outside of the city limits, the majority takes place inside of the urban core. It must be concluded here that chatarreros have a fairly detailed knowledge of the city. The chatarreros knowledge of the city supports the hypothesis found in the literature that considers waste picking as a way of empowerment and access to the city (Gutberlet et al., 2009; Rosa, 2018). From this point of view, waste picking can be conceived as a means of gaining access to the city and its resources, and a way of establishing roots. It is part of a process of integration in the urban economy, and a way of learning to live together (chatarreros and the other actors engaged with them). Building partnerships with residents and businesses for secured and regular access to materials is a significant social asset. Waste picking facilitates community interaction and community inclusion.

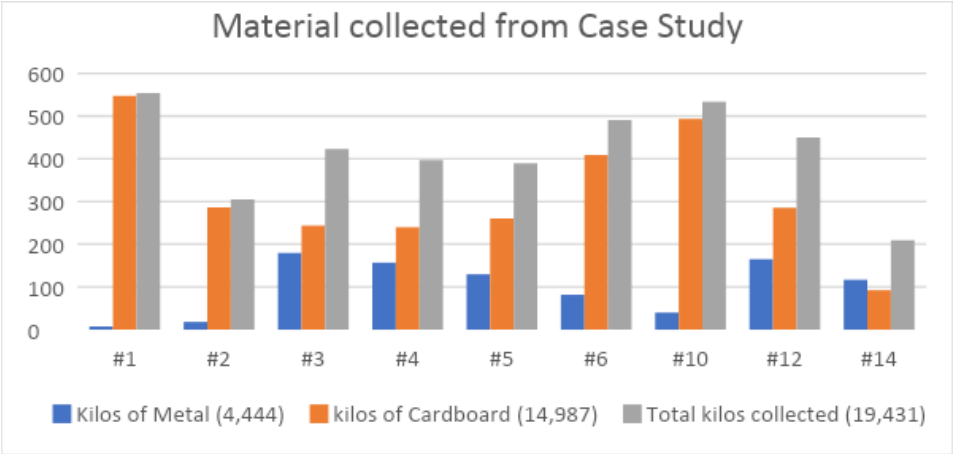
3.4 Volumes of materials collected in comparison with the formal sector

For the case study, the material collection was focused on cardboard and metals. These two items were chosen for the study because it is the vast majority of what the chatarreros of Granollers collect, though it is understood that the chatarreros will take anything in the containers that they can sell for profit, including clothes, electronics, kitchen equipment and anything else you would find in a second-hand store. This sentiment was expressed on the first day I was walking around with one of the chatarreros. We were pushing his cart and searching through the containers when he turned to me and said, “When you see it, you take it” (Actor #2, 2018).

For the questionnaire, information was collected on the kilos of paper/cardboard, kilos of metal, and combined kilos of both materials. Additionally, questions were asked regarding the price attained for paper/cardboard and the price attained for metal. Based on the information the

chatarreros shared with us in the questionnaire, for eight weeks they collected 4,444 kilos of metal and 14,987 kilos of paper/cardboard (Figure 8.3).

Figure 8.3 – Total material collected in the questionnaire



Source: (Rendon – Author's interpretation of data)

In order to understand the total volume of paper/cardboard and metal that the chatarreros collected, first the average amount collected per week was determined. This was accomplished by adding up the total amounts per week of each chatarrero, and then dividing that number by the numbers of weeks of collection. This was done with each chatarrero, and then the totals of all of them were added up and divided by the number of chatarreros, providing an average per week of the total. The weekly total was the base number since only eight weeks of data were collected and there was one week missing in the middle, so it didn't make sense to focus on monthly amounts of material. Once the weekly averages were determined, additional calculations were made to determine month and annual numbers. First, the total amount per week was multiplied by 52 (since there are 52 weeks in a year) to get the annual volume, then that number was divided by 12 to get the monthly average.

Metal – From the data collected, the average number of kilograms of metal per person per week was 92.5 kilograms, which calculates to 401 kilograms per month, and 4,810 kilograms per

year. This investigation does not run the same comparative calculations on metal as it does on paper/cardboard, mainly because those numbers are harder to obtain. The numbers for paper/cardboard are collected by the municipalities, and since municipalities are public, they publish the numbers each year. Since metals are stored, bundled and sold by recuperadoras, which are private companies, they are not obligated to share their numbers, and only one was willing to be interviewed for this investigation. Therefore, the following calculations were performed, based on numbers obtained on paper/cardboard, even though it is only one resource that the chatarreros collect.

Paper/cardboard - From the data collected, the average # of kilograms of paper/cardboard per person per week was 312.23 kilograms, this calculates to 1,353 kilograms per month, and 16,236 kilograms per year. Once the average weekly, monthly and annual amounts were established, a table was created to determine what that amount would be if there were 25, 50, 75, or 100 waste pickers, in order to determine their impact in the area. It is notable that none of the municipal employees nor chatarreros know exactly how many informal waste recyclers are in the area of study, with estimates ranging between 20 and 100 people. From the previous campaigns conducted by the city of Granollers and the opinions provided by the social workers of El Xiprer and chatarreros, it was determined that during the observation period there were on average, around 50 informal recyclers/chatarreros working in Granollers. Table 8.2 visualizes the amount that was calculated.

Table 8.2: Average kilograms of paper/cardboard

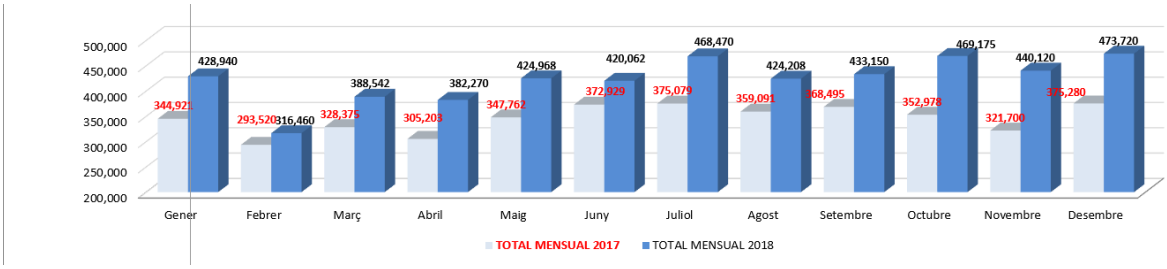
# of waste pickers	Per week (kg)	Per month (kg)	Per year (kg)
1	312.23	1,353	16,236

25	7,805.75	33,825	405,899
50	15,612	67,652	811,824
75	23,417	101,474	1,217,684
100	31,223	135300	1,623,596

Source: (Rendon – Author's own elaboration using idescat)

Next was to compare the kilos of paper/cardboard collected by the waste pickers with the amount collected in the area of study and the total amount collected in Vallès Oriental. To determine the area of study, I looked at the locations the waste pickers self-reported that they collected paper/cardboard. From the questionnaires, it was determined that the waste pickers listed 12 locations that they were collecting from (Table 9.1). In alphabetical order, they are: Bellavista, Can Bassa, Canovelles, Franqueses del Vallés, Granollers, La Garriga, La Roca del Vallés, La Torreta, L'Ametlla del Vallés, Lliçá d'Amunt, Lliçá de Vall, and Mollet. Next, in order to determine the total amount of paper/cardboard collected in the area of study as well as the total amount of kilograms for Vallès Oriental, I looked on savosa.cat which tracks the volume of material for the Waste Management Consortium of Vallés Oriental (Consorci per a la Gestió dels Residus del Vallés Oriental). This website provided the concrete data (figure 8.4) needed in order to make a comparison.

Figure 8.4: Savosa.cat 2017 & 2018 collection data



Source: (Serveis, 2019)

The data that savosa.cat provides breaks down the collection of paper/cardboard between regular collection and door to door (Puerta a Puerta) collection. In some parts of Catalonia door to door

is used for residential collection, but in the area of service it is only used for businesses, and businesses are one of the places that waste pickers collect their material. For regular paper/cardboard collection, savosa.cat provides data for 36 different municipalities, and for door to door paper/cardboard collection, savosa.cat provides data for 11 different municipalities. In order to determine whether or not to include each municipality's data in the area of study, the frequency with which the chatarreros visited a specific municipality helped determine if it was included. Since it didn't make sense to include that municipality if a chatarrero only went there once, it was determined that a city would only be included if that city was frequented more than three times, providing more accurate data for the target area. Based on these criteria, the following cities were included as part of the collection area: Granollers, Canovelles, Franqueses del Vallés, and La Roca del Vallés.

Table 8.3: Collection area of study

Municipality	Regular Collection per month	Regular per year	Door to door per month	Door to door per year	Total per month	Total per year
Granollers	57,227	686,719	7,254	87,043	64,481	773,762
Canovelles	10,113	121,355	0	0	10,113	121,355
Franqueses del Vallés	321*	321	0	0	321	321
La Roca del Vallés	9,650	115,799	0	0	9,650	115,799
Total	**77,311**	**924,194**	**7,254**	**87,043**	**84,565**	**1,011,237**

*Only one month of data Source: (Rendon – Author's creation based on data from idescat)

The paper/cardboard numbers were listed in table 8.3 along with the total volume of Paper/Cardboard collected in Vallès Oriental in 2018. The total kg of Paper/Cardboard for Vallès

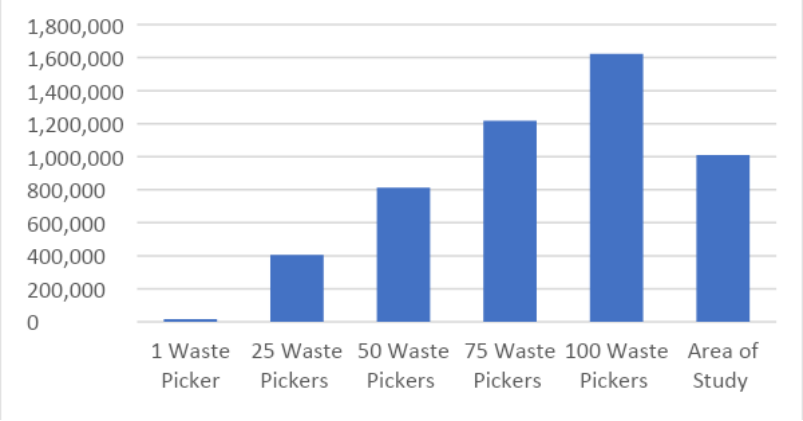
Oriental for 2018 was 5,070,085 (422,507 per month). Additionally, the total kg of paper/carton porta a porta for Vallès Oriental for 2018 was 947,456 (78,955 per month). Therefore, the total amounts are as follows:

-422,507 (regular monthly collection) + 78,955 (porta a porta monthly collection) = 501,462 kilograms of paper/cardboard per month for Vallès Oriental

-5,070,085 (regular annual collection) + 947,456 (porta a porta annual collection) = 6,017,541 kilograms of paper/cardboard per year for Vallès Oriental

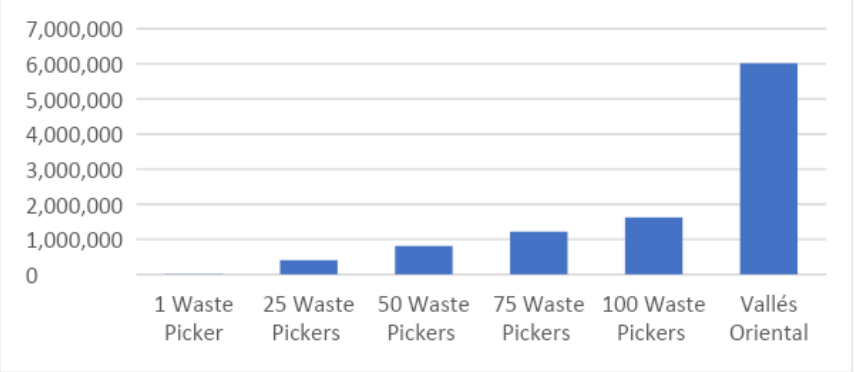
Based on this data, below are two charts that show a visual representation of the amount of paper/cardboard that would be collected if there was one waste picker (based on the average kilograms from the questionnaire), 25 waste pickers, 50 waste pickers, 75 waste pickers, and 100 waste pickers, based on a monthly and annual average of collection.

Figure 8.5: Annual waste picker collection compared with 2018 total in area of study



Source: (Rendon – Author's own elaboration based on data obtained)

Figure 8.6: Annual waste picker collection compared with 2018 total of Vallès Oriental



Source: (Rendon – Author's own elaboration based on data obtained)

In figure 8.5, I compare these numbers with the total amount collected by the area of study, and in figure 8.6, I compare these numbers with the total amount collected in all of Vallès Oriental. As mentioned previously, it was determined that during this time period there were on average 50 chatarreros in the area of study. The number of chatarreros in Granollers is constantly changing and varies based on a variety of variables including the number of immigrants arriving and the price that they are getting for materials. Therefore, these numbers are best described as an average number of what a chatarrero could collect in the area of study during this time period. Figure 8.7 shows the impact of 50 chatarreros on the monthly collection of paper/cardboard in the targeted area, showing that the chatarreros could have collected roughly 44% of the paper/cardboard.

Figure 8.7 Monthly average of paper/cardboard collected

Source: (Rendon – Author's own elaboration based on data obtained)

If this is the case, then 44% is a significant percentage (almost half) of the total paper/cardboard collected, and therefore represents a significant impact to the recycling numbers. Regardless of the exact number of chatarreros, it is apparent that the chatarreros have a significant impact on the volume of paper/cardboard recycled, and therefore a significant impact on the environmental goals and objectives of the municipalities listed. This impact is completed without the chatarreros receiving any recognition for their contributions.

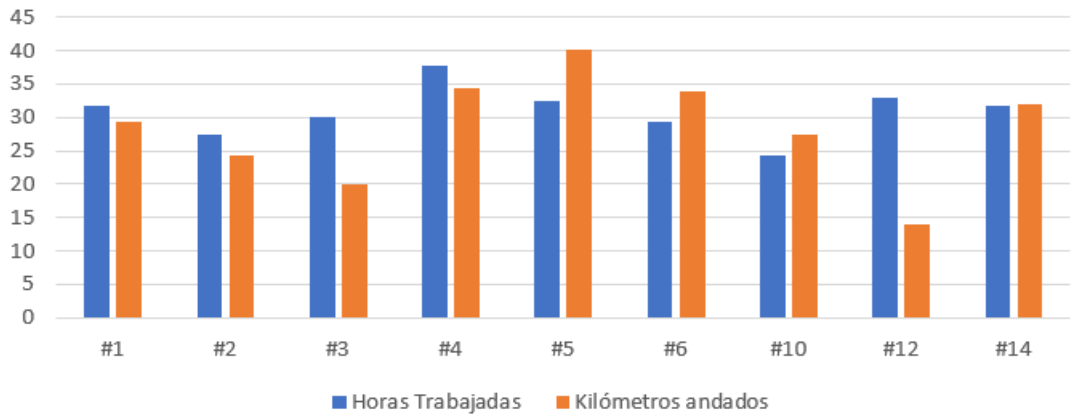
3.5 Hours worked and kilometers walked

As part of the questionnaire, the chatarrero were asked how many hours they had worked, and the average was 31.25 hours per week. However, since in the questionnaire it was not differentiated between how many hours were accumulated pushing a cart compared to doing other activities for work (gardening/painting) it is hard to say exactly how many hours were spent specifically doing this type of work. Based on the accumulated data, the highest amount recorded was 72 hours per week, and the lowest was 8 hours a week, with the average being 31.25. Mentioned prior, one of the main realizations from the study is that the chatarreros do not

exclusively spend their time pushing a cart around collecting materials but take work wherever they can get it, which could change daily, or even hourly.

Furthermore, the chatarreros were asked how many kilometers a week they walked, and the average was 30.54 kilometers per week. 30.54 kilometers calculates to 5 kilometers a day based on a 6-day work week, and 6 kilometers a day based on a 5-day work week. Although the chatarreros were not asked to clarify between this work and other jobs, since other jobs are usually stationary, it is fair to say that this number represents an actual number of kilometers walked collecting material during the recorded period. Per the data collected, the most kilometers walked in a week was 60. This would compute to 10 kilometers a day based on a 6-day work week, and 12 kilometers a week based on a 5-day work week.

Figure 8.8: Hours worked and kilometers walked



Source: (Rendon – Author's own elaboration based on data)

The data in figure 8.8 suggests that working more hours does not mean walking more kilometers. How many kilometers walked is based on where you can find the materials you are looking for, which can be determined by how long someone has been in the community and how many relationships with business owners they have made. This is demonstrated when looking at figure 8.8 and comparing participant #3 with participant #6. It can be seen that they both worked

roughly the same number of hours, but the distance they walked was very different, this demonstrates that different waste pickers travel different amounts of kilometers based on where they can access the materials they are collecting.

3.6 Exposure to risk factors

The lived experience of the informal recycling sector best exemplifies the unequal distribution of environmental risks and toxic burdens, or environmental injustice, that they experience. In their everyday actual experience in space, the informal recycling sector's health and safety are constantly being put at risk. Though health and safety are considerations with any profession, they are amplified in the waste sector due to the composition of material being handled and the physical nature of the work. The physical composition can be literally anything that gets thrown into the trash, including dangerous items such as sharp objects, toxic materials, animal feces, and household poisons. As table 8.4 (below) shows, the risk factors related to solid waste include both what the waste is composed of, and the processes for handling and disposal.

Table 8.4: Risk causing factors related to solid waste: origin and examples

Origin of risk factor	Examples of source of possible risk
Composition of waste	Toxic, allergenic and infectious components including gases, dust, leachate, sharps, broken glass
Nature of organic decomposing waste	Gaseous emissions, bioaerosols, dust, leachate, and fine particle sizes; and their change in ability to cause a toxic, allergenic or infectious health response
Handling of waste	Working in traffic, shovelling, lifting, equipment vibrations, accidents
Processing of waste	Odour, noise, vibration, accidents, air and water emissions, residuals, explosions, fires
Disposal of wastes	Odour, noise, vibration, stability of waste piles, air and water emissions, explosions, fires

Source: (Wilson, 2006, p.803)

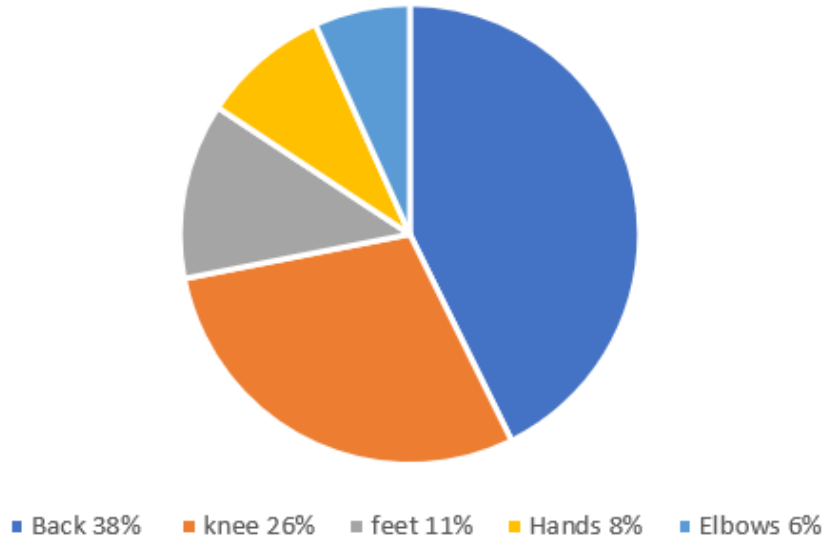
For the informal recycling sector, which often do not have access to protective clothing/equipment and who are working in direct contact with waste through-out the year, health and safety concerns are paramount. According to Wilson, “the risks can originate from the nature of the waste, or the process of collecting, processing, recycling and disposing of it” (Wilson, 2006, p.803). Because of this reality, “Informal waste pickers are undoubtedly exposed to increased risks” (Wilson, 2006, p.803), exemplifying the environmental injustice that they experience.

As part of the case study, interviewees were asked about their health, and how their work affects it. From their responses, one of the main health problems they experience are frequent colds. According to the participants of the study, this is due to climatic conditions in which the work is carried out: mainly outdoors, with large fluctuations between heat and cold.

#2: I'm hot when it's hot. And cold when it's cold. I've had colds. (Interviewee # 2, 2019)

As well, interviewees report various types of body aches, such as headaches, sore feet, and back aches. As can be seen in Figure 8.9, the largest percentage of body aches are back pain (38%) from bending over and lifting all day long, followed by pain in the knees (26%), feet (11%), hands (8%), and elbows (6%).

Figure 8.9: Location of pain



Source: (Rendon – Author's own elaboration based on data obtained)

In some cases, these aches can limit their work as informal recyclers, as it makes it difficult for them to travel long distances.

> #4: (...) I have pain in my feet. I can't walk much. (Interviewee # 4, 2019)

> #7: No, accidents no. But body aches, yes, a lot. (Interviewee # 7, 2019)

Injuries and accidents such as cuts and wounds to the hands are a common occurrence. For this, the interviewees usually use a type of cream called, Karité.

> #5: I haven't had any accidents, but I've had many injuries.
> Q: And how did you heal?
> #5: With Karité.
> Q: What is it?
> #5: It's an ointment. It cures everything. It's a very famous ointment in Africa.
> Q: And where do they sell it?
> #5: In African stores. It also works for when you have body pain, you put it on before you go to sleep, when you get up in the morning you shower and you're cured. (Interviewee # 5, 2019)

> Q: Have you ever hurt yourself?
> #6: Yes, many times. I have injuries, and a bad body... And a headache. And body pain.
> Q: Do you also use Karité cream?
> #6: Yes. You put it on at night after the shower and it works very well.
> Q: Have you ever had to go to the doctor?
> #6: Yes, but a long time ago. It's been over two years. My doctor gave me prescriptions, and so I

> pay very little at the pharmacy. Thanks to the doctor, I was able to get medication. Because he knows I don't have papers, and that's why it makes it easier for me. But not all doctors do that. I've been lucky. (Interviewee # 6, 2019)

As table 8.5 illustrates below, for strategies to help with the pain, using the Karité cream was the top choice.

Table 8.5: Health strategies of the chatarreros

Strategy	# of times mentioned	Percentage
Cream (Karité)	35	36%
Nothing	34	35%
Medication/Paracetamol	12	13%
Effervescents	5	5%
Spray	5	5%
Visit a Dr.	3	3%

Source: (Rendon – Author's own elaboration based on data obtained)

It should be noted that when the chatarreros have a health problem, they access the public health-care system, called the *Centre d'Atenció Primaria* (CAP). They obtain access to CAP by registering as residents of the city of Granollers, which they can do even if they are not legal citizens. By registering, they can obtain access to some basic services such as health services and medicines at a reduced price.

Chapter 9:
Three forms of the urban commons

As mentioned in chapter 8, Lefebvre viewed space from three different perspectives, the perceived space, the conceived space, and the lived space. Lefebvre also proposed three dimensions of the right to the city; everyday life, sharing space, and creative activity, that spread out into three forms of commons (Lefebvre, 1968). These three commons are, urban commons around production and consumption urban commons around public spaces of mobility and encounter, and urban commons around creativity and collective visions designing imagined communities (Susser, 2013). The idea is that when these three urban commons are brought together, they create the ideal conditions for a renewed right to the city, and a new urban social movement (Lefebvre, 1968, Feeney, 1990, Purcell 2002, Harvey, 2012, Narotzky, 2013). In this investigation, I am not arguing whether these conditions create the ideal situation for a social movement. However, I do use the format of the three forms of commons, as it provides a solid base to look at three aspects of the chatarrero phenomenon that take place in the urban commons. These three aspects include arguments about who can claim ownership to waste, who has access to it, and what global and local factors determine the relationship between the formal and informal recycling sectors.

1. Urban commons around production and consumption: Who owns waste?

One of the questions that emerged early from this investigation is the topic of ownership regarding the materials that the chatarreros are collecting. This ascertainment is not clear since chatarreros collect their materials from many different places; outside containers, inside containers, outside deixalleries, inside deixalleries, outside private business (such as grocery markets) and properties (such as construction sites), inside private businesses and properties, and

in public spaces such as construction sites of public properties, and on the public sidewalks and streets. What words are used to describe the activity provides some insight into perspective, but who owns the waste depends on who you ask, and their answer usually depends on where the material is collected.

1.1 Taking or stealing? Language of ownership

One way to determine the perception of ownership regarding the activities of the chatarreros and other informal workers is to look at the language that is used when others are talking about these activities. In the interviews with municipal employees, five Spanish words were used at various times to consider their activities. These words are *desvalijar* (ransack, burglarize, or empty), *robar* (steal, rob, or take), *coger* (take, grab, catch), *sacar* (extract or take out), and *quitar* (remove). There is not a direct translation with any of these words as it often depends on context, but the word *robar,* is generally viewed as taking something that is not yours. In the following examples, I included the Spanish word after my English translation. Here are two examples used by a municipal employee in Mataró using the words *desvalijar*, *robar*, and *coger*.

> Taking apart the fridges happens to us [the city of Mataró]. It appears the fridge has been emptied [desvalijar]. They disassemble it to recover the engine and the materials that are inside. They disassemble them and then leave only the casing of the fridge. (Municipal staff #1, City of Mataró)

> With the police we had met to see what we could do. Later, when they catch a person stealing [robar] or taking [coger] the material from the container, in the end, when the penalty goes to the judge, the value of the material is so insignificant that if you catch can catch them red-handed, it still ends in nothing. (Municipal staff #1, City of Mataró)

Here is an example from Besalú using the words robar and quitar.

> Another thing is the illicit exploitation that some people can do by "robbing" [robar] the cardboard from inside the containers. This does happen, especially when the price of cardboard goes up. A few months ago, the price of cardboard on the market fell a lot, so these

> kinds of activities don't happen. But in the past, we've had problems with people removing [quitar] the cardboard from the containers. (Municipal staff #6, City of Besalú)

The following two examples from the city of L'Hospitalet use the words coger, robar and sacar, and offer specific perspectives about whether the activity is legal or not.

> So, in theory, you can't take out waste and then sell it, you can't, but the police don't go after you. No, they don't go after you. Regarding "taking," [coger] the law is very clear. If it is in a container it is municipal property and therefore no one should take anything out, but as it is, people do. They do it to eat. (Municipal staff #2, City of L'Hospitalet)

> When there have been robberies [robar] the police have intervened. But I tell you, for opening a container and taking [sacar] out the paper no complaints are made. They are made when it has been stolen [robar] from private property. When they have entered a company and stolen [robar] the copper, it is obviously a criminal offence and the Urban Guard, or the Mossos pursue it. (Municipal staff #2, City of L'Hospitalet)

And a final example from the city of Terrassa,

> As a society, where there are people doing that, that should not be accepted. We will not institutionalize it. People collecting, first, it shouldn't be done, no one can take [coger] anything from the trash, everyone that is doing all these actions, surely it is done to stay alive, because he/she doesn't have another way, [but] they shouldn't do it. (Municipal staff #3, City of Terrassa)

These examples provide some insight into the perspective of some of the municipal waste employees. The language that is used show that these employees do not think the actions of the chatarreros are legal, and furthermore, that the chatarreros are committing a crime by taking something that is not theirs. Although some of the municipal employees view it that way, not all of them hold this perspective. The bigger question depends on the physical space the material is collected from, and who's property that that physical space belongs to.

1.2 Arguments of ownership

According to some perspectives, the ownership of waste depends on who owns the property where the waste is collected. According to Feeney (1990), there are four types of property; 1)

Open Access, 2) Private, 3) Communal, and 4) State. “Open access is the absence of well-defined property rights” (Feeney, 1990, p.4). In this definition, access to the specific resource is unregulated, with access to everyone. Feeney uses the example of offshore ocean fisheries prior to the twentieth century, where everyone had access to the resources within the oceans (Feeney, 2019). The second property is private property. “Under private property, the rights to exclude others from using the resource and to regulate the use of the resource are vested in an individual (or group of individuals such as a corporation) (Feeney, 1990, p.4). These rights are given jurisdiction by the state, and they are exclusive and transferable (Feeney, 1990). The third type of property is communal property or that of the commons. “Under communal property, the resource is held by an identifiable community or interdependent users. These users exclude outsiders while regulating use by members of the local community” (Feeney, 1990, p.4). Feeney points out that within the community of users, access to the resource are normally not exclusive nor transferable, and usually offer equal access for all members of the specific community. The final property is state property. According to Feeney, under state property, “rights to the resource are vested exclusively in government which in turn makes decisions concerning access to the resource and the level and nature of exploitation…the category of state property may refer to property to which the general public has equal access and use rights such as highways and public parks” (Feeney, 1990, p.5). According to Feeney, “the nature of the state property regime also differs from the other regimes in that, in general, the state, unlike private parties, has coercive powers of enforcement” (Feeney, 1990, p.5).

When looking at the physical spaces where chatarreros come in contact with materials, they fall into four types of property, open access, open access/private, private, or state

ownership. However, how the material is managed, and arguably the material itself, falls into the realm of communal property (which will be discussed in section 1.2.5).

Table 9.1: Types of properties

Physical Location	Type of Property	Regulation	Enforcement
Open Access			
Containers Outside	Open Access	No	No
Public spaces Outside	Open Access	No	No
Open Access/Private			
Deixalleries Outside	Open Access /Private	Some	Some
Private businesses Outside	Open Access /Private	No	Some
Private			
Private businesses Inside	Private	Yes	Yes
State			
Containers Inside	State	Some	No
Deixalleries Inside	State	Yes	Yes
Public spaces Inside	State	Yes	Yes

Source: (Rendon – Author's creation)

As can be seen by Table 9.1, under Feeney's definitions, the physical spaces are either open access, state, or private property, and both regulation and enforcement are not consistent.

1.2.1 Open Access ownership

As can be seen from table 9.1, there are two access points where there is the absence of any well-defined property rights, and where access to the resource is unregulated. These two locations are outside of containers and outside public spaces.

Containers – outside: In general, materials that are left outside of containers are seen as open access. There is some uncertainty about exactly when a resource goes from privately owned to state owned. For example, if a private citizen leaves material next to, or on top of a container, is that now state owned since it is **on** state property, even though it is not **in** state property? Regardless of who owns it, if the material is next to the container, but not in the container, it is viewed as open access. As mentioned by this municipal employee with the city of Barcelona,

> I tell you, if you can check, there's no metal in the containers. What's next to the container, a metal lamp or something can be picked up if it's next to the container, or the bulky pick-up day if there's anything, they can pick it up, but it's difficult from inside the containers, I'm not saying people don't look for it because people are looking, but the metal they find in the container is basically anecdotal. (Municipal staff #10, City of Barcelona)

Although in this exchange the employee is talking about what is inside the container, the reference to material next to the container shows that this behavior is accepted and a type of open access property. Additionally, it is also observed that public citizens also leave material outside of the surface containers, either on top of it, or right next to it, specifically for the chatarreros to pick up. In this way, the presence of the chatarreros has changed the behavior of the citizens.

Public spaces – outside: This type of property is most open to the concept of open access, as there is little debate about it. For instance, if you are walking in a park and see a piece of cardboard, you can pick it up and claim it as your own. This belief holds true for material on public sidewalks, as well as materials on public streets.

1.2.2 Open Access/Private ownership

For open access/private ownership there are two access points, outside of the deixalleries and private businesses. These two locations are put into this category because there are elements of them that are open access, and elements that are private.

Deixalleries – outside: Outside of deixalleries are a mix of private and open access. Since the material is usually brought to the deixalleries in people's private vehicles, there is an element of privacy to it. However, if they leave material outside of the deixalleries, it would be seen as open access. An interesting question is how to categorize the exchange if an informal worker asks the person bringing the material to give the material to them. In this case, the citizen is inside his/her private vehicle, but the informal recycler is standing on state property. In this scenario, there is no law against a transaction of materials being made, but it can have some enforcement if the people inside the vehicles are feeling harassed (as addressed in chapter 9).

Private businesses – outside: This category also has both private and open access elements to it. If a business owner leaves a pile of cardboard just outside his/her store, it might be on his/her property, it might be on state property (in this case the sidewalk), or it might be on a combination of the two. Although there is no regulation in this scenario, there might be some enforcement of the material on the part of the owner if the owner is collecting it for a specific informal worker where a relationship has already been formed. Though in general, if recycled material is left outside of the store, it is perceived as open access, and anyone can take it. This scenario is explained by interviewee #8,

> There are some people who call me to give it (materials) to me. They keep it for me. But if I've been out and I haven't been able to go, then they leave it on the street and someone else comes by and takes it away. This week I would have picked something up, but it wasn't there and others have taken it. (Interviewee #8, 2019)

1.2.3 Private ownership

For private ownership, there are three access points; outside deixalleries, outside private businesses, and inside private businesses. Outside deixalleries and outside private businesses were discussed on under open access/private, since they both contains elements of both private and open access.

Private businesses – inside: This access point is the clearest example of private ownership of materials. Under this scenario, a private business either has, or actively stocks resources, and freely gives them to the informal recycler, often times calling the informal recycler to set-up an agreed upon time for collection. For example, one chatarrero mentioned that there are several companies and people who keep materials (mostly metal) for him and he stops by every other week to pick it up (Interviewee #4). Another (Interviewee #8) said that several building companies keep metal for him, and periodically, they contact him to let him know when he can collect it. The relationship between the informal recycler and the shopkeeper is usually consolidated overtime. As social worker, David Perez states,

> "Depending on how long they have been chatarreros (I remind you that there are people who have been doing this precarious work for 10 years) they can have good relations with people. Companies or businesses who keep cardboard or metal only for them and not for anyone else, with which the chatarreros can have more or less stable routes to collect good material. That implies that many times there is some discussion about who picks up according to where." (Perez, July 2 email)

These relationships can take many years to form, and newer informal recyclers begin without any of these connections. Newer informal recyclers spend their time searching through containers for resources while trying to establish relationships for the future. This scenario is exemplified by this dialogue with interviewee #3 whom informal recycling is a relatively new activity,

> Q: Isn't there a store or company that stores material for you?
> #3: No, no one. If I'm lucky, I see something on the street, well, but if not...
> Q: But there are people who do keep them? No?

> #3: Yes, but it's people who have been here longer and have more contacts. I still do not…People who have been here for more years do. (Interviewee #3, 2019)

An interesting note about business owners and their private property is that the resources given to the informal recyclers are not always outside of the shop, but often times in the shop, with the owners giving the chatarreros permission to enter. As a municipal employee with the city of Granollers states,

> They (the informal recycler) always goes to the same places. Because when they already have a routine, they are expected. They already have permission to enter inside the store, and inside they collect everything and prepare it for the night. They take it out at the last moment and that's it. (Cruz, 2018, May 25).

This experience was also true in my participatory observation, as I was asked inside a store to collect cardboard that had been saved for someone like me with a shopping cart. This scenario demonstrates the relationship between private companies and the informal recyclers. Being granted permission to access the resources is key, otherwise, as mentioned by a municipal employee in the city of L'Hospitalet, "When they have entered a company and stolen the copper, it is obviously a criminal offence and the Urban Guard, or the Mossos pursue it" (Municipal staff #2, City of L'Hospitalet). However, when granted permission, than it is seen as a citizen transaction, as pointed out by this municipal employee with the city of Barcelona,

> On a particular level if someone who has any appliance and gives it to the chatarreros, and that's it, I say in principle this is not illegal, giving something is not illegal. It's not a crime to ask for or give anything. It happens with the metal, with the experience they have because they go through the small shops and small workshops and ask them for the metal and practically nothing reaches the container and the deixalleria, because if it is a large volume the shop owner manages it directly, because it has a positive benefit. (Municipal staff #10, City of Barcelona)

1.2.4 State ownership

As can be seen in table 10.1, there are three types of property that are considered state property. These three properties are inside containers, inside deixalleries, and inside public spaces. For this section, inside public spaces refers to inside trash and recycling trucks, though it should be clarified that these can also be privately owned.

Containers – inside: The inside of containers is the most contentious argument regarding whether the material inside is open access to everyone or not. Most people interviewed argued that once the material goes inside the containers, it is now owned by the state, although that doesn't mean that they are against open access of the contents. Returning back to the statement made by the municipal employee in the city of L'Hospitalet,

> So, in theory, you can't take out waste and then sell it, you can't, but the police don't go after you. No, they don't go after you. Regarding "taking," the law is very clear. If it is in a container it is municipal property and therefore no one should take anything out, but as it is, people do. They do it to eat. (Municipal staff #2, City of L'Hospitalet)

Besides making clear that the material inside of a container is state (or in this case municipal) property, this statement also mentions that enforcement does not happen. The lack of enforcement happens for two main reasons; 1) the community recognizes the precarious situation that the informal recyclers are in, and therefore either don't support enforcement, or 2) the municipality had supported enforcement in the past, but since there is limited jurisdiction, enforcement was ineffective (which is discussed in the next section).

Deixalleries – inside: The material inside the deixalleries is considered state property, and it is generally understood that entering the deixalleries to remove materials is not allowed. As clarified by this municipal employee in the city of Besalú,

> We're alerting police officers in case they detect anything. But well, that no longer depends on municipal ordinances, it depends on enforcing the law. If you go into deixalleries (after hours), this is illegal, it's trespassing. If you get materials out, it's a crime. (Municipal staff #6, City of Besalú)

This employee clearly believes that entering deixalleries after hours is not allowed, as you are trespassing on state owned property. However, in a 2015 study of this phenomenon, it was pointed out that though some municipal employees also shared this view, others recognize the impoverishment of the people committing these crimes, and see this as less of a case of burglary and waste management, and more as a social need (Espluga, 2015). Due to these divergent perspectives, "one of the debates emerged has been whether or not these robberies respond to personal needs or to organized criminal groups" (Espluga, 2015 p.70). If they are are responding to personal needs, there is some debate as to whether the practice should be allowed, whereas if it is due to organized crime, there is no debate.

Public spaces – inside: Inside public spaces would include city property, as well as mobile deixalleries, and trash trucks. A surprising discovery was that most informal recyclers interviewed claimed that they maintain excellent relationships with workers in waste collection companies (which could be either private or state). They usually know each other, and sometimes they are even friends, greeting each other and helping each out. This is especially true if there are other immigrants working for the formal waste sector. For example, one chatarrero interviewed (Interviewee #6), mentioned that the relationship between the formal and informal is quite good.

> Q: Have you had any problems with workers in companies that pick-up trash?
> #6: No. They're very good people. They help me a lot, and I help them, too. If I find that they're carrying things that weigh a lot, I help them. And they help me too, they keep materials, tell me where there are things to collect...We know each other well. (Interviewee #6, 2019)

This supportive relationship can extend to the formal recyclers going out of their way to support the informal recyclers. As an example, one person (interviewee #8) interviewed says that sometimes the formal recyclers pick up materials, carry them around in their vehicles, and then if they see him on the street, they stop and give the materials to him.

> Q: But somehow, you're taking away materials that they'd have to pick up, right?
> #8: Yes, but it's okay. They sometimes even give me cardboard. They keep it for me. Sometimes, they stop the car and give it to me.
> Q: But did this happen before, when the price was more expensive, or is it something now that happens now when the cardboard is cheap?
> #8: It happened before. Now sometimes they give it to me too, but I don't take it because it's not worth it. With the price drop it's not worth it. Those of the collection company also know, that it won't do me any good now. (Interviewee #8, 2019)

Another example is demonstrated through an exchange with interviewee #5,

> Q: And with the workers of the companies that collect the garbage you have not had any problem?
> #5: No. Sometimes there are workers who, if they see that we are dismantling things on the sidewalk, tell us that when we're done, we should pick it all up and throw it in the container. They treat us very well. We don't have a problem with them. (Interviewee #5, 2019)

Both the example of state employees stopping and giving the chatarreros the material, as well as state employees allowing the chatarreros to disassemble items as long as they put the parts they are not going to use back in the containers, demonstrates a tacit approval of the activities that the informal recyclers are carrying out. It also demonstrates that although the material inside the vehicle is state (or privately) owned property, some state employees and private employees are not against the chatarreros having ownership of it.

1.2.5 Communal ownership

When considering physical spaces, it is easy to categorize them in terms of ownership, but what about the material itself? With private property and state-owned property, it can be argued that materials are owned by the owners of those properties, but in areas of open access, whose property are these materials and how are they managed? Feeney's definition of communal property says that communal property is a resource held by an identifiable community or interdependent users. Though it is true that anyone can collect cardboard or metals in an open access area, in Catalonia, because of the informal recyclers use of shopping carts, bicycles, or

vans, and because most are not of the same ethnicity as the native community, it can be argued that they can be categorized as an identifiable community, who also operate interdependently with the formal economy. Since "commons are about resources and how they are appropriated in particular social relations that contribute to reproducing or, instead, to transforming existing social relations of production," (Narotzky, 2013 p.123) the resources that the chatarreros collect fit this construct. In a sense, the resources that the chatarreros collect, and the way that they collectively interact with the resource, is itself an example of the commons.

The most striking realization of the informal recycling sector participating in the commons is the equal access that is granted to the resource, and the sense of camaraderie amongst the members. Feeney states that "within the community, rights to the resource are unlikely to be either exclusive or transferable; they are often rights of equal access and use" (Feeney, 1990, p.4). This is relevant in terms of how the chatarrero in the case study view the resources that they collect. As mentioned previously, each chatarrero has his own circuit which he walks routinely. However, it does not exclude other recyclers from also taking that exact same route. This perspective is amplified in the following dialogue with interviewee #1,

> #1: Yes, every week more or less the same.
> Q: And could there be someone else who goes through the same places you go through?
> #1: Yes, although not normally... Every person has his luck. I can come in and get lucky and I can win. And you can come in and not win. Or the other way around. Luck is like that. Sometimes there are people who don't give to people [like us], but if it is left next to the garbage, the first one who finds it, it's yours. And there are other people who, when he has something, he keeps it for you and gives it to you. (Interviewee #1, 2019)

This shows that although individual shopkeepers might be keeping materials for a specific chatarrero, if that chatarrero is unable to collect the material, it can go to anyone. As well, if anyone sees materials in an open access area, they are welcome to take it. This shared sense of equity is also noticeable in stories about how chatarreros became chatarreros.

> #3: When I arrived, I didn't do this. But one day I saw a person on the street picking up

> cardboard and I asked him. What are you doing with this? And the person explained to me that he was looking for these things to sell. And I asked him how I could do it, because he had no papers or anything. And he told me we could do it together that day and that's how I'd learn. And we did it together, he taught me how to look, what things to pick up, which sites, where and how to sell it, etc.
> Q: And that person who taught you is still doing this?
> #3: That person has papers. In 2015 he had been unemployed and that's why he was collecting papers. But today he doesn't pick up because he's got a job again. (Interviewee #3, 2019)

This story reveals the openness that the chatarreros have amongst each other, and the sense that the work and the resource is not owned by any one person, but is a job and a resource that is accessible to all, as a form of commons. This sense of friendship and camaraderie amongst the chatarrero is seen throughout the interviews. As interviewee #1 states,

> #1: Yes, yes. If we meet (on the street) we talk to each other, we greet each other, without problems... Sometimes we invite each other over. On Saturday or Sunday, if there's not much activity, they come to my house or I'll go to theirs, and we eat and talk...

Whether the resources that the chatarrero collect are communally owned or not, the way that the chatarreros collectively interact with the resource and each other in relation to the resource closely resembles a lived experience in the urban commons.

2. Urban commons around public spaces of mobility: State actions to decrease accessibility of state-owned resources

As mentioned in the previous section, the majority of the formal waste management system view the informal collection of waste in specific locations as a type of theft, which is illegal and therefore should be stopped. Due to this perspective, in the past ten years significant actions on the part of the state have been used to alter accessibility of the materials in both deixalleries and inside surface containers. If continuing on this trajectory, it would appear that the goal of the state is to make both deixalleries and surface containers completely inaccessible to the informal recycling sector. These actions would not completely remove the informal recycling sector, since

many chatarreros collect materials directly from shops, businesses, and formal workers through established relationships, but it would limit the amount of materials that they collect.

2.1 Deixalleries: Inaccessible to the informal recycling sector

As mentioned, deixalleries are one of the access points that drive engagement between the formal and informal recycling sectors. Whereas in the prior section, public perceptions (especially intimidation) regarding this access point were discussed, this section examines the state response in order to limit the informal recycler's access to the materials. Limiting access to resources at the deixalleries are carried out by three techniques: building physical barriers, bringing in more staff, or calling the police.

2.1.1 Building physical barriers

The most common technique to limit the informal recycling sector's access to the deixalleries is by using fencing. As can be seen in picture 9.1, fencing is used to limit access to the resources inside.

Picture 9.1 South deixalleria in Granollers

Source: (Rendon - April 29, 2018**)**

This technique was supported by municipal employees as a technique to deter access. As this municipal employee in Rubí states,

> As a municipality we made an investment in the perimeter fence of the deixalleries, making a fence more difficult to jump. We did not make it impossible. It was not electrified or with spikes above, but it was a fence that was difficult to access. (Municipal staff #5, City of Rubí)

This technique was recorded in multiple communities through-out Catalonia. Here is another comment from the city of Besalú,

> But in the deixalleries there has traditionally been an assault when the door closes, say by the fence, they are already waiting to jump the fence, to look at what they can get out of the deixalleria. There's already an accumulation of metal, so why go look elsewhere. And yes, something like this was happening, at least for a few years (Municipal staff #6, City of Besalú)

The use of fencing has a limited effect, as some fences (such as seen in picture 1.5) are very low and only serve as a partial deterrent.

2.1.2 Increased staff presence

The second technique used to curb access to resources at the deixalleries is to increase the number of staff that are physically present. This technique was mentioned by a municipal employee in the city of Olot.

> We do not have staff in the mobile deixalleries. We go, we leave a box, a truck trailer, and at night we pick them up. But we are thinking about this situation and also to have more educational capacity to provide the set staff at the deixalleries. (Municipal employee #12, City of Olot)

Increased staff at the deixalleries are used for two reasons, both of which are to deter informal recyclers from gaining access to resources. The first reason is to have somebody physically inside the mobile deixalleries so that people can only discard materials, and not collect them. The second reason is to talk to informal recyclers outside and make sure that they are not stopping

citizens going into the deixalleries to ask them for the materials. The end goal of both techniques is to limit the access of the informal recyclers.

2.1.3 Calling the police

The third technique used to limit access to resources at the deixalleries is by calling law enforcement to try and deter people from removing materials. Contacting law enforcement is usually a last resort after other attempts are made. As previously mentioned, law enforcement has limited tools since the charge of stealing waste is almost non-existent. The process with the police is explained by this response,

> We're alerting police officers in case they detect any kind of stuff. But well, that no longer depends on municipal ordinances, it depends on enforcing the law. If you get into a deixalleria, this is illegal, it's trespassing. If you get materials out, it's a crime. What happens is that since the value of the type of material of the waste is low, is never passes as theft. In the case of containers, it is the same. I can tell you to be in court, we caught someone, people from the country, they were not immigrants, taking cardboard out of the containers and we took them to trial. But once you're on trial what are you going to say? Do you put them in jail? Not really. They get served a warning, a warning (Municipal staff #6, City of Besalú)

The frustration of the problem is exemplified by comments made by this employee from the city of Besalú,

> Those who steal the material are other kinds of people who have no kind of diminishment. They jump the fences loaded with things. With illegal activities like these, what kind of policy can you do more than notify the police? (Municipal staff #6, City of Besalú)

It should be noted that contacting the police is a technique that is not only used at deixalleries, but for people taking material out of containers, as is explained by this municipal employee in the city of Valls,

> When the price of the paper was high, in a specific van the registration had been looked at, and we decided to call the police. One, because it's forbidden to take things out of containers, and two, because there is a whole system set-up here for people to come and steal the cardboard. (Municipal staff #11, City of Valls)

Although law enforcement has limited tools in addressing the problem, contacting them is an effective way of limiting the informal worker's access to resources since nobody wants to be confronted by police, especially people who are not legal citizens. It is important to mention again that the activity of taking materials from deixalleries is, from the municipal perspective, and the perspective of the CGRVO (2018), not something that the chatarreros with their supermarket carts engage in, but is done by other sectors of the informal recycling sector, usually in conjunction with a van.

2.2 Smart containers: Limiting access through design

A third way to limit access to materials is through containers specifically designed for this reason. According to a report from the EJ Atlas, on April 5, 2019, eighteen 'smart' containers were installed in the city of Buenos Aires (Calvas, 2019). The way that these smart containers work is that they "are completely sealed and can only be opened by residents who have cards with a magnetic strip. According to the public official in charge of this project, Eduardo Machiavelli, when the system works correctly, it will 'prevent people from getting into and taking out trash'" (teleSUR, 2020). According to Calvas, without access to the waste, the livelihoods of the informal workers in Argentina and their families are put at risk (Calvas, 2019). As Calvas reports, "the municipality stated that these containers were installed to improve the waste collection service to the neighbors. However, the Minister of Public Space of the city admitted that the main reason was to avoid rummaging through the trash by waste pickers" (Calvas, 2019).

This practice is not just happening in Buenos Aires, but is being considered in Catalonia to restrict access to the containers. When asked about future plans in regard to the chatarreros in Girona, a municipal employee stated,

> Look, the idea, where we're going is, where we can do door-to-door, we'll do door-to-door, and in the most central way. Where we can't do door-to-door, closed containers, and the better enclosure they have the better. With intelligent systems to open them and in zones and by areas. You have the card that opens the nearest ones and nothing else, this is the idea where we're going. (Municipal staff #9, City of Girona)

This same proposition was acknowledged in the city of Salt,

> Now with this new request for bids, we have made substitution of containers and it is more difficult, not impossible, but more difficult. (Municipal staff #4, City of Salt)

As mentioned in chapter 1, besides surface containers, Catalonia also has buried containers and pneumatic (air-pressured) systems, which allow no access to the materials inside. As well, the hole size of the opening of the containers has continued to shrink over the years, only allowing the specific material to fit inside. The argument is that it helps citizens put resources into the correct bins, though conversely, it also limits access to the resources. If the Catalonian government were to switch to 'smart' containers, informal recyclers will have almost no access at all.

3. Urban commons around creativity and collective visions of imagined communities: price and scalar relations of citizenship

The chatarreros of Granollers both affect and are affected by global and local dynamics. On the one hand, their very livelihoods can be determined by global markets that are beyond their control. While on the other hand, through Lefebvre's perspective, because their everyday lives affect the world around them, they are inhabitants that can claim the right to the city. This section looks at the price of commodities, how global politics have affected those prices, the co-

dependent relationship between the formal and informal recycling sectors, and who exactly has a right to the city.

3.1 Price of commodities

As pointed out in chapter 1, waste is a global issue, and because of this fact, global rates of recycling are increasingly influenced by global markets, relative shipping costs, and commodity prices (Hoornweg, 2012). From Harvey's (2012) perspective this would exclude the informal waste sector from being a real existing commons, since he believes that "a common shall be both collective and non-commodified—off limits to the logic of market exchange and market valuations" (Harvey, 2012, p.73). However, Narotzky (2013) critiques this assertion, and from her perspective market changes are often entangled with the commons in complex ways, or as Narotzky says,

> In most cases, a plurality of regimes of appropriation coexist, often overlap, and produce particular forms of commons, particular social relations of production, and particular conflicts. Historically, modes of appropriation and regulation often shift or express disjuncture between *de jure* norms and *de facto* practices. So "real existing commons", from which the theoretical concept derives, are complex processes that are not quite exempt of struggle. (Narotzky, 2013, p.123).

Regardless of whether this detail includes or precludes the informal recycling sector as a real commons, commodity prices have a strong impact in determining which materials have value, and therefore how many people participate in the informal sector.

3.1.1 The National Sword: How global commodity prices affect local recyclers

The main market change in the last few years is China's decision to stop taking most of the world's waste, including the majority of the fiber (paper). This decision culminated in February of 2017, with China announcing a new policy called "National Sword." National sword had a

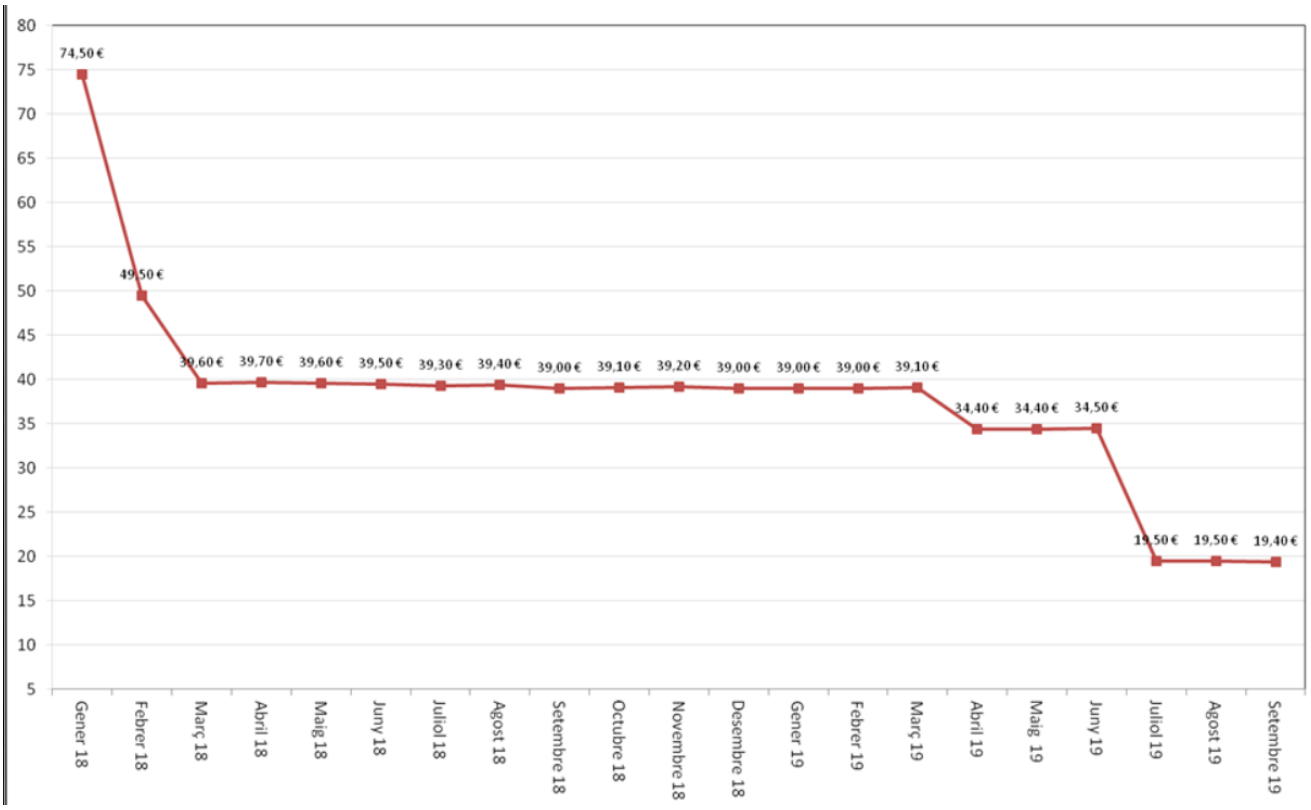
specific focus on halting smuggling operations, but was also enacted because China was tired of being the trash dump for the world.

Due to the National Sword, many materials were banned from import, including all materials which contained a contamination rate of more than 0.5 percent. Since global waste management systems normally contain a much higher percentage of contaminants, the 5% threshold is incredibly hard for most countries to meet, and the policy virtually ended imports of recycled materials. In early 2018, the effects of the law started being felt as China stopped allowing materials to come in, shipments of materials started moving to southeast Asia, and Chinese companies started looking to invest in processing infrastructure in the U.S. and elsewhere. On April 19, 2018 China announced additional materials it was going to prohibit, including post-industrial plastics and a variety of metals (Resource Recycling, 2019, July 2), which also impact (though to a much lesser extent) the chatarreros.

Due to the ban, other markets have been opening up, (mostly in southwest Asia), as well as infrastructure being introduced around the world to meet the new demand. Additionally, fiber and plastic tariffs have been included in the trade war between China and the US, and countries are having trouble finding a market for their materials. There has been some hope for China to reverse its ban, as Chinese imports in early 2019 contained a much larger volume of recovered fiber than expected, but not close to prior volumes (Staub, 2019 Jan. 8). As pointed out by staff members of Resource Recycling, “on the paper front, Chinese companies imported 33.8 percent less recovered fiber last year (2018) than they did in 2017. The end result from the National Sword is that the price of recycling commodities has dropped, and waste pickers in Catalonia and around the world have seen a decline of revenue in paper/cardboard, as well as in metals.

Changes like the national sword have had a huge impact to both the formal and informal recycling sectors in Catalonia. In order to understand the increase and decrease of chatarreros in Catalonia, it is important to follow the price of paper, as the decline of chatarreros was proportionate to the price of paper.

Figure 9.1: Evolution of the price of paper and cardboard



Source: (Ariza, 2019)

Figure 9.1, translated as 'Evolution of the price of paper and cardboard,' shows the price of paper from January of 2018 through September of 2019. When the idea for this project first began, the price for paper was roughly 74.50€ per ton, and had consistently been at this level during the prior year. The empirical data used for this investigation was collected at three different times.

- Questionnaire & interviews with key actors
    - Oct. 16, 2018 – December 11, 2018

    - Price of paper averaged 39.20€ / Ton
- Interviews with municipal workers
    - May 2019 – June 2019
    - Price of paper averaged 34.45€ / Ton
- Follow up interviews with chatarreros
    - Sept. 4 & 11, 2019
    - Price of paper was 19.40€ / Ton

As can be seen, the case study's questionnaire was completed from October 16, 2018 through December 11, 2018, when the cost of paper had already started dropping. The interviews with the municipal workers took place from May of 2019 to June of 2019, when the price of paper was still dropping farther, and the follow-up interviews with the chatarreros took place in September of 2019, when the price of paper was half the amount from when the first interviews took place, and a quarter the price from the previous year.

3.1.2 Commodity prices during the questionnaire

On December 4, 2018, in trying to determine the income of the chatarreros and also to understand the additional materials gathered and prices for these commodities, I asked one of the chatarreros (Actor #10, 2018) about the material he collected and the price he received from the different locations. The table below is a visual representation of the data he provided.

Table 9.2: Price of commodities – December 4, 2018

Commodity	Location unknown	Llorens	Roche	Batlle
Cobre (copper)		3€ – 4.5€	3.8€	3.8€
Caldera (pot)		2.5€	2.8€	
Plomo (lead)	.70€			
Cable – high quality	1.3€			
Cable - electric	1€			

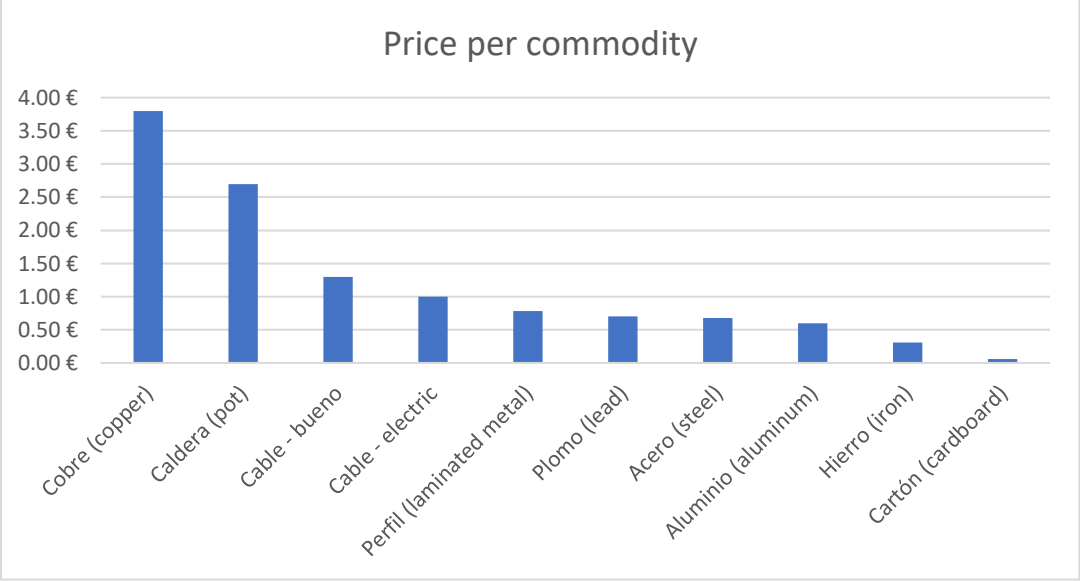
Perfil (laminated metal)		.70€	.80€	.80€
Aluminio (aluminum)	.60€			
Hierro (iron)		.10€	.16€	.14€
Acero (steel)		.65€	.70€	.70€
Zapatos (shoes) high quality	1.5€			
Zapatos (shoes) lesser quality	1€			
Pantalones (pants) high quality	.50€			
Camiseta (shirt)	.20€			
Chaqueta (jacket)	1€			
Bateria (car battery)	.12€			
Cardboard	.06€			

Source: (Rendon – Author's own elaboration based on data obtained)

There are many thing that can be observed from table 9.1. First, that the chatarreros of Granollers collect multiple things besides just cardboard and metal, but also, clothes and batteries. It was also noted that electronic appliances or materials that can be refurbished and sold at second-hand stores were also collected, but a price was not given for those materials, as they are varied. Table 9.1 also shows that within the generic determination of "metal," there can be a wide range of different materials captured from a wide range of products, all of which are worth a varied amount from the recuperadoras. The final thing to notice is that the lowest price for any commodity is that of cardboard, which was the main resource that some of the chatarreros who participated in the study were collecting.

Since the price for cardboard and metals were based on kilos, while the price of clothing was based on each particular item, and also because paper and metals were the main focus of the investigation, I separated metals and cardboard from the rest of the materials, and created figure 9.2.

Figure 9.2: Price per commodity – paper and metal



Source: (Rendon – Author's own elaboration based on data obtained)

As can be seen more distinctly, if kilos are used, paper is worth very little compared to every type of metal. Regardless of this fact, during this time period, some of the chatarreros were still collecting paper, with one (Actor #2) mentioning that it was still the main resource he was collecting.

3.1.3 Commodity prices after the questionnaire

It was apparent during this investigation that the decrease of chatarreros participating in the informal recycling sector was in direct relation to the decrease in the price of paper on the global market. This was noticed by not only municipal employees but also local businesses that

collected cardboard for the chatarrero. As business owner Amadeu Barbany commented about the previous year,

> "People would come by and pick up the cardboard, and now we (the business owners) have to call someone to pick it up. The price has come down, so shop-owners are realizing what a service they (the chatarreros) provided…The boys (chatarreros) use to say thank you to the shopkeeper, but now the shopkeeper says thank you to the boys" (Barbany, 2018).

During the interview with Ferralles Batlle, one of the recuperadoras, the owner stated,

> Now there are very low cardboard prices, and if this continues to go down to lower than 20 euros a ton, we will have all the paper back down on the street. And then these people (the chatarreros) will look for work in other things. (Ferralles Battle, 2018)

Besides the shop owners and recuperadoras, the municipal employees were also keenly aware of the drop in the number of chatarreros due to the decline in the price of paper, as the phenomenon was felt throughout Catalonia. Here are some examples from the cities of Olot, L'Hospitalet, Igualada, and Besalú,

> We haven't experienced this situation in a while. At the time of the crisis there was a small drop in cardboard material that we attributed to the economic crisis of activities, and perhaps a small presence of some cardboard theft, but not today. Today, I would say that it does not exist. And we don't see it in the containers of people who want to extract cardboard, no, we haven't seen anything. (Municipal staff #12, City of Olot)

> The price of the paper was exorbitant and suddenly it sank. (Municipal staff #2, City of L'Hospitalet)

> Chatarreros, no. They have stopped appearing, the price of cardboard has dropped a lot about a year ago. (Municipal staff #7, City of Igualada)

> A few months ago, the market price of cardboard fell a lot. So, these kinds of activities don't happen. (Municipal staff #6, City of Besalú)

As mentioned in the previous chapter, the municipal employees are also very aware of what the decline in chatarreros means to their workload, as explained by this municipal employee from the city of Mataró.

> Here we have containers on the street and it (Mataró) is a pretty big city. The subject of these people going, unfortunately, trying to get out of the containers what they can, to give them some resources to live. Of course, they were taking paper and cardboard during the high

> prices. Then it was hardly necessary for us to empty it, now no more. They say it's like twenty or thirty percent that the price of paper and cardboard has come down…And now it reappears in the containers. (Municipal staff #1, City of Mataró)

By the time the follow-up interviews were conducted (October 2019), the price of paper/cardboard was so low that almost all of the chatarreros had entirely stopped picking it up from the streets. Some chatarreros claimed that in the absence of other sources of income, they had no choice but to continue collecting cardboard and looking for items they can sell to second-hand stores metals. Not only is there almost no money for cardboard, but it also takes up a lot of room and is uncomfortable to drive with a cart.

> #3: Yes I've gone out every day to pick up metal, but I've been saving it at home and I've only gone twice to sell it. Cardboard, not much because the price is very low, and the cardboard takes up a lot space. If you carry it in the cart it is very uncomfortable because it takes up a lot of space, you collide with the walls or cars, and then they almost give you nothing. I've collected some books, but that's all. Metal yes. (Interviewee #3, 2019)

This newfound reality has made the chatarreros still doing this work worried about the future,

> #5: Now it's very difficult, because you can pick up a lot of cardboard but then they almost don't give you anything. You fill up the cart to the top and then it's worthless. It's demotivating.
> Q: But do you keep doing it the same way?
> #5: Yes, because I try to collect the metals I find. Just the metals. I also have these friends who call me from time to time to go load metal. (Interviewee #5, 2019)

Faced with this reality, their expectation is to find other tasks or jobs (informal), but while looking, they continue to search on the streets for metal, electronics, clothing, and even plastics. For example, Interviewee #6 mentioned that he also collects clothes and shoes, which are sometimes given to him by people who have hired him (informally) for other jobs. He then sells these clothes to other chatarreros and people he knows.

> #6: Yes, shoes. And also, the people who call me to clean give me clothes. Sometimes I send it to Gambia, and sometimes I sell it. Some people already know I have these kinds of clothes and they ask me and I sell them to them.
> Q: And these people how do they know that you sell clothes?
> #6: Because they are from Gambia, they are my people, and that is why they already know me. (Interviewee #6, 2019)

The timing of this investigation allowed a first-hand look at the global connection of the waste trade, and the impact that it can have on local populations.

3.2 Loss of money to the city or a co-dependent relationship?

The informal recyclers base their activity on objects and materials with market value, as opposed to city councils, which organize their collection systems based on the costs of the collection process itself. The city councils have their hands tied since they are obliged by municipal, regional, state, and national laws and commitments to manage the waste of each municipality, while the informal recycling sector operates outside of the law, choosing to collect and not collect based on other work opportunities, the price of materials, and personal preference.

Since some of the income generated by the municipality is based on the market value of specific products, and in particular the sale of paper, there is an argument over the economic impact that the chatarreros have on the formal recycling sector. At the beginning of this investigation there were some views that if the chatarreros took paper out of the municipal containers and sold them on the open market, then that was money that the municipality could have made and is now not receiving. The reason for this, is that as materials are taken out, it is harder for the formal system to reach their recycling goals, and if they do not meet their goals, they will receive less money from the state to manage the local waste. Towards the end of this investigation this argument has changed. Now, the price of paper/cardboard is so low that there are not many chatarreros still collecting it, and therefore, there is no longer a perspective that the chatarreros are taking profits away from the city.

Ironically, the reality of the economic impact from the chatarreros is much more multifaceted, and in some ways helps the cities. It is important to know that yes, the municipalities make some money off of the sale of paper and meeting their recycling goals,

however, their costs are determined by the amount of time it takes to collect all of the materials, transport them and process them. As this municipal employee in Salt details,

> In the case of the chatarrero. For example, they dismantle a washing machine, and the materials that have no value, they leave them everywhere, and that is an additional cost for the municipal collection of waste. They [municipal employees] are constantly in the neighborhoods to collect this waste. (Municipal staff #4, City of Salt)

This is one example of the cost of the municipalities based on extra time spent at a container. From this perspective, the chatarreros are creating extra work for the formal recycling sector, and therefore costing the city more. However, here is another example, as explained by a municipal employee with the city of Granollers,

> The city has to pay more every time they go to pick up something extra. After the crisis, community members put something out on the street, and the chatarreros would take care of it. So, the community members got used to this, and now when there are not people [chatarreros] picking it up, the city has to make extra stops. (Martinez, 2018)

As inferred from this quotation, if the chatarreros are not picking up materials (in this case paper/cardboard), then the city has to make extra trips to collect this material. In fact, the main concern now for city employees is that they moved part of the workforce responsible for collecting paper and commercial cardboard to other areas when prices were high, and now that prices have gone down, they will have to relocate those positions, thus costing the city more money for collection. Therefore, there is a somewhat co-dependent relationship that has emerged between the formal and informal recycling sector in Catalonia with regards to paper/cardboard. If the informal recycling sector is removing a key product from one of the containers (such as cardboard), then less employees are needed to collect the resource, thus saving the city collection costs. Of course, the reverse of this is also true. If there is less cardboard being removed from the containers by the informal recycling sector, than this creates more work for the formal recycling sector, and costs the city more money. This scenario is not only realized by the formal system, but by the chatarreros as well.

> #7: Yes, yes. Now they [formal recycling sector] have more work. They have to pick up everything we picked up before. Now it doesn't fit in containers...(Interviewee #7, 2019)

> #1: Yes. The town hall has a lot of work with the cardboard. The cardboard... now there's not much people who take it, so now on the street there's a lot of cardboard. In the town hall there are few people...(Interviewee #1, 2019)

In this way, the formal and informal system operate in a symbiotic relationship. The informal system is dependent on the formal system in order to have a place to collect materials, while the formal system is dependent on the informal system to keep labor costs down. As previously mentioned, the economics get complicated because of market fluctuations, labor demands of collection, and money received for meeting recycling goals and objectives. Because of this precariousness, informal recyclers are a sensitive issue for municipalities, and whether they can access or benefit from waste collection depends on whether they are perceived as obstacles or as potential improvement factors for the waste management system.

3.3 Urban inhabitance and right to the city

When defining exactly who should have the right to the city, "Lefebvre is very keen to define urban inhabitance as the key to political inclusion; he argued that those who inhabit the city have a right to the city" (Purcell, 2002, p.105). This idea is different than the general idea that rights are only bestowed on people who are legal citizens of a particular nation state. Purcell further expands on his interpretation of Lefebvre's vision by writing,

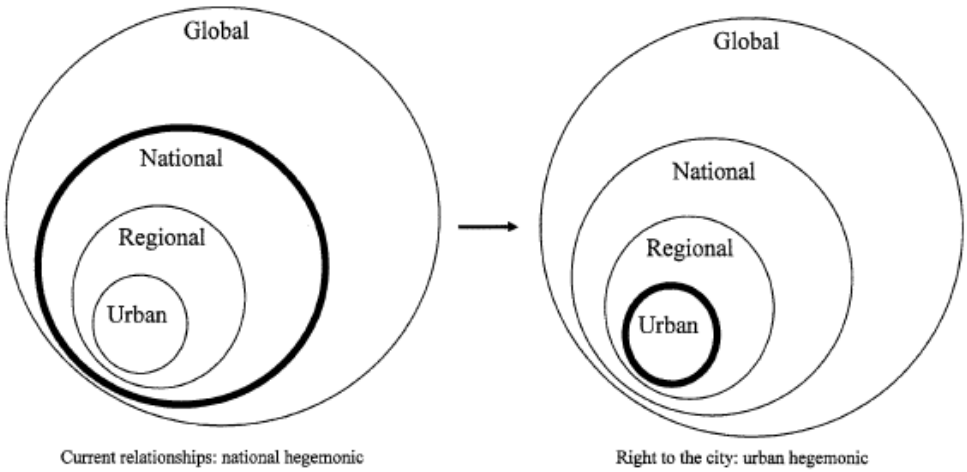
> Whereas conventional enfranchisement empowers national *citizens*, the right to the city empowers urban *inhabitants*. Under the right to the city, membership in the community of enfranchised people is not an accident of nationality or ethnicity or birth; rather it is earned by living out the routines of everyday life in the space of the city. (Purcell, 2002, p.102)

Under this criterion, whether or not someone is an inhabitant is based on place instead of politics. Narotzky uses the following poetic description of what constitutes relationships and inhabitants within space,

> "Place, on the other hand, grows from the meaningful relationships that people build with each other in the long term and from their engagement and creative production of institutions in particular locations. Place is multidimensional and the primary referent of people's lives, of the everyday practice of located sociability. Often described as a local affair, however, place is also multiscalar, as social, economic, and power relationships that produce place occur at various scales (local, regional, national, global) and simultaneously transform the operational scale of political-economic process in space. (Narotzky, 2016, p. 37)

Narotzky's view of multiscalar is in tandem with Purcell's perspective of using scalar relationships to define political membership. In figure 10.3 (below), Purcell shows the difference between the state's national hegemonic vision and the right to the city's urban hegemonic perspective. Under this perspective, whether or not someone is an inhabitant is based not on political boundaries and national identities, but on the geographic region where they live out their daily lives. Or as Purcell asserts, "Under the right to the city, other scales of community are subordinate to the urban scale community of inhabitants. One might still be part of a national community, but since one can equally inhabit the city regardless of nationality, urban inhabitance must come first in defining political community. (Purcell, 2002, p.105).

Figure 9.3 Alternative scalar relationships for defining political membership

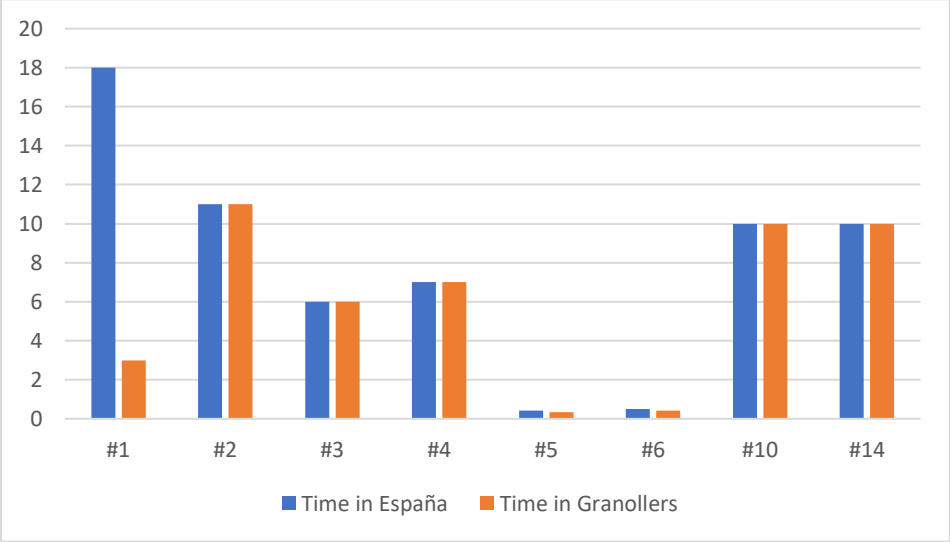


Source: (Purcell, 2002, p.106)

In both Purcell's view of inhabitants, and Narotzky's views on place, the informal recycling sector clearly meets this criteria, as daily the informal sector is living out their everyday routines within the space of the city. Their meaningful relationships with business owners, the police, the formal recycling sector and with each other is testament to their engagement and creative production, and under Lefebvre's perspective, guarantees their right to political participation.

A unique part of the chatarreros in Granollers is that not only are they not citizens, but most have only been in Spain for less than 10 years. When asked what their plans were for the future, six (75%) said that they planned on remaining in Granollers, one was interested in moving to another part of Spain, and participant #1 was interested in moving back to Morocco, his country of origin. As seen in figure 9.4, of the people participating in the study, once they came to Granollers, they stayed, and now are planning on staying.

Figure 9.4: Time in Spain and Granollers



Source: (Rendon – Author's own elaboration based on data obtained)

Although this is a small sample of people, what it does say is that the people who are working in Granollers as chatarreros are not traveling around the country, or other countries in Europe, but

instead are stationary, actively participating in their urban area. Moreover, they are building community and want to continue staying in one place and engage in the urban environment, and under Lefebvre's definition of inhabitant, have a right to the city.

Chapter 10

Conclusions

How is informality valued with regard to the environmental goals of a society?

This informal recycling phenomenon is taking place in an era of mass production and consumption that is producing more waste than has ever been created in our species history. Along with the production of waste is a parallel system of management, structure, and public administration working under multiple policies, laws, and conditions developed to minimize the environmental impacts of this consumption and optimize the economic opportunities of dealing with waste.

At the intersection of these two undercurrents (social dynamics and waste policies) a space has been created for the informal economy to flourish and create a livelihood out of collecting products seen as waste and selling them to the highest (or only) bidder. This set of activities provides minimal income for those participating in the informal recycling sector, yet their work plays an important role in the environmental benefits generated, and improves public policy goals regarding waste diversion and material recovery. At the same time this group of actors live and work outside of legal frameworks and therefore are susceptible to exploitation, precarious living and working conditions, and exposed to numerous health and safety hazards.

1. The social reality of the informal recycling sector of Catalonia

The informal recycling sector of Catalonia is made up of mostly men, whose ethnicities are a mix of Roma (Gypsy), Maghreb (northwestern Africa), and sub-Saharan African people. The people from sub-Saharan Africa are mostly from the western African countries of Senegal and Gambia, while the Roma communities are made up of established Catalan communities as well

as people from Romania and Bulgaria who have become active in waste collection in the last 10 years. The Roma recyclers tend to use vans for collection, while the Maghreb and sub-Saharan recyclers use bicycles and shopping carts. The case study for this investigation was with men mostly from Senegal and Gambia, who had migrated to Catalonia since the 2008 economic crisis in search for job opportunities and the hope of a better life.

There were many discoveries in this investigation that spanned roughly 2 ½ years. One realization from this study is that there is no colloquial language, neither in the technical or administrative realms to identify these people. From the interviews with the municipal employees, there is no common word (aside from the older word, el drapaire and occasionally chatarrero) used to designate the groups of men and women who select, collect, transport, and sell materials from the urban waste, which speaks of both a multi-faceted group of people and activities, and also the lack of coordinated attention towards this group. This investigation also established that there are similarities and differences in perspectives between el drapaire and modern-day waste pickers. Both are seen as doing a job that is of low social class but beneficial to society, and as someone who puts in long hours of hard work in order to complete his task. However, in the collective memory of many Catalonian residents, the drapaire of the past and modern day chatarreros differ in two important ways; 1) el drapaire were Catalan or at least spoke Catalan, and/or 2) the work they were doing was legally recognized, whereas today, the informal recyclers are not Catalan, nor speak Catalan, and are doing work that is currently illegal. Because of these two things, the chatarreros do not hold the same community prestige of the drapaire.

Aside from the difference between past and present, municipal waste pickers view the current waste pickers either by ethnicity, which shows a unique link to Bullard's work on

environmental racism, or based on the mode of transportation they use. It was determined that there was a clear delineation between those who are organized with a van, and those that are pushing the shopping carts around and usually working by themselves, with the prior viewed in a negative light as a type of organized mafia, and the latter in a somewhat more neutral light, as a group of people that is just trying to survive.

One of the most unique findings of this investigation is that what work the sub-Saharan immigrants ultimately end up doing is somewhat determined by their ethnic identity and connections originating in their country of origin. Aside from other forms of informal work (mostly agriculture and household projects), the two main groups seen in the public, *manteros* and *chatarreros* are separated by their ethnicity. Whereas the Wolof, who are more educated and wealthier immigrants from the cities, are generally *manteros*, the Mendinks, who are less educated and from the country are usually *chatarreros*. Whereas the non-immigrant community see them all as the same, they see themselves based on ethnic differences.

2. The spaces limiting the activities of the informal recycling sector

The daily activity of both the formal and informal waste sectors operate in parallel circuits through-out the perceived, conceived, and lived spaces of the urban core, while providing a similar service to society. Regardless, the two systems operate somewhat independent of each other, overlapping in two spaces: where they collect materials, which includes the containers, the deixalleries, and commercial door to door recovery, and where they sell their materials, which are the various locations of the recuperadoras. The formal and informal recycling sectors both cover the same territorial circuit of the city, but where the formal recycling system has a set schedule based on the economics of collection, the informal workers perform this work when no

other work is available, and their livelihood is based on the economic value of the commodities they collect. Therefore, it is hard to know the exact number of waste pickers that are working, the amount of kilos of paper collected, or the number of kilometers walked in a day, since the informal recycler's schedule can change daily, or even hourly.

Regardless of the exact number of informal recyclers, it is apparent that up until the recent decline in the cost of paper, they were having a significant impact on the volume of paper/cardboard recycled, and therefore a significant impact on the environmental goals and objectives of the municipalities listed. An important acknowledgement is that this impact is completed without the chatarreros receiving any recognition for their contributions. In fact, one of the main insights in this investigation is that in general, municipal waste management staff tend not to recognize informal recyclers as actors who are part of the waste management system, but instead see them as a social problem that has more to do with street cleanliness, immigration, and social service operations. When reaching out to municipalities to either interview them for this investigation or to share outcomes at the end of the case study, we were often directed to municipal departments which administer social services instead of departments that manage the collection of waste. Ironically, since formal recyclers view the informal recyclers this way, the actions that formal recyclers have taken to deter informal recyclers from participating in waste management, such as making materials harder to access, or confining the actions of waste pickers to specific parts of the city, further distances the municipalities from achieving their environmental goals and objectives of recycling more materials.

Another interesting finding revealed in this investigation is the limited options that the legal system has to handle accusations against the informal system. Since waste is still viewed as value-less by the general public, whether somebody takes it or not, is not seen as much of a

crime, even if in some situations in can be seen as illegal. Knowing that the police and judicial system have limited options, local governments are in a challenging situation. On one hand, they are receiving public pressure to do something about the perceived illegal actions of the informal workers, while on the other hand, they have limited options to curb the behavior of the informal recycling sector. Instead they focus their energy on limiting the informal recycling system's access to the materials, either by building physical barriers, increasing staff presence, or installing smart containers.

Due to the perceived spaces of the city where the formal and informal recycling sectors connect, as well as the conceived space of viewing the IRS as a social problem, the lived space and working conditions of the IRS are defined. The perceived spaces allow the IRS to only collect materials at collection points and drop-off points, guiding the circuit and territorial boundaries of their work, and pushing them to develop relationships with specific employers. Because of the conceived ideas of the municipalities, the IRS are limited to pre-determined spaces of a city in order to conduct their work, which also defines where the tools of their trade are accessed and stored. Collectively, these spaces determine the type and volume of materials collected, which in turn determines the distance the IRS travel in a day and the amount of money they earn at the end of each day

The lived space is also where environmental injustice is most noticeable, as the exposure to risk factors of the IRS far exceeds the formal recycling system. To avoid direct contact with waste, many of the formal recycling employees operate machinery, and depending on the position, might never physically touch waste at all. As well, formal recycling employees are provided training and access to protective clothing/equipment, which are not provided to the informal recycling sector. Furthermore, though the composition of the waste is the same, the

formal recycling sector has limited direct contact with it, while the informal recycling sector has direct contact throughout the day, greatly elevating their exposure to environmental toxins and putting their health at risk.

3. The commons shaping who can access and benefit from waste in Catalonia

The language of the municipal employees demonstrates that some of them view the actions of the IRS as illegal, and that the IRS are committing crimes by taking something that is not theirs. Although not all of the municipal employees view it this way, it asks a bigger question: who owns waste? From the qualitative data collected, it seems that perspectives on this question vary depending on where the material is collected, and who's property that physical space belongs to. The physical spaces where IRS come in contact with materials fall into three types of property: open access, private, or state ownership. However, how the material is managed, and arguably the material itself, falls into the realm of communal property. The main areas of contention are within deixalleries and within surface containers. Though most municipal employees view taking material from either of these state-owned spaces as illegal, if the person taking the material is doing so for survival, most employees do not believe it is a big concern. Due to this perspective, in the past ten years significant actions on the part of the state have been used to alter accessibility of the materials in both deixalleries and inside surface containers. If continuing on this trajectory, it would appear that the goal of the state is to make both deixalleries and surface containers completely inaccessible to the informal recycling sector.

This timeframe that the investigation took place (early 2018 to late 2019) offered a unique perspective to see how global market prices can affect local waste pickers. By the time the follow-up interviews were conducted (October 2019), the price of paper/cardboard was so

low that almost all of the chatarreros had entirely stopped picking it up from the streets. Those that remained claimed that in the absence of other sources of income, they still had no choice but to continue collecting cardboard. The timing of this investigation allowed a first-hand look at the global connection of the waste trade, and the impact that it can have on local populations.

The global crash of paper/cardboard commodity prices also exposed a unique co-dependent relationship between the formal and informal systems. While the informal system is dependent on the formal system in order to access materials from the containers and deixalleries, the presence of the informal system keeps the collection costs for the municipalities low. In fact, the main concern now for city employees is that since they moved part of the workforce responsible for collecting paper and commercial cardboard to other areas when paper/cardboard prices were high, now that prices have gone down, they will have to relocate those positions, thus costing the city more money for collection.

From a theoretical academic perspective, Lefebvre's vision of urban inhabitance fits perfectly with the chatarrero experience. Since "under the right to the city, membership in the community of enfranchised people is not an accident of nationality or ethnicity or birth; rather it is earned by living out the routines of everyday life in the space of the city" (Purcell, 2002, p.102). In this context, the chatarreros qualify as members of the enfranchised people due to their everyday routines of life, and although they do not have legal citizenship papers, they are members of the community, known to shopkeepers, police, and formal recyclers, and because of these connections, are part of the community. However, I see the idea of the "right to the city" as a theoretical academic perspective, as the political reality that the chatarreros currently face, sees it very differently.

4. Future investigations and policy suggestions

Though this investigation now provides a baseline of information on the informal recycling sector of Catalonia, it only touches the surface of research that could be done. Four specific studies that could be undertaken are; 1) a metals collection inventory, 2) an environmental assessment of the materials collected, 3) a study on the impact of smart containers on the informal recycling sector, and 4) a case study in a different city in Catalonia that contains different variables (such as the absence of recuperadoras) than Granollers. The first two suggestions would provide a clearer understanding of the impact that the IRS makes to the environmental goals and objectives of Catalonia's formal recycling system. A quantitative study on the volumes and types of metal collected by the informal recycling sector, as well as their circuit, would provide additional information to ascertain the full impact their work has on the formal recycling sector. As well, an environmental assessment of the work the IRS performs would provide specific numbers demonstrating their contribution to the global challenge of waste, and generate a sense of pride in the work that they perform. The third suggestion would reveal the impact that state policies have on the lives of their community's most vulnerable inhabitants, while the final suggestion would challenge the assumptions of space made in this investigation, and may lead to insights that were overlooked, or inconsistent within this body of work.

A final element to this investigation is the policy suggestions concerning the informal recycling sector in Catalonia. These policy suggestions are viewed through Lefebvre's concept of inhabitant, and the acknowledgement that the IRS are inhabiting space in the city and therefore their work should be recognized. As mentioned, there is limited academic work on waste pickers in the global north, especially regarding the phenomenon being experienced in

Catalonia. However, there is an ample amount of research on the IRS in the global south and some work in the global north, especially in countries either not in the core or just outside of the European Union (Bulgaria, Romania, Turkey, Tunisia, etc..) which can be drawn on for policy creation, as well as information collected from this investigation. It is important to note that the majority of waste pickers I interacted with were not legal citizens of Spain, and when I asked them what the government could do that would be most helpful for them, they all stated providing citizenship. That said, it is understandable that the issue of citizenship is outside the abilities of the individual cities in Catalonia, however, that does not mean that municipalities should be apathetic, nor that they cannot recognize the IRS as inhabitants of their jurisdictions.

Based on academic research (Velis, 2012; Scheinberg, et al, 2016; Apacarna, 2017), one of the first steps that municipalities can take is to formally recognize the work of the IRS as part of the waste management system, and acknowledge the environmental benefits that they offer to the community. Though largely symbolic, this act would place the work of the IRS in its correct location, and provide a foundation to expand strategies while creating new goals for the waste management system. From an environmental justice perspective, it would recognize the socio-environmental disadvantages of a distinct group within the Catalonia social structure (Herrero, 2017). A second suggestion would be to perform an environmental assessment of the work of the informal recycling sector and then publicize both the environmental benefits of their work, as well as the cost savings to the city through avoided collection and disposal. This data can be very useful to help Catalonia achieve the recycling goals established by the European directives. As mentioned above, this assessment would provide an increased level of integrity to the work of the IRS, and change social perceptions of the IRS from scavengers to environmental stewards (Gutberlet, 2010). Based on conversations with municipal employees during this investigation,

the final policy suggestion is for municipalities to create a flexible system that assumes informal recyclers will participate in collections when the price of paper/cardboard is high, and that their numbers will be reduced when the price of paper/cardboard decreases. Having a flexible system provides a tool for municipalities in regard to staffing and collection management, as well as the budgeting that goes along with it. All three of these suggestions encourage the inclusion/acknowledgement of the IRS' existence by incorporating Lefebvre's idea of inhabitant, since whether a member of a community is legally recognized or not, they are inhabiting space in the community and therefore have a right to it.

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Appendix

Included are the following:

- Granollers waste questionnaire
- Interview guide for the in-depth interviews (Preguntas para Los Recicladores)
- Interview guide for municipal employees (Guion entrevista expertos)

Transcripts are not provided in order to better protect anonymity.

Granollers Waste Questionnaire

Numero_____ Fecha_____

Horas trabajadas (esta semana): _____

Kilómetros andados (esta semana): _____

Kilos de Material en total (esta semana) _____ _____€ Euros (esta semana)

- Papel/Cartón _____
- Metal _____
- Otros _____

¿Recuerdas a qué precio te han pagado el kg de papel cartón? _____

¿Recuerdas a qué precio te han pagado el kg de metal? _____

Breve descripción del itinerario: (es el mismo cada día? Sitios clave para recoger/descargar materiales? Puntos clave para parar a descansar?)

Sitio	Hora
1. Inicio	
2.	
3.	
4.	
5.	
6.	
7.	

8.	
9. Final de la ruta	

¿Qué partes de este itinerario has hecho andando y cuáles en vehículos?

_____ (en caso de vehículos, ¿de qué tipo (tren, bus, coche, furgoneta, etc.)?

¿Dónde has vendido los materiales (llorenç, Ferrales Batlle, Otro)? _____

¿Si otro, donde? _____

¿Has sufrido alguna lesión esta semana?

_____

Descripción: tipo de lesión, gravedad

_____

Estrategias: prevención, cura, etc.

_____

¿Has sufrido algún dolor esta semana?

_____

Descripción: musculoesquelético (manos, codos, rodilla, etc.), dolor de espalda, etc.

_____

Estrategias: prevención, cura, terapia, etc.

_____

¿Has sufrido algún tipo de malestar esta semana?

_____

Descripción: frío, calor, ruido, vibraciones, falta de iluminación para hacer el trabajo, etc.

_____

Estrategias: prevención, cura, otras

_____

¿Has visitado algún médico esta semana? _____

¿Con cuánta gente has podido hablar ayer (y esta semana) mientras hacías tu trabajo? ____ / _____

Dónde (aprox).? _____

¿Has ganado lo suficiente para comer esta semana? _____

¿Has ganado lo suficiente para pagar alojamiento esta semana? _____

¿Has tenido algún problema con alguien en la calle?

_____

Preguntas para Los Recicladores

Demografía:

Edad:
Lugar de nacimiento / nacionalidad / país de origen:
Nivel de Educación:
Idiomas hablados:

Fondo:

¿Casado? Si es así, ubicación de pareja.

¿Hijos? Si es así, ubicación de los hijos.

¿Por qué salió Ud del país de origen?

¿Cuánto tiempo lleva en España?

¿Cuánto tiempo lleva en Granollers? ¿Por qué ha eligido Granollers?

Salud / medios de subsistencia:

¿Cómo se enteró de este trabajo?

¿Es esta actividad su principal fuente de ingresos? Si no, ¿qué más hace?

¿Qué le gusta y qué no le gusta de su trabajo?

¿Cómo pasa su tiempo cuando no está trabajando?

Sistema de colección / flujo de material:

¿Dónde coge la mayoría de los materiales?

(Opciones de ubicaciones - contenedores de basura, tiendas, deixalleria)

¿Qué otras cosas coge de las contenedores además de los zapatos y la ropa?

¿Tiene lugares regulares de recogida de materiales?

Política:

¿Cuántos recicladores cree que hay en Granollers?

¿Hay más recicladores ahora que cuando comenzó a hacerlo y cree que este # aumentará o disminuirá?

¿Cree que lo que está haciendo ayuda al planeta?

¿Piensa seguir viviendo en Granollers/España?

Guion entrevista expertos

Datos municipales:

Nombre de la ciudad _____

Extensión _____

Población _____

Información de la entrevista:

Nombre: _____

Educación: _____

Posición administrativa: _____

Relación con el manejo de residuos: _____

1) Descripción del Sistema de manejo de residuos de la ciudad:

Quién maneja el sistema de residuos en su zona de influencia? (consorcios, municipio, otros participantes)

Qué tipo de Sistema de manejo de residuos se usan en la ciudad (Puerta a puerta, separación, puntos verdes), describa quién recoge, dónde es enviado y cómo es procesado, en particular papel, cartón y metal.

Hay fábricas de papel, metal cerca? Hay intermediarios y qué tipo de intermediarios hay en el territorio? (recuperadores, compradores de material)

2) Descripción de los chatarreros locales:

Cuántos chatarreros hay en tu zona de influencia? Podría confirmar si hay datos después de la entrevista?

Cuántos y cuáles tipos de chatarreros hay en su área de influencia? Sabe si están especializados en diferentes tipos de material o zonas?

Cuándo aparecieron los chatarreros en su zona? Breve historia de los colectivos.

3) Percepciones:

Cómo ha evolucionado el fenómeno de los chatarreros a lo largo del tiempo? Cuáles son los principales elementos que conocemos de ellos, puntos, eventos, o cambios que permitan entender mejor el fenómeno?

Cuál cree que es la percepción de los vecinos del municipio sobre los chatarreros?

Cuáles son los aspectos negativos y positivos de los chatarreros en su zona?

4) Intermediarios (recuperadores):

Hay recuperadores de papel o metal en su área de influencia o cerca? Cuántos?

Cuál es su rol dentro del Sistema de manejo de residuos?

Cuál es su relación con el Sistema de manejo de residuos? (colaboración, conflictos, en qué sentido?)

Cree que si los recuperadores salen de la ciudad los chatarreros también desaparecerían?

5) Política pública:

Ha existido alguna política pública relacionada con los chatarreros en la ciudad? (puede ser en otros ámbitos: medioambiente, seguridad-policial, políticas económicas, etc) Han existido políticas a otros niveles, Generalidad, provincial, regional, estatal, europea?

Si han existido, han sido efectivas?

Si no han existido, qué políticas públicas conoce o cree que son necesarias para el mejoramiento del Sistema?

Y qué políticas podrían ayudar a los chatarreros?

Conoce usted políticas llevadas a cabo en otros ayuntamientos o regiones? (estados)

Apoyaría políticas públicas para la inclusión de los chatarreros? Qué tipo de políticas apoyaría y cuáles no? y si no, por qué no?

Usted cree que los chatarreros y el ayuntamiento pueden trabajar en conjunto en la recolección? Y si es así, qué tipo de colaboración podría funcionar?

Cree que aquellos chatarreros que son legales podrían convertirse en autónomos con una tarifa reducida?

6) Futuro:

Cree que el número de chatarreros aumentará en el futuro o disminuirá? Por qué?

Qué tipo de factores podrían influir con el futuro del fenómeno de los chatarreros? Cree que el fenómeno de los chatarreros cambiará en algún sentido en el futuro? Por qué?

Tiene la prohibición de importación de China efecto en las ventas de materiales? Cómo cree que el Mercado global afectará su Sistema de manejo de residuos en el futuro? Y cuál cree que será el impacto para los chatarreros?

Adicional:

Cree que los cargos públicos electos del ayuntamiento darían soporte público al reconocimiento o contribución de los chatarreros en el Sistema de manejo de residuos? Por qué?

Cree que los comerciantes locales darían su apoyo a la inclusión de los chatarreros en el Sistema de manejo de residuos? Y los recuperadores? Y los mismos chatarreros?