Solid waste recycling in the Netherlands: ethnography of the circular economy

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Abstract

The theme of this article is the recycling of solid waste as a dynamic process for the circular economy. We approach classic and recent studies that consider the contradictions in the industrial and so-called modern world regarding the exhaustion of abusive consumption practices to the environment. We present an ethnographic study developed in the Netherlands, focusing on a case study in Zaandam in 2019 and a study with recycling companies in 2021. In our ethnography with companies, we started with questions about the business logic of these industries, the origin of their materials, and the destination of their products. We also covered how residents of the Netherlands recycle and how they perceive recycling policies.
Key words: circular economy, recycling, ethnography, garbage, Netherlands.

e20904
http://doi.org/10.1590/1809-43412023v20d904

Reciclagem de Resíduos Sólidos nos Paises Baixos: etnografia da economia circular

Resumo

O presente artigo se dedica à análise da reciclagem de resíduos sólidos como um processo dinâmico integrado na economia circular. Exploramos tanto estudos clássicos quanto pesquisas recentes que enfocam as contradições do mundo industrial moderno em relação ao esgotamento de práticas de consumo prejudiciais ao meio ambiente. Apresentamos os resultados de uma pesquisa etnográfica realizada na Holanda, concentrando-nos em um estudo de caso em Zaandam, conduzido em 2019, e em uma investigação junto a empresas de reciclagem, realizada em 2021. Em nossa abordagem etnográfica com as empresas, inicialmente investigamos questões relacionadas à lógica de negócios dessas indústrias, a origem de seus materiais e o destino de seus produtos. Além disso, examinamos o processo de reciclagem adotado pelos residentes dos Países Baixos e suas percepções em relação às políticas de reciclagem em vigor.
Palavras-chave: economia circular, reciclagem, etnografia, lixo, Holanda.

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Inconvenient **theories**

Our purpose in this text was to think about the circular economy and the recycling of solid waste in its practice in the Netherlands. The account and analysis of this ethnographic experience should be accompanied by the visualization of the visual narrative that is presented in this dossier under the title "A Photographic Essay on Solid Waste Recycling: Street Ethnography and Innovative Experiences in the Netherlands".

Few would doubt today that the reuse of waste is a central problem worldwide. But it has already been considered a dangerous topic for the human sciences. Freud warned us when he said that "Science has not been allowed to concern itself with these proscribed aspects of human life, so that anyone who studies these things will be considered as just a little less inconvenient than one who does really inconvenient things" (Freud, 1981: 33).

Let us make a brief theoretical *détour*. The second half of the last century was fruitful in social movements and theories of "inconvenients" that aimed to provide emergency responses to the dramatic panorama of environmental conditions at a planetary level. In the wave of dialectical theories, environmental laws emerged to respond to the immense contradictory process of the effects of the capitalist world and consumption and the clamor for environmental and social justice, even if timid and incipient.

Studies proliferate on the harmful effects of accelerated economic development and the wear and tear of natural resources. New areas of study, such as ecology and the environment, have boosted the concept of urgency in nature conservation. The fit between development and environmental protection resulted in "sustainable development" (Dumont, 1973), highlighting the contradictory process of the global evolution of production modes and consumption practices.

If we were to make a genealogy of those who were concerned with ecology, with the cleaning of our home in the world, perhaps we would have to go back to Jean-Jacques Rousseau the walking philosopher; to John Muir, the pioneer of natural parks and the protection of wild places; to Rachel Carson, the marine biologist and conservationist who announced the pesticide disaster, whose influential book *Silent Spring* (1962) is credited with advancing the global environmental movement; to the Australian researchers Bill Mollison and David Holmgren who coined the word "permaculture" in the 1970s by merging the terms "permanent" and "agriculture"; to André Gorz, the Austrian and French philosopher-journalist so concerned with political ecology; and to get to Isabel Stengers and her proposition of Cosmopolitics, a key aspect of the "progressive composition of a common world" in which the non-human and the human are intimately entangled; to Donna Haraway who criticizes anthropocentrism and emphasizes the self-organizing powers of non-human processes; to the geochemist Paul Crutzen and the biologist Eugene Stormer who proposed to baptize "Anthropocene" (from the ancient Greek anthropos meaning "man", and scene meaning "new") or Bruno Latour, thinker of the Anthropocene, de la "Grande Acceleration" , with his idea of habitability.

In Brazil, we have to go back to the visionary José Lutzemberger, who already in the 1970s warned of the danger of gases affecting the ozone layer; to Marina Silva, the protectress of forests; to Chico Mendes, killed for defending the Amazon; and so many indigenous people – for instance, to the Mayans notion of *buen viver*, which nowadays seems more critical than ever and has been employed by many contemporary thinkers of the "modern" world.

Perhaps it is Georg Simmel's concept of the tragedy of culture that best synthesizes the strength of the contradictions in the "modern" world, as inherent to culture and society in their complex ways of existing that depend on time. In this era of reciprocity, on different scales, consumption is exacerbated as a global phenomenon, "not necessarily good or bad, but intrinsically contradictory" (Miller, 2013: 96). According to Simmel's theory of forms, individuals create products and their forms, of multiple natures, forms that escape and abandon their creator for the enjoyment of consumers. The product surpasses and can dissolve the life that generated it, even losing the principle of life: the tragedy then consists in the attitude of the living to produce the non-living" (Freund, 1992: 221-222).

We can now argue about the industrial products that generated pollution, depletion, and destruction of life, promoting "planetary agony" (Morin, 1997: 60). The challenge for the modern individual to overcome the tragedy of the production of non-life is to generate life without forms or, we can suggest, a world where forms, products, are trans-formed, trans-figured, and return to the life cycle. In fact, Freund understands that tragedy is no longer in question. Still, the crisis that contradictorily generates new forms of life, understanding the crisis of modern culture as the will to overcome the tragedy inherent in the culture, "c'est-à-dire son essence qui reside dans sa faculté de produire en tant que vie des formes non-vivantes" (Freund, 1992: 222). We can now convey the theme of garbage as a lifeless product, rejected in the consumption cycle and reoriented as an asset to be recycled within the scope of the global ecological crisis. Solid waste, as a non-perishable matter and losing its original functionality, is promoted to new forms within the scope of environmental policies, reintegrated into the social fabric through the metamorphosis of recycling, and reconfigured in new development models such as the circular economy.

We are thus articulating the theme of sustainable development with the circular economy in the anthropological field. Garbage, meanwhile, has interested anthropology to the extent that the environmental issue has become relevant in the last century. One of the important manifestations in the 1980s came with the publication of *Risk and Culture* by Mary Douglas and Aaron Wildavsky (1983), arguing about the risks in modernity as a social process and the fears related to vulnerability. As Julia Guivant (1998) rightly observes, one of the merits of this pioneering work is to have brought the theme of risk to the scope of the political and moral debate.

Placed under the spotlight, the risks of environmental degradation are taken seriously within anthropo-cosmological paradigms, as in the work of Edgar Morin, which relates the human phenomenon intrinsically related to nature from the biological and ecological perspective. Morin proposes the paradigm of complexity in the face of the threat of destruction of life in local ecosystems through the degradation of the biosphere and the death of planetary nature. It is a reform of the structures of consciousness itself (Morin, 1980) incorporating, to reflective development, the anthropo-social dimension (Morin, 1973) based on the notion of self-eco-organization: "it is a paradigm that inserts an order in another order and so on, in a reciprocal and recursive way" (Morin, 1997: 63). The environment is no longer restricted solely to the determinisms and conditioning of the environment, nor to risks and devastation, but also as an organization that "like any complex organization, suffers, behaves and produces disorder and order", an eco-organization (Morin, 1980: 19). Pena-Vega (2003) adds: "therefore, permanent disorganization/reorganization is a constitutive character of living organization." In this sense, there is a convergence of complexity theory with Maturana, Varela,

and Uribe's theory of *autopoièsis* on self-production in a critique of "industrial subjectivity, manufactured and shaped by capitalism" (Pena-Vega, 2003: 87)[1].

It is a question of enunciating the hologramatic principle in ecological thinking, in which the organization of the outside is also inside; the organization of the macrocosm is also in the microcosm; the part is in the whole and the whole in the part (Morin,1997: 64). A principle of dynamic retroactivity that can also be operationalized with Gregory Bateson's theory of schismogenesis (1977), allowing us to recognize environmental problems and understand how the involved social actors act in this process.

In this scenario, new sustainable development policies emerge, such as the debate on climate risk and the concern with excessive waste, especially in Europe. The circular economy is therefore conceived as a policy of responsibility designed from a critical perspective on the depletion of the biosphere, as pointed out by theories of the Anthropocene that authors such as Bruno Latour address on biopolitics. We enter ethical and moral arguments about the limits a consumer society operates and its responsibility for sustainability. For Latour (2022):

> "the concept of Anthropocene introduces us to a third feature that has the potential to subvert the whole game: to claim that human agency has become the main geological force shaping the face of the earth, is to immediately raise the question of 'responsibility', or as Donna Haraway is fond of saying, 'response ability'."

The appreciation of the circulation of objects, central to material culture, is resumed under a dialectical view, conceiving that "the whole system of things, with its internal order, makes us the people that we are." (Miller, 2013: 83). In his study *Trecos, troços e coisas, estudos antropológicos sobre a cultura material*, anthropological studies on material culture, Miller, following the influence of Bourdieu, relate consumption to habitus. On the other hand, he follows Hegel's phenomenology. He takes his concept of objectification in which he understands that humanity develops ways in which it comes to apprehend itself and to develop a world following its perception of reason. However, each of these developments changes our consciousness and allows us to conceive further developments (Miller, 2013: 88). In our relationship with objects, the produced thing can develop its own autonomous interests (p. 91). In this way, products can generate harmful conditions for humanity, such as garbage accumulation and pollution. Still, they can simply become part of who we are and, in this sense, carry a beneficial and friendly value (p. 92). Assunção (2016: 108-109) shows that Miller does not necessarily see consumption as alienating, as "it can be a tool that people use to fight alienation and deny capitalism in their daily practices", and it is in this sense that Miller conceives a positive relationship in a sustainability policy that does not deny the existence of consumer goods. After all, as Mary Douglas and Baron Isherwood had already shown in *O Mundo dos Bens*, consumption is a cultural action that constitutes our reality, present in our daily lives. It plays a structuring role in our identities, regulating social relations, and defining cultural maps. (Douglas and Isherwood, 2006: ch. 3).

Garbage is materially refuted for its value for domestic or public use (Rial 2016). But within a new world order, waste is reconfigured into new reuse and recycling values. Solid waste, as objects, comes to life in circulation motivated by a renewed economy.

1 Autopoièsis conceives a biology of knowing, "a way of seeing the phenomenology of living beings in general and human beings in particular". In other words, it is an "explanation of what living is, and, at the same time, an explanation of the phenomenology observed in the constant becoming of living beings in the domain of their existence" (Pena-Vega, 2003: 87).

Anthropology of the Circular Economy

Environmental degradation is the priority theme in political projects in the face of sustainability programs. Convergent with the "brown agenda", the circular economy implies long-term systemic transformations with productivity on the one hand and social and environmental benefits on the other.

What does the circular economy consist of ? By circular economy, we mean here:

> "an economy that uses a systems-focused approach and involves industrial processes and economic activities that are restorative. It is a change to the model in which resources are mined, made into products, and then become waste. A circular economy recaptures 'waste' as a resource to manufacture new materials and products." (Save Our Seas, 2022).

The challenge of ethnographing the transitional processes in obtaining clean energy involved paying attention to investments of profitable companies and private households searching for more stability, security, and well-being. In the original research project that resulted in the study missions in Netherlands and Brazil, the theme of politics was central, focusing on the relationships between income, pollution, and environmental behavior involving recycling and reusing waste. Our questions turned to the observation and analysis of advances in the clean environmental policy and the gains surrounding the management of the recycling market, which corresponds to the implementation of the *brown agenda*[2] that regularizes environmental protection (Rial and Colombijn, 2016). The Brazilian researchers involved in the project developed their research in this bilateral perspective, proposing ethnography in Brazil and Netherlands[3]. This opportunity allowed us to observe and reflect on a lived context and its waste management policy, which we aim to report here.

Solid waste collection, such as those studied by Freek Colombijn and Martina Morbidini (2016), can involve garbage pickers organized in cooperatives and acts to reduce poverty and protect the environment (2016: 43). However, it is also important to inquire about the policy conducted by the companies that recycle.

We followed in on our ethnographic adventure in the Netherlands, the suggestions of Freek Colombijn. The Dutch anthropologist who researches recycling plastics and other waste recycling companies argues that contrary to the significant number of studies on recycling, especially on the work of garbage pickers, few studies deal with business companies. In Colombijn's case study, the research universe is located in Indonesia. He asks about: 1) what is the business logic of these industries? 2) Where do their materials come from? 3) How do the materials used by these industries affect the production process? 4) What kind of products do they manufacture? 5) To whom do they sell their products? (Colombijn, 2020.)

We were interested in researching recycling companies, so this script was appropriate with some particularities. The fieldwork was conducted in the Netherlands in December 2021 with recycling companies, public institutions, domestic units, and collection points (afvalbrengstations). We also report here our case study in Zaandam, developed in December 2019, where we delve into the daily life of the small town in the north of Amsterdam. The ethnography in Zaandam aimed to answer questions about sociotechnical innovations (Latour, 2005) in different generations and the consolidation of recyclable material processing industries that seek to insert themselves into a circular economy.

With a late entry into the mandatory domestic recycling policy aiming at sustainable development, the Netherlands is currently one of the most important reference centers for policies for treating organic and solid waste, but it is experiencing severe issues.

2 The "brown agenda" refers to priorities and measures aimed at avoiding, reducing, or controlling polluting activities.

3 The Dutch researchers extended their studies to regions in Asia, mainly in Indonesia, under the coordination of Freek Colombijn (VU, Amsterdam).

The Netherlands as a circular economy reference in the "European recycling player"

Sustainability policies can be considered a visiting card of the Netherlands. We witnessed scenes in the routine of the city of Amsterdam, where children on a boat, carrying lifesaving bags, held a collector in their hand (net or strainer), with which they "fished" for the garbage that floated in the canal. Adults in guidance vests accompanied them. There was not much waste at first glance, but there were a few bottles, cans, plastic bags, and cups that the young solid waste fishermen collected. The inscription on the vessel announced that it belonged to the *Plastic Whale* institution.

Visiting the *Plastic Whale* website[4] is to find the leitmotiv of the NGO: "We Collect, We Create, We Educate". As it said, it aimed at information and training in recycling and construction projects with recycled materials. *Plastic Whale* is not alone. NGOs such as *Greenpeace* and *Ocean Cleanup*[5] also work in the Netherlands to collect plastic in the oceans, in addition to campaigning for the closure of sources of plastic pollution. The political action of these NGOs also focuses on creating marine reserves in international waters based on the Global Ocean Treaty.

Plastic collection in the Netherlands (and everywhere else) has become one of the great undertakings of the circular economy. It seeks to remove waste from the garbage category for the economical use circuit, reusing or promoting new uses, avoiding the excess production of plastics. Europe's goal[6] is to ban the production of plastics.

In the Netherlands, we observe government programs such as the *Van Afval Naar Grondstof*, the VANG[7], which means "from waste to raw material". VANG – Domestic Waste (HHA) is a policy program designed to help municipalities take the necessary steps toward a circular economy. The goal for the whole of the Netherlands is to be fully circular by 2050. The economic investment in waste separation and the quality of sub-flows is large. The VANG-HHA program covers the period 2015-2025. The ambition was to achieve 75% of waste separation and 100Kg waste per inhabitant by 2020. This objective was not achieved. However, municipalities have taken significant steps to improve the separation of household waste.

A journey through the Dutch circular economy

The field trip to the ethnography of Dutch companies and entrepreneurs was scheduled for 2020 under the Capes/Nuffic project[8]. Due to the pandemic, the mission was transferred to 2021. Respecting vaccination protocols and the use of masks, our move from Brazil to the Netherlands took place in early December. The internship-work in the Netherlands, as on other occasions, began with a meeting between the project coordinators at the Vrije Universiteit Amsterdam. Next, we started the circuit of visits to get to know more closely previously mapped solid waste recycling companies that are part of a circular economy policy. Initially, we dedicated ourselves to visiting companies in Holland, in the North/West of the Netherlands (Zaandam, Rotterdam, Leiden, Amsterdam), leaving the last week to visit companies in the Center (Eindhoven) and South before returning to the North (Groening). From the outset, it was clear to us that, in addition to companies, we should seek to interview residents of private homes to learn about their recycling, consumption, disposal practices, and other domestic activities such as composting and gardening.

4 https://plasticwhale.com/ Consulted on 23 August 2019.

5 http://www.theoceancleanup.com Consulted 8 December 2022

6 https://www.dw.com/pt-br/o-que-muda-na-ue-com-a-proibição-dos-artigos-de-plástico/a-58146884. Consulted 8 December 2022.

7 https://vang-hha.nl/programma/ Consulted 10 dezembro 2021

8 Project "Circular economy: garbage/solid waste anthropologies and innovative experiences between Holland and Brazil", between the Federal University of Santa Catarina, Florianópolis (SC), Brazil and VU Vrij University Amsterdam, Holland coordinated by Carmen Rial and Freek Colombijn. Researchers from other institutions at the Federal University of Rio Grande do Sul (Cornelia Eckert), the Federal University of Latin American Integration (Barbara Arisi), UNIVALE (Margarete Nunes), and the Universidad de la República (Luciano Jahnecka) participated in it.

We settled in Abbenes[9], in the residence of Judith van de Meerendonk who would become an important interlocutor. From there, we visited companies dedicated to recycling plastics that reverted into gas and construction products. These companies recover sorted paper by manufacturing new packaging and recycling bio-waste for agronomic recovery, but also green waste transformed into agricultural correctives to feed the soil.

Recommended by Judith and her husband, we started our investigation at a nearby company, *Recycling NL Brantjes*. Despite the kindness at the reception, we did not obtain information about the company's operation, which, we observed, consists of receiving solid waste collection trucks. The traffic of trucks was heavy and dangerous in the place. Right at the entrance, the heavy trucks parked at the scale for weighing and proceeded to dispatch waste in large pavilions. According to the flyers we were given at the office, the company's priority was the recycling service for files, papers, clothes, computers, accessories, etc. The folders stated that a company provided high-quality recycling of shredded paper and other waste materials. What immediately caught our attention was the large presence of Renewi trucks (a private garbage collection and processing company), which we already knew from the field research in 2019 in the Netherlands, as we will report later.

In Rotterdam[10], we went to visit the small company *GroenCollect*. The company's motto can be seen on a board at the entrance: "from bread to fuel, from vegetables to raw materials". We explained the reason for the contact and asked for an interview with the firm's director. The businessman received us and asked for some time to prepare. While we were waiting, it was possible to photograph the courtyard and the office's interior. Soon we were invited for coffee in the meeting room and to proceed with the interview.

The owner of *GroenCollect*, 40 years old, decided to create the company to process methane gas after having had an experience in Vietnam where he went to gather data to write a paper for the Graduation course. However, installing a methane gas processor would require a very high loan, and no bank would give it; he was advised to start with another type of recycling. Now, he told us he is doing well and does not think about changing.

In the room where he received us, there were pictures with sayings such as "with garbage, we heat buildings". A young employee who was having lunch when we arrived brought the coffee. The CEO introduced us to his employee as a Portuguese speaker, an immigrant from Cape Verde. We took a picture with him on the way out and exchanged a few words in Portuguese.

The company's objective, reported the CEO, is to invest in food waste - they collect stale bread, vegetables, fruits, coffee grounds, and food scraps to be transformed into biogas. Other edible residues, such as mushrooms, and oysters, can be transformed into bioplastics. They only recycle waste from restaurants and small businesses as it is forbidden to collect waste from private homes. They carry out the gathers with small electric trucks to reduce the environmental impact. But they collect for themselves and sell to other companies that work with the same infrastructure, allowing an efficient flow of waste. He reported that *GroenCollect* operates in several Dutch cities and tends to expand. For our interviewee, reuse in the human food chain, reverting to material or energy, is a vision of the future.

Our fieldwork was executed during the pandemic. We wore a mask all the time, but the CEOs and employees no longer wore it, explaining that non-use was allowed for those vaccinated in the Netherlands. We thanked him for the interview and followed the itinerary to take advantage of the afternoon shift.

In Rotterdam, we researched two other recycling companies that invest in the reuse of plastics. Both occupy warehouses in the port area. At *UrbanMinigCorp*, we met an employee who showed us some products that result from the reuse of plastics, little colorful smithereens.

9 https://www.google.com/maps/@52.2324561,4.5664117,13z

10 https://www.google.com.br/maps/@51.927903,4.3507457,11z

The many tons of plastic to be reused occupied most of the warehouse in huge containers. At the neighboring company, *Plasticiet*, plastic waste filled a large open-air tank. The plastic smell was strong. An employee dressed in overalls received us and directed us to a container rearranged to be an office. One of the young CEOs agreed to receive us and grant an interview. So, comfortably seated and permeated by the strong smell of plastics, the businessman told us about the objectives and functioning of the company that works with polystyrene for shredding and thermal recycling. On the shelf were exposed pieces of recycled solid surface panels and large tiles of different colors. The CEO explained that their proposal converges with the circular economy of creating a post-waste world. He explained that all products result from 100% recycled waste. From refrigerator scrap or post-production leftovers, they produce very rigid plates that imitate nature, such as granite, stones, etc., and are suitable for use in construction. Other, more colorful signs result from recycling white refrigerators and Belgian household waste. And finally, a board with chocolate color results from the transformation of molds from an old chocolate factory. Showing proudly the plastic plates that resulted from recycling, he clarified the different possible uses. The products resulted can also, in turn, be recycled for other uses.

With the motto "Reduce - recycle - reuse - repeat", the company invests in producing recycled plastics with bold designs collaborating in "sustainable ways of living and building". The staff employs designers, architects, and artists committed to sustainable projects – some of them were present in the small space of the container, sharing the long bench with us. Interestingly, despite sharing the same street, this company's owner was unaware of the existence of the first company we visited there. All those interviewed at these companies were very young, around 25 or so.

Once these three visits were successful, we continued in the following days. On the way to Utrecht in Amersfoort, we stopped at the address we had for a building material reuse company. We found a very elegant house, two floors. But on the intercom, no one answered. A young man who spoke English with difficulty opened the door for us, perhaps seeing through the window that we were there. Very kind and friendly, he told us that what we were looking for was located upstairs. A gentleman came out of another carpeted room (we later found out to be a law office) and had a few words with him, and we understood that he told him to accompany us upstairs, as he did. He knocked, tried to open one of the white doors, and ended up saying there was really no one there.

In Woudenberg (East of Utrecht), it was possible to get to know a micro-enterprise, *DutchFiets*, with a concrete proposal of a circular economy with the production of bicycles from recyclable products. A company of two young brothers who are partners, sons of a window cleaner, and very suspicious of our presence. Although we already knew some information on the project's website, they did not want to prolong the interview. We could only observe the bike in the testing phase and the machinery used to manufacture it. At the time, we wrote in the diary:

> "We found the place thanks to the car's navigation system, which has been the most efficient search tool, along with the all-purpose iPhone. A Van with the company's name and the sign on the door ensured that it was the place. A UPC (mail delivery company) truck pulled up in front and began unloading large packages. We entered the open door and saw that there were some colorful bicycles in the room to the right of the entrance, whose door was also ajar. We went in and filmed a machine that was turning (it looked more like a large dough drainer than an industrial machine). All too fast. Down the narrow staircase – the whole place was very narrow, normal in houses in the Netherlands – a young man who looked more like a boy to us descended. Benjamim, 25 years old, blond, and with lively eyes, a face that reddened showing his emotions. He received us with joy: "ah, it was you who wrote the letter". "Yeah"; we said, "we wanted to talk, do a quick interview". "Oh yes, let's go upstairs." And there we went on the steep stairs to the second floor, where his brother was waiting for us, with a different tone of voice and an Ipad in his hand showing what I thought was a spreadsheet. "No, we can't now, we have a very tight schedule today, we have an operation in progress and we can't stop to talk". "But maybe you could continue the operation,

we stay here and just watch" we tried to negotiate. "No, it is not possible. Come back in half an hour. Can you come back in half an hour?" That struck us as odd but half an hour was quite reasonable. In the room there was a wooden table, and another young man standing by it. It would have been better to just stay there and wait, but the tone of voice was very decided and we thought better not to insist. The afternoon was beautiful, and we could have tea in the car while we waited. We stopped on a street, right in front of a house that had a white banner with letters forming a sentence. We only understood the word "nee" and looked at the translation on Google. I could not believe what I read: "A second black country, nee – no!" That is, an anti-immigration slogan, a racist slogan. There, paisiblement in a garden, in front of a beautiful house, next door to one that had a green roof with moss, so ecologically correct."

After 40 minutes, we knocked again on the door. Benjamim came but this time only halfway down the stairs and with a very different posture. He said he could not have us there, that they were busy. We said it would only be 10 minutes. But he was adamant, and it clearly was not for lack of time. He said that there were secret technological processes there, of which they could not talk.

- "What are you afraid of ? We are anthropologists, we are not interested in technological processes", we argued. "We are interested in people, why they do what they do, how they got started... What's your name?"
- "Afraid, I'm not afraid". He said. We went on to ask how old the company was.
- "Three years old". He said.
- Who is the guy we met, is your partner?
- "It is my brother," he said.
- Your father must be proud then.
- "Yes, he is".
- What your father does for a living?
- "He was a cleaner".
- Cleaner? Streets cleaner?
- "No, buildings," he replied.
- "Ah, so it was a big change, you guys made a business company". We tried to make the conversation more cordial, but he was uncomfortable, he kept answering with monosyllables but showed signs of embarrassment and insisted that we send the questions by email.
- "But we wrote and you did not reply. Are you going to answer this time?" we request.

There was no point in continuing to ask questions under these circumstances. We went down a few steps, told him we would write and wait for an answer. We noticed that in addition to locking the door of the tine production room, they hid the bike that was on display at the entrance! Needless to add that the questionnaire we sent by email, in English and translated into Dutch, was never answered.

Later, we read on the website a scary phrase: "Dutch is also really Dutch. Not only is the material sustainable. Through local production and partners, *Dutchfiets* tries to keep its footprint as small as possible and to create employment for the Dutch labor Market"[11].

The importance of the company lies above all in the high esteem that the bicycle has in the Dutch context that invests in this means of mobility to reduce pollution. A bicycle that results from a local circular economy is an example of the reuse of plastics to produce recycled products.

Still in the plastics sector, we interviewed the businessman Lars van Zutphen from the company *Morssinkhof–Rymoplast* with one of the headquarters in Lichtenvoorde that we visited, but it was closed, so we requested the interview via the Zoom platform.

11 https://www.dutchfiets.nl/informatie-en-specificaties consulted December 10th, 2022.

The art of plastic recycling has been a family project for at least three generations, explains Lars. It operates in the Netherlands and serves the European market, "from small companies in the plastics processing industry to the largest multinational corporations in the world". Lars clarifies that they proceed with the purchase of plastic scrap from different sources and of four different types for sorting, grinding, purification, and revaluation, returning a high-quality material (polymer) to a new sustainable production cycle. The main concern of the company's policy is to recycle plastics without loss of quality (mechanical and chemical systems), which creates respectability for the sustainable raw material offered in the market.

The idea of recycling came from the company's founders (in 1960 by the brothers Gertie and Jan Morssinkhof). More recently, *Ingka Investments* (owner of IKEA[12]) bought a minority stake in *Morssinkhof–Rymoplast*. Favorable aspect for a company that invests in a clean and sustainable economy.

The next stop of our research took place in the city of Eindhoven. Before that, we once again had the opportunity to visit a *Renewi* warehouse in Rijtacker. An employee allowed us to enter, photograph and film, and informed us that the site was a solid waste deposit and belonged to *Holland Recycling*. In reality, we were in the territory of a powerhouse in terms of recycling dedicated to the reuse of electronic equipment or electronic waste. According to the folder passed on by the employee, the mega-company was created in 2010 and started with the recycling of metals but soon expanded its focus to the processing of electronic waste aimed at the flow of waste, and recycling of debris and metal. The company's folder and website highlight the WEEELABEX certification, which became mandatory in the Netherlands in 2015. In 2015, the newly founded *Dutch Hardware Trading* (DHT), created to give electronic waste a second life, was also integrated into *Holland Recycling* under the name *Holland Recycling Re-use*. With this structure, it became a leader in Waste Electrical and Electronic Equipment (WEEE - Waste of Electrical and Electronic Equipment). Also associated with it are the *Brabant Environmental Service* (MSB), which acts as a carrier for *Holland Recycling* collecting waste, wood, green and construction and demolition waste, *Wagenaars*, which recycles rubble into granules, *Ecoparque Breda*, storage and transshipment of household waste, *GFT* and construction and demolition waste, and *Waste Connection*, which is a collective that mediates purchases that bring together supply and demand for various types of waste.

On this visit, the value of recycling electronic boards, called printed circuit boards, became evident. Electronics of the latest dates are ideal, but also old computers, laptops, cell phones, routers, modems, TV receivers, and other home and audio-visual equipment are prized for purchase as they all contain valuable metals such as gold[13].

The *Soiltech* company we visited next is another world. It is located in the middle of the countryside between Tilburg and 's-Hertogenbosch and focuses on food. It seeks the highest yield of crops. We were received by one of its owners, Mark, who gave us a long interview and a lot of information material. The company is part of the *Van Iersel Holding*, which dates back to 1947, and it is also a family business - founded by his grandfather, now has his cousins and one nephew as partners. Specializing in manufacturing fertilizers and biostimulants that recycle organic waste, it has become a leading producer of soil improvers and raw materials for the potting soil industry. They invested in high technology and research (*Soiltech Innovation and Test Center*) to develop special fertilizers and produce concentrated foliar fertilizers.

12 IKEA is a designer furniture store at popular prices present in many countries of the global North

13 It is also important to mention that the company has as a partnership with social programs based on hardware donations. This partnership is with *Make-A-Wish Netherlands*. According to the folder: "By participating in our IT donation program, you choose to donate all or part of the residual value. Holland Recycling adopts a wish on behalf of all donors for every €5,000 raised through this program. Any amount we can donate on your behalf will be increased by an additional 10%!"

The company works with the perception that green waste is valuable raw material and proposes the reuse of green waste through composting, thus converging with the ambitions of the circular economy. Mark told us he collects two types of "green waste" – twigs, which municipalities sell, and yard waste from household units. They also collect food products. *Soiltech*'s composting technology has resulted in a highly concentrated foliar fertilizer that Mark considers revolutionary in agriculture. Composting with efficiency adds value to the product. The result of composting is sold to agro-companies in Europe: in the Netherlands, Belgium, and Germany. "What about France?", we asked. "Too far, not worth it. A truck costs 8 euros per hour", and Mark quickly did the math on the distance to Belgium and Germany, the cost, pointing out how much more interesting it is to sell in Belgium, also because there the tax he pays is lower, "but it is still worth taking to Germany".

What the municipalities buy comes from the "afvalbrengstation" (waste collection stations where private waste is deposited) and tree pruning. "Garden garbage sometimes comes dirty, it has stones, you have to clean it, separate the stones. But one [type of green residue] concentrates more of a certain chemical element, the other more of the other". Mark explains in detail all these chemical mixtures and how it results in a "fabulous compound" in his terms. In the future, Mark intends to burn some of what he recycles to create energy, as does the owner of GroenCollect.

When we were saying goodbye, Mark told us about a visit to Ghana at the invitation of a countryman who owned a farm and asked him to help fertilize the soil where he planted pineapples and other fruits. Mark traveled with his girlfriend. There he detected the presence of a worm that went down the river and was trapped in the dam of the place, contaminating the water and the sand, affecting the children's health, entering through the feet, and reaching various organs. He spoke to those responsible for the dam, saying they should remove the clay from the river and use it as fertilizer, thus ridding the population of this problem. The official said that they could only do this if they had authorization from the Minister of Energy. Luckily, at the hotel where he was staying, the girlfriend managed to speak with the Vice President of the country, who was also a guest there; he contacted the Minister, and they obtained authorization and were able to do what he was proposing.

Like Mark, other business owners we spoke with had experiences in countries in the Global South. Although the inspiration to dedicate themselves to recycling often comes from these experiences, this is rarely recognized (it was in the case of the owner of *GroenCollect*). In Mark's case, the colonial prejudice is evident: "you know how it is in Ghana, things only work with bribes, it must be like that in Brazil too", he said, referring to the authorization to remove the worms from the river - although in his story there was no bribe involved.

Mark was super attentive and then wrote us by email asking for our LinkedIn contact – we gave him the link, and he connected us to his network. He said to be available for further questions and shared the link to a congress on recycling in Rio de Janeiro that he would attend in 2022.

Ethnography of garbage collection in Dutch cities

On the way to the University of Leiden, we came across a scene that surprised us. We had just passed through a quiet street and a corner with stone benches for a walker to rest when we saw a concentration of garbage sprawled on the ground, close to some collectors' containers. Alarmed by the presence of misplaced garbage in the middle of Leiden, we started taking pictures. Soon, several small electric garbage collection trucks approached, and men in uniform armed with cleaning equipment began to collect everything on the ground. It looked like a scene from a fictional movie. Each van and its team had a function: collecting, blowing away dirt, or washing. The chauffeur who got out of the wash truck appeared to be the head of the team, giving orders as to which way the garbage should be blown. Two more big *Renewi* trucks arrived to collect the material. We photographed and filmed without being interrupted by workers concentrating on their tasks.

After this dramatic event where the garbage was contained by the forces of urban cleaning with their sophisticated equipment, we continued on our way. Still in Leiden, we photographed various garbage collection devices always classified by the system of material origin for recycling: paper, glass, textiles, and perishable products.

The "afvalbrengstations"

As in other European countries strongly inserted in a culture of consumption (or culture of waste, as Dumont, 1973: chap.1 refers), it is possible to observe open containers to receive materials such as furniture and household objects that private owners discard. During our academic training in France, we experienced the habit of looking for furniture and utensils in these deposits[14]. We used to observe several of these containers in Amsterdam, especially in neighborhoods with a predominance of immigrants of different generations. But nowadays, the disposal system in the Netherlands is well structured by the municipalities in discarded sites, where their nature classifies the waste: the so-called "afvalbrengstation", the waste disposal posts.

As we can see, visiting several of them, people leave their green garbage and various types of waste: furniture, objects, remains of works, metals, and in one of them, even dead animals. In Zaandam, for example, we visited a large afvalbrengstation. At the reception, a poster from *hvcgroep* announced, "Your bulky waste is reused for a clean world". The company collects and recycles waste to produce sustainable energy.

In fact, the location of this "afvalbrengstation" was obtained by following a truck that collected paper and cardboard from containers on the street, which led us to an immense collection enterprise in the port region. The process was well-organized by color-coded containers. A large poster indicated the relationship between colors and disposable products. The line of private cars carrying the disposal slowly arrived at a parking lot. The car could also be parked next to the destined container if the product was too heavy. An employee guided drivers to the appropriate parking lot. First, we went to the office requesting authorization for filming, which was granted.

At the demand of the employee consulted, we avoided capturing people's faces as much as possible. In one of the observed scenes, a lady accompanied by her elderly parents was carrying a sofa to be dumped in a large container. The lady authorized the filming after we clarified that it was university research, giving her a visit card. We heard her say to her mother, laughing, that she should "say goodbye" to the old sofas. With the help of a local employee, the daughter and the employee could dump the old sofas in the warehouse. We filmed and photographed the various gestures of depositing materials in the collectors and the signs that indicated each type of disposal. An employee saw us and said more containers were on the floor below. In fact, the employee was happy to guide us in filming – "television", we understood he saying to another employee.

The classifications in each bay were quite detailed, which surprised us, from breadcrumbs and appliances to plastic, beverage cans and cartons, bulky waste, and food scraps. Each type of disposal deserved a special place, and one of them was a room that looked more like an antique shop, gathering small tables, lamps, knick-knacks, and various decorative objects. The employee, delighted to direct us in the filming, led us towards the numbered stalls until the last one – there were about 30. "Keep your nose closed" he warned as we approached the small house with the door locked, where, he said, were the remains of animals – many dogs that die from the cold, if we understood correctly, but also cats, horses, and other animals. We did not smell anything.

14 The system has changed and today it is necessary to register the object to be discarded, paste a code provided by the website on the object so that it can be collected by city hall trucks.

The employees of this recycling site told us that it was a private company, of which only a small part was public. From there, the garbage would go to Alkaamar, a part would be scanned to separate (plastic, metal, and two more elements), and another would be burned in ovens to generate energy.

Other "afvalbrengstation" visited had fewer stalls. But in all of them, the organization was similar. The one in Zaandam had the particularity of having employees with mental disabilities, Geke, the librarian, had told us two years earlier. They were kind, but had some speech difficulties.

The company responsible for these collection stations reverses the waste in solar, wind, and green projects, considered sustainable to face gas shortages, one of the major social problems in Europe, as we read in the poster of *hvc*.

> "We get heat, electricity, and green gas from biomass, sun, wind, and organic waste. In this way, we work together on a sustainable Netherlands".

Waste never again: *Renewi*

Renewi deserves a separate mention for its central activity in the circular economy in the Netherlands. Its constant presence in Zaandam, as in the whole of the Netherlands, made us understand that we would have to ethnography the *Renewi* trucks.

On one of the hikes, we focused on photographing and filming the garbage truck's activity. On the truck, it was printed in bold letters "Waste no more". We researched the company on the Internet and signed up for a visit, but got no response.

Renewi has its recycling center in Amsterdam. Its website announces that the company's objective is to offer a new life to used materials and offers its services to companies and individuals, with the motto: Safety, Sustainability, and Renewal. It focuses on "a thriving economy" to be achieved by recycling waste and its possible reuse. It claims to have international experience in a wide range of products, recycling an average of 14 million tons of waste collected from 2 million homes, with 89% of recycled and reused products avoiding the annual emission of 3 million tons of CO_2[15].

The company's website mentions eight thousand workers, covering 200 activity sites. A tab on the site presents the profile of these workers, from senior executives - men and women - to garbage pickers. From a photograph of the workers, it is possible to access a short biography with their main activity in the company, place of work, personal tastes, achievements, and projects. Another tab on the site is the job offer. But it is not just a call. Each activity is presented as an added value of its functions, with short videos containing workers' reports. The site advertises, for example, the garbage truck driver work:

> As a driver, you may have the most important role at *Renewi*. You are the customers' business card and are responsible for the collection of various waste streams such as paper, aluminum foil, construction waste, confidential documents or industrial waste. You take it to one of our sites, where we process it into secondary raw materials from which new products can be made. In this way, you contribute to a cleaner and more sustainable world. With us, you can count on: salary always punctual, overtime is paid, permanent contract visa. You drive day shifts and come home on time. Independence, variety and contact with customers. Career opportunities and great colleagues[16].

15 https://careers.renewi.com/nl-nl/onze-mensen. Consulted December 2021.

16 Seen at https://careers.renewi.com/nl-nl/werkgebieden/chauffeur-belader. Consulted 11 December 2022.

Renewi claims to develop a smart, sustainable, and circular economy in which there is no waste. Focused on recycling raw materials, it guarantees to develop a policy to value the environment and nature in the fight against CO_2 emissions to a minimum and the depletion of the Earth.

Groningen and the Collective

In a former Roman Catholic hospital (ORKZ) occupied by a residents' association of around 350 residents, we visited a colleague, Barbara Arisi. The plan was to interview the recycling activities coordinator and learn about the collective's composting activities.

ORKZ is an occupation that the State legalized in 1985, and since then, it has been operating by self-management with a board and commissions for maintenance and technical service. The association is responsible for the preservation of the property. It offers common areas of playful sociability such as a cinema, pub, concert, and exhibition hall; commercial areas (thrift stores), and comfortable individual apartments (sometimes sharing a kitchen and bathroom) for residents.

Hans, one of the oldest residents of the building, is Dutch, divorced, with 5 children, who lives alone in the building. He is respected for coordinating the recycling commission and is one of the occupation leaders. We started the interview with Prof. Barbara Arisi as a translator. Hans soon took us to the immense basement where various materials' recycling processes and waste are separated according to their nature: aluminum, iron, batteries, and microchips. In a large space, several containers are occupied by recyclable materials. There were also dozens of shopping carts full of waste.

We started the tour guided by Hans through the aluminum, copper, and other metal containers. He showed us how the material is first deposited in small plastic collectors with wheels to be easily handled and transferred underground through a ramp. There, a team transfers the collected material to the larger containers. They also have a medium crane for lifting heavy material. They are all very organized, involving significant volumes of material and the work of a team. The absence of cardboard containers caught our attention, and Hans explained that this material does not have a market value that compensates for the work involved in recycling it.

Contrary to what we had heard in 2019 about the devaluation of cans (Eckert, Rial, 2020), there were dozens of containers and supermarket carts with cans. We photographed and filmed computer remains in another room, both the plastic and electronic parts, and lots of wires. In the corner, a bucket was almost full of pet bottle caps.

The basement is where the gas and water distribution pipes are located, and interestingly among them are small artistic interventions, photo exhibitions – one with the hospital's history, which includes objects – and posters. We asked Hans what is done with the profit from the sale of waste, and he clarified that everything is invested in the technical repairs of the house under the care of the corresponding committee.

The visit to ORKZ continued with Barbara showing us how the residents separate organic waste and transport it to the garden for the large composting existing there.

Zaandam: a case study

It was in 2019 that we developed an ethnographic exercise on the policy of solid waste collection in Zaandam (Eckert, Rial 2020). Located in Amsterdam-Noord, Zaandam has a history of industrial production and centralization of working families, presenting revitalization policies. It is the main city in the municipality of Zaanstad. City rights date back to 1811. Bathed by the river Zaan, it had a population of 76,804 h in 2017 (City Hall website). Geke van de Kamp, who is in charge of the municipal library archive, explained that Zaandam was originally a separate municipality. In fact, there were 7 small towns – Assendelft, Zaandam, Koogaan de Zaan,

Krommenie, Westzaan, Zaandijk, Wormerveer – which were officially united in 1974 in a single municipality, with the name of Zaanstad: "But people do not feel that they are inhabitants of Zaanstad, they still identify themselves as residents of these villages. You can see on the facade of this building, there are 7 shields that correspond to the shields of these villages".

In this town, we conducted a dense investigation with a filming and photographing procedure using the street ethnography technique (Eckert and Rocha, 2016), in addition to interviews over 12 days, which included interviews in Amsterdam. The focus of the ethnography was centered on the Dutch urban context: environmental policy and practices of the local population related to the disposal and treatment of solid waste. In short, it was an ethnography about garbage. At least since 2017, the European Commission has placed the issue of waste disposal on the front page of newspapers, and since then, the commitment to reuse has been intense.

We stayed in a hotel close to the town hall and next to the main canal that runs between the sidewalks in the city center. The predominant landscape is clearly one of revitalization, with the main buildings (town hall, hotels, restaurants) clad in wood painted in strong colors imitating traditional Dutch houses. The predominant color is green and, we learn, has been a marker of economic status in the past - the darker the green, the richer were its owners.

The town center was very dynamic, with several shops. The little town had clearly known a policy to revitalize its landscape, with logistics for accessibility, favoring an idyllic setting with old windmills.

Garbage collectors stand out on street corners and along the canal. There are generally large containers serving shops, supermarkets, and other businesses on the corners. Several plastic collectors also draw attention along the canal and sidewalks, reminding us of the priority of cleaning in urban areas. Trash bins are arranged in large numbers, especially close to small pedestrian crossing bridges. We witnessed people drinking from paper cups next to the collectors on two occasions. When they finish their content, they immediately throw the residue in the corresponding trash.

In some dumpsters, there are devices for extinguishing cigarettes and for receiving butts. This does not mean that we often see cigarette butts thrown on the ground being collected by city officials. In fact, as one of our interlocutors among the garbage collectors would tell us, disposing of cigarettes outside the garbage cans is their main public cleaning problem and the one that takes up most of their work time.

On the first day of street ethnography, we walked down Gedempte Gracht (Silenced Canal), on the principal street. For a while, we watched passers-by at security lanes and bicycles drivers. We approached an employee who was cleaning the canal and collecting cigarette butts. We asked if we could photograph his activities. He consented to ask not to focus on his face and, answering our demand, told us his name: Spencer. Then we started a conversation about their garbage collection activities. He kept picking up the garbage, replacing the bin with a new plastic bag, or putting out little red bags called *Belloo* to collect animal excrement. Then he took a device on his electric cart to collect butts and, after, a larger collector to fish for waste in the canal, where there was little garbage. He asked us where we were from, and we replied Brazil. To our surprise, Spencer knew Brazil and rehearsed a few words in Portuguese about his trajectory. He had already lived in Belém, where he had met and married a Brazilian woman with whom he has a son. After separating, he returned to the Netherlands with his son because "here he would have greater study opportunities". Spencer's father is Chinese, emigrated, worked in commerce in the Netherlands, and now lives in China again. His mother, half Dutch, half Surinamese, lives in Amsterdam. In addition to some Portuguese, he speaks some English and understands Chinese words. A polyglot garbage collector! Our first surprise. And not the only one.

Spencer, the Zaandam waste picker's supervisor, traded a hotel job for work at the municipality. He has little education, but his salary can be better than that of a hotel attendant[17]. It is eight hours a day, an activity that he starts by taking the electric truck from the garage to clean up the rubbish, the canal water, and the sidewalk weeds. Spencer told us that cigarette butts are the hardest garbage to collect. He has instruments of various kinds, so he does not have to bend down. He takes care of the public space – but there are private spaces, like the water around the best-known hotel in the city – whose cleaning is the owners' responsibility and must be done 3 times a year. He also told us that he collects pets – which his son can exchange in supermarkets for coins. We did not see autonomous collectors with plastic bags in their hands picking up cans and pets in the Netherlands, as is so common in large Brazilian cities. But we saw a chambermaid leave the hotel at the end of her shift with a plastic bag full of pet bottles in her hand. Returned pets are refunded by 10 cents, explained Judith, our interlocutor from Abbenes.

Spencer greets people and seems to know and have a good relationship with the locals (so different from the waste pickers in Brazil, we thought). We talked about his life and tasks, but to avoid interfering with his workday, we arranged another meeting, as he told us he was there every day.

We continued photographing and filming garbage cans along the canal and on the sidewalks, observing the pattern and relationship of the inhabitants with them. Then, we decided to visit the most prominent tourist spot in Holland, Zaanse Schans, a village with typical low wooden houses and a concentration of windmills surrounding a lake. At the Zaanse Schans Museum cafe, we interviewed an employee about how they dealt with waste there. The employee said that they kept a trash bin near the cashier, and from there, the garbage was taken to the back of the building, where a worker placed it in a large container. This container is emptied once or twice a week, which we found to be not very often for a cafe with so many customers. When talking about the waste collection at her home, she surprised us by saying that the practice of selecting-separating organic waste and other solid waste is recent. Mandatory recycling in the domestic space started in Amsterdam in 2019.

She clarified that the buildings have different garbage containers marked with the apartment number. If the city inspector finds mixtures of cans, plastic paper, glass, or organic waste, the apartment has to pay a fine of more or less 100 euros, about 500 reais. Therefore, "everyone recycles", concluded our interlocutor.

On the way back from the Zaans Museum, we walked towards the town hall when we found Spencer again with his electric garbage collection cart in full swing. We greeted him, and he stopped the car for us to talk. Spencer took off his gloves to greet us, and we spoke initially in Portuguese but soon switched to English. He told us about the cleaning process on the canal in front of the main hotel. He explained that private firms contracted by the administration conducted this procedure. This task must be conducted three times a year by the private company specializing in this type of cleaning.

On Zaandam's garbage problems, Spencer opined that "the biggest problem is the people. They do not comply with the rules and throw garbage in inappropriate places. There is no education", he said, emphasizing that currently, young people do not care much about parental guidelines. We asked about environmental education and if his son had received information of this nature. He replied that there was, yes, some environmental training in schools, but this depended above all on parental education. He emphasized that the most important thing was to reinforce the current policy for selected waste. Spencer repeated the explanation we heard at the Museum that each building has containers with different colors, according to the items to be collected and an identification number. Each resident has an electronic card to open the trash and thus be able to deposit the waste. He showed us his card. We continued talking about his family background and his son's education at a school in the city.

17 We saw on the Renewi website that there were vacancies and that they earned between 2 and 3 thousand euros a month.

Before saying goodbye, we took the opportunity to ask Spencer where the festival planned for next weekend would be, which he had mentioned. He showed a billboard advertising the event and explained that "it's right in the center". We said goodbye, and he continued to guide other colleagues in the garbage collection.

A librarian for 15 years, Geke is assigned to the historical collection of Zaandam. She provided historical information and images on health and environmental issues and taught us how to navigate the municipality's website to access digitally collected videos and photographs (Eckert; Rial 2020).

We asked about the current home collection of garbage and recycling policy. Geke explained what Spencer had already said: each building will have its containers with different colors for the selection and separation of waste by its nature: organic, glass, paper, plastic, etc. The underground container is opened with this personal card every two days. So, we ask: "And if you do something wrong, how can they know?" She replied, "I think they know", laughed, and added a "little jet" that she discovered a little while ago: "Someone told me that the container has a side opening, so if a mother needs to change a baby's diaper and she is on the street, she can put the dirty diaper through this opening. There is a way to bypass the system." And she showed us the same type of card to access the containers, which she had tied with a plastic string, along with her keys at her waist, suggesting frequent use. She also explained that one of the recurring criticisms made by individuals is that this separation must be done individually, not by the company.

We enter the theme of the evident revitalization of the city of Zaandam. She said that it is an area that has been "gentrified" in recent times, following the rise in prices in Amsterdam, but that it is, above all, for the identity of a working-class city that the place is known: "In the past, this area was famous for the industrial wood (for boat construction) and the food industry: chocolate, rice, paper; and the mills that initially made flour and processed cocoa.

Thanks to the important industrial complex for food, storage, or production, this area was called "the breadbasket of the Dutch golden age". The location close to Amsterdam facilitated the receipt of raw materials and the distribution of products, making it the main food-producing hub for the Dutch population. In the 1970s, Turkish, Italian, and some Spanish immigrants came to this area to work in the factories. The Spaniards especially came to work in a steel company (*Hillhover*). It became known for welcoming immigrants, especially Turkish immigrants – and even today, there are many Turkish restaurants that we find here. But with competition from Chinese industry, many factories were closed. It is also an area that has concentrated many Mennonites and Amish. And these are people who care a lot about the environment.

Geke brought photos from the city hall library collection of how garbage was collected in the past when there were no toilets in homes in Zaandam.

> "In this photo from 1927, we see that boats passed by each house to collect the dirty water. The system lasted until the 1950s. Imagine the smell! [The collectors] were called "tumant schoenen" (tumant shoes)".

The "tumant schoenen" photos show buckets full of excrement hung from a pole carried on the back and placed on boats parked on the houses' pier verandas. And photos of two men carrying buckets attached to sticks. We also saw wagons and vans fulfilling the same function of collecting excrement, household dirt, water, and waste, in 1950. Zaandam was one of the last locations in the country to install a sewage system – by another lucky coincidence so common in research, without knowing it, we chose this location for the fieldwork.

Zaandam was also a pioneer in practices that today deserve the name of sustainable ("ecological" for Lutzemberger, 1983, 1995), told us Geke:

> "A factory here recycled jeans since 1650, used to make paper with old fabrics. It was only from 1870 onwards that they began to make paper from wood. Of course, at the time, there was no talk of recycling, it was the only way to make paper."

We took advantage of the conversation with Geke to clarify our doubts. We had dedicated ourselves to getting to know the garbage collection equipment in the city. Every day, we walked through the streets and neighborhoods seeking to recognize the waste collection process and the available infrastructure, conducting interviews whenever possible and photographing the different types of garbage, bags on the ground, and waste on the sidewalk - disposals according to the norm and outside of it.

We tried to decipher the color convention: the black plastic bins are for collecting organic products, the blue bins are for paper, and the green ones are for glass. We find container devices for more specific collections in some corners, such as metals, fabrics, glass, papers, etc. Containers for the collection of electronic products and specified by nature are found in electronics stores and supermarkets.

We present a photo with a poster regulating the use of colored containers. She found it curious that researchers photographed garbage cans, but she patiently confirmed the color code. Geke explained that the numbers on the plastic containers correspond to the house number, "and if someone is walking down the street, they can't throw their rubbish there".

Geke commented on the photos we took, saying that, currently, each house needs to have four different types of waste: organic, paper, plastic, and glass containers. She explained that individual containers must be placed on the street at 8 am and removed before 8 pm under penalty of a fine. Solid waste, such as plastic and cardboard, is collected once a month. They are commercial companies that collect the minicontainers in front of each house.

Laughing, she told us a story that illustrates well possible confusion. One day when she went to pick up her garbage bins, they were not where she had left them. She hit the neighbor to ask if she had not changed the trash cans:

> "Do you have mine?" "No!" - she answered. I finally found out that it had been an older lady who had changed the rubbish. Well, I had only been living there for half a year, so it was good to integrate into the new neighborhood."

In apartments, it is different; there are containers in the basement where the "leftovers" are taken, which cannot be recycled, such as plastic, paper, or glass. Recycling has existed for a long time, but this mandatory separation was imposed about 2 years ago. There is also a tax on plastic garbage bags that must be purchased at the municipality –the more garbage you have, the more bags you need, and the more expensive it will be.

She told us that there were four garbage bins in her apartment's kitchen.

> "Today, after breakfast, I threw the plastic in one and the breadcrumbs in another. This organic garbage is very uncomfortable in the summer, as it attracts fruit flies and other insects. And it's smelly. I don't like summer, that's why.

This organic waste is collected once a week, on Fridays, in her case. Plastic and paper once a month, also on Friday, obeying the scheduled times.

> "This morning I thought I had to separate the tube of toothpaste, but I was in a hurry and put everything together, not caring too much about the environment."

She added that, close to the malls, there are large containers, and that plastic can be discarded at any time, free of charge. The padlock on some containers shows that it is a private container from a store, prohibited from public access. In summer, the green containers are collected every week, and in winter, every 2 weeks. Batteries, batteries, and light bulbs must be taken to special collection points, usually in malls and supermarkets. She said there are places where you can take materials to be exchanged for others, bought or sold. We asked about stores that sell used clothes. She informed us where there was one and that this store was becoming increasingly popular.

She searched in the archives for a photo of a large metal cone, and we saw a teenager throwing a can. "You may think this is funny, but in places where young people are very frequent, they also installed these devices", in a kind of campaign for disposal to be a sport or a recreational activity.

We direct the conversation to ask about working conditions, minimum wage, and the education of garbage collectors. Geke replied that schooling, in general, is low. She said that people who cannot work, due to mental problems, for example, receive federal aid and must work in return – as a garbage collector, for instance. Later in the conversation, when we insisted on knowing if this was a stigmatized job, she said that today the garbage no longer smells bad, they have many instruments and products, and they earn well, so there are students who work collecting garbage. The curious thing is that they are called "nopos[18]", which means "free", but not because it is voluntary work, she adds.

About the recent past, she assesses that there were risks in certain discards. She remembered the danger in the 1980s and 1990s with the "junkies" in Amsterdam.

> "We could get hurt with the needles they threw anywhere. But today you don't see that anymore, also because drug consumption has changed, there's not so much heroin anymore".

She said she saw a lot of changes.

> "These days, in the supermarket, I saw a man who brought his own plastic mug [supermarkets offer free coffee and tea]. It's an idea. More and more people bring their own bags so they don't have to pay for plastic bags at the supermarket."

Currently, the municipality encourages sustainability policies, subsidizing companies that recycle, for example, clothing or furniture. Another photo, of a metal ashtray with sand prompts a comment:

> "These are new [apparatus]. Employees are not allowed to smoke in the building, so they leave. Also here we have all these garbage cans. It amazes me how much garbage we produce every day."

Geke also spoke about topics related to solid waste, which are currently being widely discussed in the Netherlands. We talked about the neocolonial policy of sending part of the country's garbage to Africa and Asia and about accepting garbage from other countries to be processed (burned) and generated energy. "Today, the Netherlands cannot handle the waste produced here, which has increased a lot".

She commented on other photos of us, one of a construction container, one for Salvation Army clothes, another, underground, for glass, without containing her laughter at the unusualness of the images: "ah, you anthropologists..." . We thanked her for the interview, and she still laughed and said that the conversation provided "a funny way of looking at my own country through our photos".

The next day in Zaandam, we once again dedicated ourselves to filming the recycling equipment in supermarkets, where we found: recycling light bulbs, pets and glass bottles, bottle caps, and other waste collectors. On the street, we found an employee collecting cigarette butts, and at our request to take pictures, he showed us how he did it. Consulting the internet about this collection practice, we read that

> "the decomposition time of an incorrectly discarded cigarette butt can reach up to five years, especially if it is thrown on the asphalt, not to mention the fact that it contains more than 4,700 toxic substances, which harm the soil, contaminating rivers and streams. This relative delay in decomposition is due to the fact that 95% of cigarette filters are composed of cellulose acetate, which is difficult to degrade"[19].

18 We cannot find that word, the closest translation for 'free' and close phonetically to "nopos" is 'los' or 'vlot.'

19 https://www.ecycle.com.br/1894-bituca.html. Consulted in November 2019.

September 8th. Festival day Zaanse UITmarkt[20]. A large space is taken up by stalls, each with a function, in addition to the park and food spaces. Two stalls right at the entrance. One dedicated to publicizing the Zaan Museum and distributing folders and information. We talked to the receptionists in this one, who gave us some folders. Another was set up by the city hall, exhibiting municipal publications and many boxes of old photographs reproduced for sale. At the town hall tent, we found Geke, who introduced us to a young man and explained to him, in Dutch, who we were.

Another tent caught our attention for its ecological proposal: a young man invited passers-by to ride a bicycle that would generate energy to run a blender. We accept the challenge. Eric, that is his name, put a banana and some juice in a blender adapted to the bicycle. Pedaling gave energy for the blender to work. We took the opportunity to ask Eric about garbage practices. The young man explained that he selected but emphasized that there was excess consumption and, therefore, a large amount of garbage. Excess consumption was the main problem. After offering us the juice we had produced in a paper cup, he disposed of the container separately from organic waste.

On the way back to the hotel, we found the fruit fair in the city already closing. The empty boxes and the garbage were being collected by the stallholders. And we found Spencer. We talked about the event and the accumulation of dirt on Saturday because it was a busy day. In fact, the shops were full. At the bandstand, a jazz band animated the passers-by. The orchestra competed with a gentleman who played the organ device, aiming to collect coins. We asked him if he ever had Saturday off. He replied that neither on Saturday nor Sunday, as they are days of a lot of garbage. The channel was clear, but here and there, papers, bottles, and even a floating balloon appeared - and Spencer hurried to collect the material.

At the end of the afternoon, a ZNSTD truck washed the sidewalk. To pass with the small truck, the driver went down to lower the protective pillars preventing vehicles from entering the canal avenue to make a U-turn and, once again, travel along the main avenue with the washers turned on. The city was once again taken by peace.

Cleanliness is present in the town's routine and on the Zaan River. We could observe this on a 10 km route with the catamaran. The ferry departed at 2 pm towards the Zaanse Schans park, the mill area. We were impressed with the cleanliness of the water and the large number of bridges that the boat crossed, some of which had to be raised up. Large industrial buildings, some ancient, some modern, of grand proportions mostly dominate the landscape. The highlight among the building companies is the chocolate one, which occupies a huge territory. Its passage announces the park's proximity and the mills' view. Small villages with typical houses intersected the industrial zone. Accustomed to the industry-polluted water relationship, witnessing this proximity between the industrial area and the crystalline waters was the biggest impact.

The last few days in Zaandam were devoted to long walks, generally starting from the central avenue of the Gedempte Gracht towards more residential neighborhoods. We opened the collectors to check their contents. We found organic waste in the black garbage, in the other cans, in general, cardboard and plastic. However, some containers had mixed materials, such as paper with soil and leaves. Perhaps a small oversight subject to fines. In the buildings, we found containers accessible only through cards and codes.

In homes, composting and recycling

We had two interviews scheduled in Amsterdam at Nico Vink's residence in Oosterpark the day before the Festival. Nico is 75 years old; we talked a little in Portuguese because he attended graduation in Brazil. He defended his doctoral thesis in the Netherlands on Brazilian telenovelas. We recorded with Nico and his partner Vital.

20 www.zaanseuitmarkt.nl Consulted in November 2019.

They reported that, like them, in general, all city dwellers perform the separation of organic waste and recycled waste. In this case, the material to be reused consists of packaging, paper, lids, glass, and plastic. Vital took us to the kitchen and indicated the garbage he kept in separate cupboards and drawers: lids, cans, etc., recyclables already separated. He opened a drawer with dismantled milk carton packaging that could be recycled. The space needed to store recyclable garbage was large. It took up almost half of the kitchen space. And that was not all; the glass was accumulated in the basement.

Also in Judith's house, there was ample space to store garbage. Living in a rural context, she had a laundry room where she kept various plastic bins used to separate organic products and recyclable waste. Judith has a homemade garden compost: a plastic bucket with a big hole. She uses the compost from there in the garden with horticultural crops and flowers. In Amsterdam, Vital also dedicated himself to composting in the backyard of the ground floor apartment, taking advantage of the organic waste deposited in a plastic container with holes in the bottom, similar to Judith's, but much larger. We head to the place where he composts, wearing typical Dutch clogs.

We found the most developed composting system in Gronigen, showed by Prof. Arisi. At the back of the ORKZ, an occupied building, there was a vast space for planting horticultural crops. In one of the corners, large rows separated by wooden divisions mark the different moments of composting: the organic residues pass from one to another after a certain time. Posters guide users about the organic that can be placed there and what cannot (citrus fruits, meat, cooked food, for example).

We also spoke with Vital about collecting other waste. He explained that he moves this material weekly to be discarded in specific city hall containers. And he invited us to go to the corner to see the containers. We follow Vital. At the corner of the other street, they found four large containers, each with a lid in a different color: white, blue, yellow, and orange. Vital explained that they were containers with an apparent "mouth" and a larger container underground. In the white one, the collection is textile. In the blue lid are collected cardboard packages. Plastics are collected in the garbage with an orange lid and glass in the yellow one. Vital explained that the collection truck passed by every day. "What about organic?" we asked. Vital replied that they were deposited in the container a little further on, pointing to their location. In this way, residents of the region who did not practice composting needed to bring their waste to this location. The daily collection in the capital contrasts with Judith's statement, who complains about the long wait for garbage to be collected, especially the common leftovers – the others are picked up more frequently. She explained to us that there is a different schedule for the collection of each type of garbage. She also complained that there is no paper and cardboard collection, which you must take to the supermarket, as well as electronics. The cans? Put it together with the electronics. But pets can be exchanged at supermarkets for a 10-cent refund.

The second interview in Amsterdam, with Prof. Theije, reinforced the information given by Vital, Geke, and the coffee attendant at the Zaans Museum. She said that she separates the waste by selection according to the genre of the material and follows the rules established by the disposal policy with the use of the card for individual use in the condominium. She recalled that the fine was significant, and that the tendency was to comply with the rules.

Final remarks

The Netherlands has serious territorial constraints. It is a country established, for the most part, on embankments that extend into the sea, but space is very limited. Where to put all the garbage this society produces if it cannot be exported? How to deal with this "inconvenient things" to keep the "habitability" of Neatherlands with "response ability"? Recycling, and in it the important presence of the privatization of the recycling economy, is one of the possible answers. When discussing privatization, the focus is often on

achieving profitability. However, sustainable development is a valuable ethical principle that can also lead to financial gains. Garbage to be recycled implies profit and savings in collection expenses.

While circular economy practices are associated with profit for companies, individual users of the waste management system acknowledge and support the circular economy but also note that it has led to increased surveillance of their daily lives and a form of biopolitics. The advance of biopolicies can be observed when the State established a project of controlled recycling, followed by civil society to avoid contravention, either by joining a green economy or ecological projects. The consequence of this change in waste treatment - although it already existed before, it has been enormously reinforced in the last 2 years - is the new visibility that disposal gains in the daily lives of individuals. Even in small apartments, as in most domestic spaces in Amsterdam, a city with a high cost of square meters, containers for collecting solid waste start to occupy a large part of the room. And the option for one or the other implies a choice, a rational operation: "Should I put this here or there?" We can no longer have the automatism of other times, in which the foot activated the lid of the garbage can, and it went there. Anything that no longer served, in an almost unconscious gesture.

Even those passing through the country, as was the case with us, feel the change in policy around the garbage that might involve hotels. In the bathroom of our hotel room, there was an announcement saying that, in case of accumulation, the garbage in the room should be taken (by the guest) to a slightly larger bin located in the hallway on the floor. Garbage has lost its invisibility in this space as well and what used to be at the service of maids now has to be done by all of us, at least in economic hotels, as is the case with Easy. Another example of new rules we found is the purchase of household appliances. In addition to the instruction manual that traditionally accompanies these products, a separate sheet has now been added, saying that that object cannot be disposed of as common rubbish and must be taken to special places for disposal. This information, which previously appeared in the Instructions for Use Manual, now deserves a much larger space, more visible.

To the visibility of the garbage, penalties and surveillance are added. The Dutch people we talked to, in general, feel watched by the State with its controls over the types of garbage, the cards that individualize access to containers and that can provide the government, at any time, with data on their private consumption – which they do not seem to worry about, as there is no emphasis on this point – and data on the accuracy of disposal, whether or not they did the sorting well, and this has financial implications with high fines. Outside the days and times scheduled for collection, it is up to the individual to seek another place for disposal - which is not always a simple task and can have consequences if not done regularly, again with monetary fines.

The ethnographic and archive research in Zaandam, added to the interviews carried out with CEOs of recycling companies, revealed that these practices of waste separation, waste collection, reuse of organic waste, and recycling of inorganic waste are differentiated in generational experiences related to the histories of their territorialities, such as that of Zaandam. We were surprised to find such a recent control policy working from a punitive perspective for the consistency of an ecological policy.

But ethnography always makes it possible to recognize the flows of everyday life and, in the case of their experience in Zaandam, as the issue of garbage is experienced as an ecological policy, not without conflicts and contradictions, it always raises the question: what to do with so much garbage on a planet that is increasingly depleted?

Received: December 27, 2022
Accepted: March 31, 2023

Copy-edited by: Jeffrey Hoff

References

ASSUNCÃO, Viviane Kraleski. 2016. "No 'país do desperdício': analisando o lixo como cultura material entre imigrantes brasileiros na Holanda". In: Carmen Rial (ed). *O poder do lixo . Abordagens antropológicas dos resíduos sólidos*. Rio de Janeiro: ABA. p. 101-126.

BATESON, Gregory. 1977. *Vers une écologie de l'esprit*. Paris: Seuil.

CARSON, Rachel. 1962. *Silent Spring*. Boston : Houghton Mifflin.

COLOMBIJN, Freek. 2020. "Sigilo no fim da cadeia de reciclagem: A reciclagem de resíduos plásticos em Surabaya, Indonésia". *Iluminuras*, 21(55): p. 14-37. https://seer.ufrgs.br/index.php/iluminuras/article/view/108027/pdf. Consulted 2020

DOUGLAS, Mary; WILDAVSKY, Aaron B. 1983. *Risk and culture*. Berkeley and London: University of California Press.

DOUGLAS, Mary; ISHERWOOD, Baron. 2006. *O mundo dos bens. Para uma antropologia do consumo*. Rio de Janeiro: Ed. UFRJ.

DUMONT, Réné. 1973. *L'utopie ou la mort*. Paris: Seuil.

ECKERT, Cornelia; ROCHA, Ana Luiza C. 2016. *Etnografia de rua*. Porto Alegre: Ed. UFRGS.

ECKERT, Cornelia; RIAL, Carmen S. 2020. "Etnografia de rua em Zaandam e Amsterdã (Holanda): um percurso antropológico sobre resíduos sólidos". *Iluminuras*, 21(55). Antropologias do lixo/resíduos sólidos: economia circular e experiências inovadoras https://seer.ufrgs.br/iluminuras/article/view/110040. Consulted 2020.

FREUD, Sigmund. 1981 [1913]. "Prefácio à edição alemã". In:, John G. Bourke (ed.), *Les Rites scatologiques*. Paris: PUF. pp. 31-34

FREUND, Julien. 1992. "De Max Weber à Georg Simmel". *Sociétés. Revue des Sciences Humaines et Sociales*, 37: 217-224.

COLOMBIJN, Freek; MORBIDINI, Martina. 2016. "Braço protetor ou mão invisível? Prós e contras da formação de cooperativas de catadores de lixo: uma comparação entre Brasil e Indonésia". In: Carmen Rial (ed.). *O Poder do Lixo: Abordagens antropológicas dos resíduos sólidos*. Rio de Janeiro: ABA. Pg43-64.

GUIVANT, Julia. 1988. "A Trajetória das Análises de Risco: da Periferia ao Centro da Teoria Social". *BIB*, 46(2): 3-38. https://vang-hha.nl/programma/ Consulted December 2021. https://www.hollandrecycling.nl/recycling/ Consult 10 dezembro 2021

LATOUR, Bruno. 2022. "Anthropology at the Time of the Anthropocene – a personal view of what is to be studied". American Association of Anthropologists, Washington, Dec. 2014 (drat for comments). Disp: <www.bruno-latour.fr/sites/default/files/139-AAA- Washington>. PDF Consulted August 2022.

LATOUR, Bruno. 2005. *Reassembling the Social, an introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

LUTZENBERGER, José. 1983. *Fim do Futuro? Manifesto Ecológico Brasileiro* (3ª edição).Porto Alegre: Movimento/ Editora da UFRGS.

LUTZENBERGER, José. 1995. "A Verdadeira Ecologia". In: O Grande Grito, 2ª ed. Porto Alegre: L&PM. pp. 63-73.

MILLER, Daniel. 2013. *Trecos, troços e coisas*. Rio de Janeiro: Zahar.

MORIN, Edgar. 1973. *La méthode. 1. La nature de la nature*. Paris: Seuil.

MORIN, Edgar. 1980. *La méthode. 2. La vie de la vie*. Paris: Seuil.

MORIN, Edgar. 1997. "Por um pensamento ecologizado". In: Edna Castro; Florence Pinton (ed.), *Faces do trópico úmido: conceitos e novas questões sobre desenvolvimento e meio ambiente*. Belém: UFPA. pp. 53-78.

PENA-VEGA, Alfredo. 2003. *O despertar ecokógico. Edgar Morin e a ecologia complexa*. Rio de Janeiro: Garamond.

RIAL, Carmen. 2016. *O Poder do Lixo: Abordagens antropológicas dos resíduos sólidos*. Rio de Janeiro: ABA.

RIAL, Carmen; COLOMBIJN, Freek. 2016. "Introdução: abordagens antropológicas dos resíduos sólidos em sociedades pós-industriais". In: Carmen Rial (ed.), *O Poder do Lixo: Abordagens antropológicas dos resíduos sólidos*. Rio de Janeiro: ABA. pp. 7-40.

Save Our Seas 2.0 Act. 2022. Available at https://www.congress.gov/bill/116th-congress/senate-bill/1982, consulted 8 Dec 2022.

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