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Hiding in Plain Sight: A case for designing with informal waste collectors

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Introduction

This paper presents my practice-led PhD research on how design can provide greater safety and reduce the stigmatisation of informal waste collectors in Sydney. I frame informal waste collection as a pragmatic response to economic marginalisation and entrenched social disadvantage. Informal waste collection has been explored within the context of developing nations such as Brazil, India and Egypt. Practices that constitute the informal economy, such as waste collection, are far more prevalent and supported in these contexts, where they are seen as performing important civic duties (Lewis & Rauturier 2019, p. 497). In developed nations, such as Australia, informal waste collection is rarely institutionally recognised, a situation that I contend would benefit from design intervention, given the capacity for design to envision alternative futures. My research is located in the field of design activism, which refers to a broad range of design practices that challenge dominant political hierarchies to elicit social, environmental and economic change.

The aim of my research is to work collaboratively with waste collectors in Sydney who generate or supplement their income through schemes, such as Return and Earn, and design outputs that address issues they face in their work. Design outcomes may take the form of products, such as a new and improved trolley design to make participants' collection activities easier, or systems, such as a localised kerbside bottle and can depositing network to foster more neighbourly interactions between collectors and householders; workshops with participants will determine the design direction taken. I believe that offering informal waste collectors the opportunity to provide their insight and knowledge will be crucial for improving their working conditions and recognising the important contributions they make to recycling systems in Australia.

Throughout this paper, I aim to shift perceptions of informal waste collection for return and earn schemes from scavenging to resource recovery. I reframe informal waste collectors as experts on waste management within Jacques Rancière's writing

on politics and dissensus. 'Dissensus' is described as a disruption in the experience and perception of conventional behaviours and interactions, which Rancière (1998) suggests is produced when two conflicting worldviews or 'logics' (p. 32) collide. I highlight design discourse that has drawn insight from Rancière's thinking to: describe how design encourages dissensus in everyday behaviours (Markussen 2013); question the role of the designer in participatory strategies (Keshavarz & Mazé, 2013; Tassinari 2018); and consider the impact of critical art and design on eliciting societal change (Lohtaja 2021). I aim to contribute to existing design debate by reframing the activities of informal collectors as socially valuable and disruptive of formalised approaches to waste management in Australia through design. The paper concludes by reflecting on my research method, cultural probes, which consists of a series of creative tasks that research participants are invited to complete (Gaver, Dunne & Pacenti 1999). I outline the iterative approach to adjusting my designed probes following two pilot studies using Rancière's framework of dissensus to critically reflect on participant engagement during the workshops. Furthermore, the reflection I provide on my practice in this paper responds to important ethical questions relating to designing for and with marginalised communities.

Informality & Waste Collection

Informal waste collection forms part of the wider informal economy across developed and developing nations around the world. Economist Friedrich Schneider (2014) presents an account of informal economies across OECD nations. He describes the informal economy as encompassing all economic output that is not captured through governmental administration and surveillance (p. 228). The informal economy is considered as an extensive and complex system that ranges from legal to illegal activities, such as street vending, drug manufacture and distribution. Schneider's account focuses on 'legal activities contribut[ing] to the country's value added' (p. 229) and he sees them as productive and beneficial activities in local communities, such as babysitting and waste collection, along with the work of artisans and craftspeople who lack formal certification. Other research has focused on the problematic dimensions of informal economies, such as the Black Economy Task Force in Australia, which focused on the criminal nature of informality (Ayoub 2017). Without further research, the shape and scale of the informal economy is difficult—if not impossible—to accurately measure in Australia (Van Den Berg 2020). It is important to know the scale of the informal economy in developed nations like Australia, as such insights could inform understandings of how marginalised groups respond to economic precarity.

There are a diverse range of economic frameworks that attempt to explain the prevalence of informal economic systems. These perspectives range from suggesting that too much state intervention encourages informality, while others suggest that too little state intervention is a primary factor (Williams 2015). The lack of consensus regarding the specific conditions that result in an expansion of the informal economy points to an argument presented by philosopher and sociologist Zygmunt Bauman (2004). Bauman suggests that informality, in terms of labour, housing and other basic human requirements, is an inevitable consequence of broader societal trends towards capitalism and neoliberal economic policies. His notion of liquid modernity, which he describes as 'a civilisation of excess, redundancy, waste and waste disposal' (p. 96) includes human beings in the ever-growing list of waste products. As disparity between rich and poor continues to grow, poverty becomes entrenched over generations of underemployment. Bauman focuses on the work of waste collection as one strategy through which marginalised people make a meaningful contribution to their community and environment.

Anthropologist David Boarder Giles (2018) attends to the notion of 'abject economies' (p. 208), a term he uses to describe how economically marginalised communities recirculate waste, such as squatting in empty real estate and contributing to food rescue services for the poor (p. 211). Such practices, he contends, provide individuals experiencing poverty with income, albeit precariously (p. 208). Most importantly, he suggests that abject economic practices do not solely recirculate waste, but also disturb social parameters and hegemonic perceptions of value and waste (p. 218). Boarder-Giles' research points to an interdependent relationship between formal and informal labour practices, where the formal practices produce an increasing assortment of valuable products and services, which the latter repurposes when their value diminishes. In this sense, informal labour and trading activities could be said to be contributing factors in the enablement and spread of capitalism. While I acknowledge this is an important line of logic for my research to interrogate and reflect on, it is beyond the scope of this paper to do so. For now, I believe it is important to acknowledge that there are groups of individuals who engage in informal waste collection and that, although this activity is marginalised, it provides a beneficial service to developed metropolitan areas. Given that there are no existing systems of assistance for informal waste collection in contexts such as Australia, I believe there is opportunity for design intervention to provide support to the services they provide.

Waste Collection in Developing Nation Contexts

In many developing nation settings, municipal waste management systems are overwhelmed or absent, such as in India, Brazil and other South American countries. In turn, communities of collectors and recyclers perform important civic duties which contribute to the overall sanitation and maintenance of the local environment. A primary example of this can be observed in the *zabbaleen* or 'garbage people' of Egypt (Webster 2020, p. 256). Waste management expert Mike Webster (2020) has outlined their unique contribution to the city despite their historical ostracism, as Coptic Christian immigrants in a predominately Muslim context. Faced with an inability to access formal employment, the *zabbaleen* were relegated to the outskirts of Cairo and, thus, began collecting and sorting the city's waste. They were able to earn a living by charging the citizens for their services and trading waste items of monetary value. Webster suggests that the *zabbaleen* have become an integral component of Cairo's sustainable infrastructure. He highlights a recent attempt by the city's government to implement a more formal system of waste management. The new system was more expensive than the informal approach, resulting in a decreased rate of recycling from the local population, who preferred the *zabbaleen's* practices.

Similar accounts that underscore the value of informal practices over formalised structures include the *cartoneros* in Brazil and other South American countries (Melo 2019), the *dalit* in India (Webster 2020) and the activities of informal collectors in South Africa (Samson 2021). An important factor in each of these examples are the communities and reciprocal support that exists between the waste collectors. In Pune, India for instance, the waste collector's union Kagad Kach Patra Kashtakari Panchayat (KKPKP) has been advocating for improved health and safety conditions as well as the working rights of waste collectors in the city since 1993 (Kabeer et al 2013, p. 251). Although the practice is stigmatised in countries such as India, through its connection to the society's strict caste system (Harriss-White 2020, p. 40), wider acceptance of informal waste collectors' value in these contexts is shifting discrimination and improving the quality of life of individuals who participate in the practice (Kabeer et al 2013). It is not my intention here to paint a rosy picture of poor communities around the world. There are a number of barriers and injustices they face on a daily basis, including access to clean water and education, overcrowding, and entrenched ethnic, class and cultural discrimination. Nevertheless, I believe it is

important to highlight the significant contribution these communities make to their cities and towns, in spite of the ongoing hardships they face.

This section has explored the practices and perceptions of informal waste collection in research and advocacy in developing nations. The following section focuses on informal waste collection in Australia to reveal a gap in current understandings of the practice within existing literature locally. Furthermore, the dearth of current research on informal waste practices in Australia underscores the significance and timely nature of my research as we continue to navigate the economic uncertainty of the global pandemic.

The Hidden World of Waste Collection in Australia

Research relating to informal labour in Australia has focused on the gig economy and semi-formalised labour, such as Uber driving and food delivery (Iveson et al 2019) or street press vending (Gerrard 2018). Such research indicates that individuals who typically engage in informal labour practices earn fluctuating wages and lack legal protections afforded to individuals in the mainstream workforce. Researchers in digital ethnography Tania Lewis and Frederic Raturier (2019) have suggested that individuals who engage in waste collection and recycling in Australia have generally been observed to do so as a hobby rather than as a means of survival (p. 499). However, they supplement this argument with the claim that there is an absence of research that attempts to understand the underlying reasons behind informal waste collection activities, such as scavenging and dumpster diving for items to take to Return and Earn collection points (p. 500).

Despite the research gap to date on informal waste collection, I have observed a growing number of individuals walking the streets with trolleys and bags to collect cans and bottles around inner city Sydney over the last three years. Curious about informal waste collection, I commenced research on homelessness and the NSW Return and Earn scheme. I have regularly visited popular Return and Earn vending machines and bulk deposit centres, where I have encountered individuals who dedicate their days to collecting large numbers of bottles and cans.

To provide some context, the Return and Earn scheme was launched in 2017 by the NSW Government (2020). The program offers a formalised system for informal collectors to engage with resource conservation, providing a cash incentive for anyone who collects and returns empty containers to designated locations. Return

and Earn has been made possible via collaboration from a range of industry partners, including: Exchange for Change, who coordinate the scheme; TOMRA Cleanaway, who operate the return points and facilitate refunds; as well as the broader beverage industry, including manufacturers, distributors and retailers, who are required to fund the scheme (Exchange for Change, n.d.). As of March 2020, an estimated \$427 million has been paid in refunds to private individuals around the state, \$10.4 million of which was donated to participating charities (NSW Government 2020, p. 6). The amount of money that has been refunded indicates a high level of engagement with the program among various communities across NSW. At 10 cents per container, the refund amount is relatively small. However, the total sum of refunds indicates the possibility for individuals to amass income from the practice of collecting and returning empty cans and bottles.

To better support full-time informal waste collectors in inner-city contexts, I aim to understand the challenges they face and produce design interventions that are of significant benefit to them using participatory design methods. I contend that participatory design methods, which foreground the practices and knowledge of participants in research, will allow me to understand the challenges informal waste collectors face and produce design interventions that are of significant benefit to them. The following section expands on Rancière's notion of egalitarian logic to theoretically frame informal waste collectors as experts on waste management in metropolitan contexts. I then draw on Rancière's writing to reflect on two recent pilot studies I conducted as part of my research and critically examine the presence of equality in my participatory work.

Egalitarian Logic, The Ingenuity of Waste Collectors & Reflection

Rancière's account of dissensus has informed a range of critical analysis in fields related to design practice. Danish researcher Thomas Markussen has drawn from Rancière's work extensively and provides a significant contribution to design thinking by locating dissensus in a range of critical art (Markussen 2012), design activism, (Markussen 2013) and participatory urban design practices (Markussen 2020). Design theorist Oliver Vodeb (2019) utilises Rancière's notion of equality to argue for innovative education experiences in visual communication design institutions as a means of fostering socially conscientious design students, who might disrupt hegemonic approaches to professional practice. These accounts are useful for exploring dissensus in design. However, they have not applied 'egalitarian logic' (Rancière 1995, p. 30), defined as inherent equality between one person, or group,

and another, to analysing participatory design practices with economically marginalised communities.

Equality was originally raised in Rancière's book, *The Ignorant Schoolmaster* (1987) where he discusses the work of French language teacher Joseph Jacotot. Rancière recounts Jacotot's work as a teacher in Belgium, where he was able to devise a means of teaching Belgian students the French language, despite the teacher and students not sharing a common dialect. Through this overview, Rancière proposes the idea of an equality of intelligence that is inherent among individuals within a society, reasoning that without this inherent sense of equality, Jacotot's methods could not have succeeded. Rancière later applies this thinking to the field of critical art in *The Emancipated Spectator* (2009) suggesting that there is a greater need on the part of practitioners to understand and appreciate their audience as equals who are capable of dialogue and critical thought, rather than regarding them simply as spectators who are incapable of action. The notion of equality also becomes a fundamental component of his well referenced discussion on dissensus, which occurs when a police logic, or hegemonic ideal, and egalitarian logic meet (Rancière 1995, p. 32).

Rancière's application of the notion of equality to a range of issues, including education, art and social hierarchies, signals the importance of recognising an underlying sense of equality between people within creative practice. Rancière's egalitarian logic, therefore, holds relevance within the context of participatory design work with marginalised communities. His logic supports the notion that there is an inherent equality of insight between designer and participant. A successful collaborative encounter between designers and non-designer participants—one where equality is present—has the potential to become a disruptive, political encounter. This is what I seek to achieve in my research with informal waste collectors in Sydney, Australia.

The communities of informal waste collectors with whom I am consulting have shown an impressive capacity for hard work in the face of adversity and adaptability to precarious living conditions. Whether they perform collection out of economic necessity or as a hobby, waste collectors are capable of providing firsthand insight into individual waste management practices in urban environments. The two pilot study workshops I have arranged thus far, which I will now briefly describe, are a testament to this.

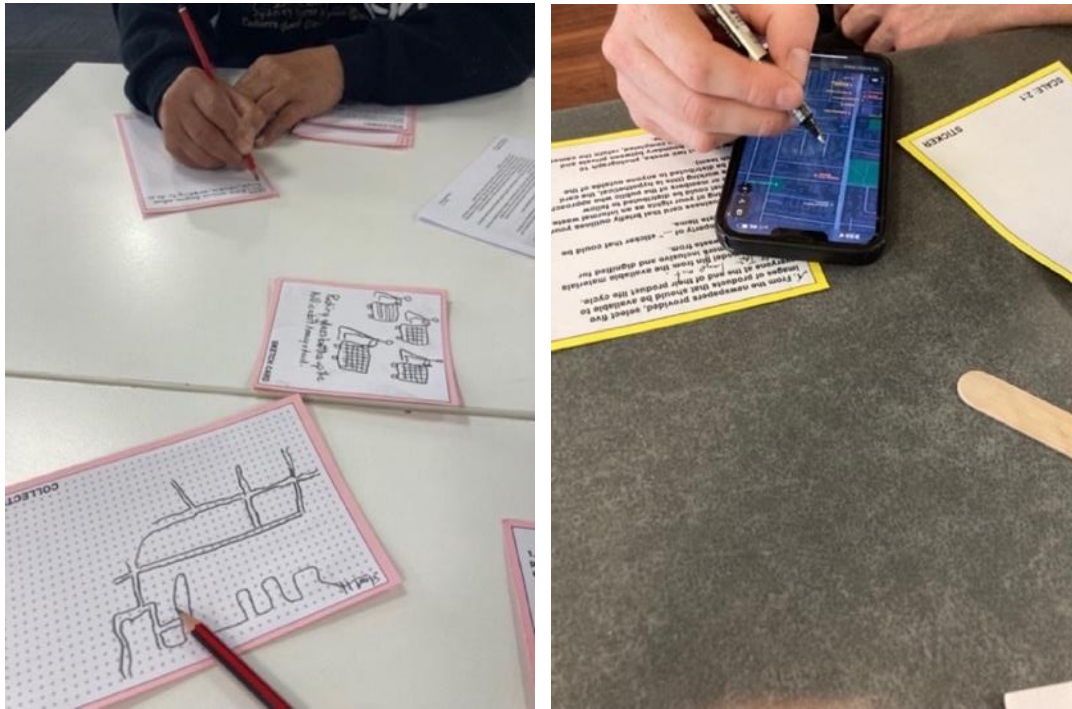


Figure 1: (Left) Pilot study 1.

Figure 2: (Right) Pilot study 2.

Two workshops have been hosted at different non-profit organisations in Sydney offering services to marginalised members of the community. One was held at the Ozanam Learning Centre (OLC) in Woolloomooloo (Fig. 1) and the other was held at Rough Edges Café in Darlinghurst (Fig. 2). The OLC offers courses and training to vulnerable members of the community; Rough Edges is a drop-in centre and café that offers meals to low socio-economic earners. Recruitment of participants was conducted independently by each of these organisations. By approaching individuals through third party organisations, it was expected that undue pressure and coercion would not be experienced by participants to take part in the workshops. Additionally, I anticipated that individuals would be receptive to invitations to participate from staff at each of these organisations, as there was an existing relationship and familiarity between the community and staff members. Staff were provided with eligibility criteria to determine suitable participants who were: over 18 years of age, fluent in English, collecting bottles and cans as a means of generating or supplementing their income, and willing to participate without financial compensation. Both organisations warned that as they did not cater specifically to the needs of informal waste collectors, they may not be able to locate and recruit eligible participants to the research. Nevertheless, the OLC recruited three participants and Rough Edges recruited two

participants; however, only one OLC recruit and one Rough Edges recruit attended and completed the respective workshops.



Figure 3: (Left) Cultural probe kit used in first pilot test study.



Figure 4: (Right) Cultural probe kit used in second pilot test study.

The two workshops ran for approximately two hours, during which participants were invited to complete cultural probes I had designed. Cultural probes involve a series of creative tasks that are included in kits which are distributed to participants (Gaver, Dunne and Pacenti 1999). Probe tasks are designed to be open-ended, and aim to uncover unexpected insights regarding unfamiliar subject groups in research. Rather than acting as traditional forms of data, participant responses are used as inspiration in the iterative development of artefacts and systems that will benefit participants in the research (Gaver et al 2004). For this research, I created three different kits, which explored a different aspect of waste collection including safety, ownership and stigmatisation. The activities included in each kit invited participants to draw, write and take photographs in response to a series of prompts relating to each theme, such as 'sketch five safety precautions you implement while working' and 'photograph ten things that cause discomfort while you work'. The OLC participant completed the safety probe kit, and the Rough Edges participant completed the ownership probe kit. A third workshop was organised with another non-profit organisation; however, due to a lack of participant attendance – a major limitation I discuss below – it did not proceed as planned. All activities were completed within the timeframe of the workshop, with the exception of the photography activities which participants were given two weeks to complete. The participant responses to the probes have been useful in better understanding the practices of waste collectors.

Responses from the first pilot test (Fig. 5) revealed a positive perspective on informal waste collection. The participant was an elderly man who engaged in waste collection as a hobby that afforded him the opportunity to engage in daily exercise. He identified techniques for transporting waste and the physical difficulties inherent in such approaches. Additionally, he outlined collection methods and revealed how these fostered a genial relationship with the communities in which he engaged in collection activities.

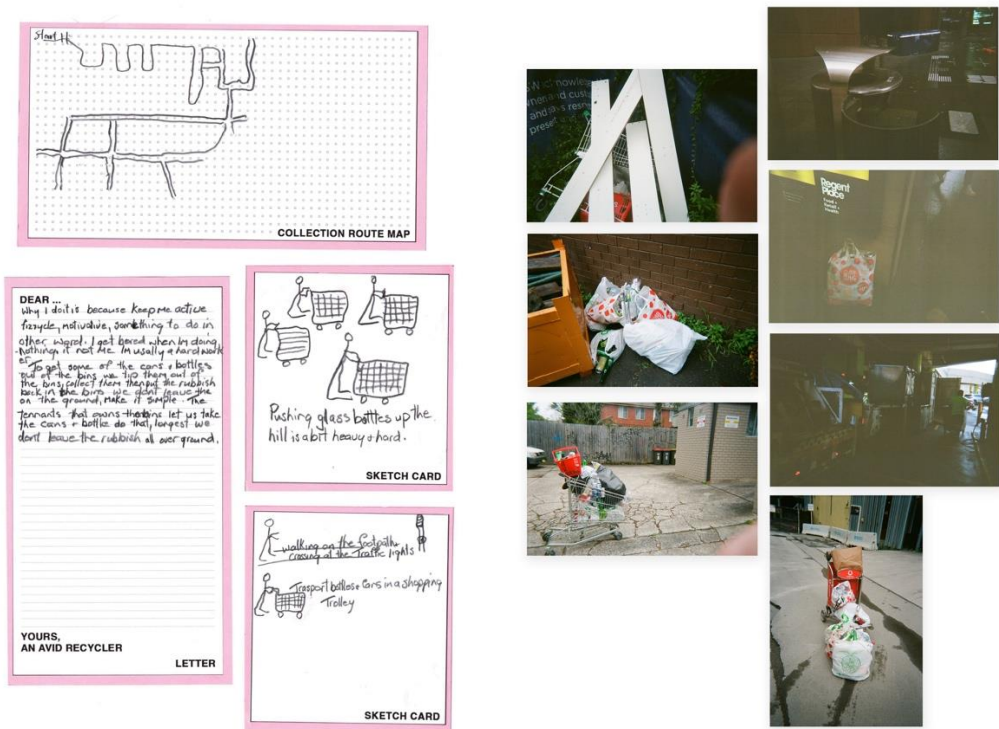


Figure 5 (Left): Written responses from first pilot test study.

Figure 6 (Right): Photographic responses from second pilot test study.

The second pilot study (Fig. 6) revealed a more survivalist perspective of waste collection. The participant involved was experiencing severe economic hardship and engaged in the practice in order to financially support themselves. They reflected on the stigma felt while engaging in waste collection and described how these feelings affected their collection activities. They also provided insight into their collection activities on the street, as well as in spaces such as shopping centres by completing the photography task, which the previous participant did not complete. Both pilot studies were invaluable in expanding my understanding of informal waste collection in inner-city Sydney. However, the approach was not without significant limitations, which I will now address.

Attracting a sufficient number of participants to each workshop is one of the difficulties that can occur in participatory design work with marginalised communities. Participants are often balancing pressures such as: attending personal commitments like medical appointments and legal or counselling sessions; accessing food; determining their shelter for the evening; and attending work commitments. Such difficulties have been exacerbated by the health concerns associated with COVID-19, which disproportionately impact the most vulnerable members of the community (Maury et al 2020). Prospective participants may be less inclined to engage in research activities due to fears of contracting the virus through close social proximity with strangers. Additionally, existing discourse regarding participatory work outlines the complexities of practice, which may also shed light on issues with participant engagement and retention in my research. Design researchers Cyril Tjahja and Joyce Yee (2022) argue that there is a need for designers to integrate themselves into the community for which they seek to design in order to facilitate the optimal conditions for participation to occur. They recommend engaging in activities beyond the immediate scope of the research focus, such as volunteering, sporting events and community meetings, to build a stronger relationship with the community. Similarly, Wafa Said Mosleh and Henry Larsen's (2021) reflection on and analysis of participatory design literature suggests that facilitating workshops, while important, must be situated within a broader set of community interactions.

The integration of designer and community in fostering successful participatory processes can be observed through the *Pimp My Carroça* project, as highlighted by performance activism researcher Carla Melo (2019). The project originated from the independent art practice of Mundano, a well-known street artist, who individually painted around 150 carts throughout Brazil and other nations over five years (p. 160). *Pimp My Carroça* expands Mundano's work and offers waste pickers the opportunity to have their collection vehicles repaired and embellished by volunteers and artists in São Paulo during a one-day event that has been held annually since 2012. The event also attracted assistance from local businesses and services to provide the waste pickers with access to food, health assessments and counselling (p. 161). Participants in the project have indicated an improved sense of personal wellbeing and increase in appreciation from the general public for their services (p. 164). The project has since been expanded, and occurs regularly in several countries outside of Brazil, and has resulted in the development of an app which connects waste pickers in São Paulo to households that require waste recycling (Cousin & Audebrand 2020).

Several factors have determined the success of *Pimp My Carroça*. Mundano's prior engagement with the community of waste pickers in the city established a strong relationship and degree of trust between artist and participants. Additionally, the coordination of multiple organisations and services who assisted participants during the one-day event, ensured that the participatory process was used as a platform from which stronger community ties could be established between diverse stakeholders. There were of course more immediate, tangible benefits of Pimp My Carroca, with participants receiving renovated vehicles and a wide variety of services, that would have made participating appealing to waste collectors, and I recognise that such immediate benefits are not present in my previous research approach. Nevertheless, I believe that Mundano's efforts at being social (Tjahja & Yee 2022) and building a broader sense of community have impacted the outcomes of his project.

Although I had volunteered with several other non-profit organisations around Sydney, one of which assisted with recruitment to the workshop that did not proceed, I had not engaged sufficiently in similar activities in the suburbs where the two workshops were held. Thus, I recognise that I had not integrated myself into the community and therefore likely lacked the trust and confidence of potential participants. Additionally, the organisations who assisted with recruitment stated that they did not cater specifically to informal waste collectors. To my knowledge, no formal organisation provides assistance and support to informal waste collectors in Sydney. Waste collection in Australia appears to occur on an individual basis and a sense of community surrounding the practice is lacking. From the perspectives above regarding the significance of connecting to the community outside of research, I recognise that my research is limited by the current lack of community around waste collection in the city. At the time of writing, I have addressed the issue of participant recruitment by enlisting assistance from a wider range of non-profit organisations in Sydney, including several sites that offer bulk depositing for participants of the Return and Earn scheme, including the NSW Bottle and Cans Collection Centre in Woolloomooloo and CitizenBlue in Five Dock. Having recognised issues with my recruitment approach, I now address limitations to my research method and workshops.

Notes taken during the pilot studies additionally revealed the disparity between myself as a researcher and the participants as informal waste collectors. I found that each participant asked for clarification before commencing each task in their

the cultural probe tasks on a computer, in order to indicate to participants that time and care had gone into crafting the kits. I realised on reflection that this strategy may have overly formalised the activities for the participants who were unfamiliar with design-based forms of research. In order to remove perceptions of the probes as official or institutional modes of communication, I decided to recompile the kits using blank sheets of paper, pens and pencils, as well as the original craft materials provided for the model making exercises (Fig. 4). While this may appear to be an arbitrary collection of materials, I believe that providing participants with greater freedom for engagement may stimulate spontaneous responses. This, in turn, would be more reflective of their tacit insights and allow them to convey their experiences more genuinely than during the initial pilot studies. Incorporating the revised cultural probes design into my future approach will be crucial in fostering a greater sense of equality between the participants and myself. In fostering an egalitarian interaction, the participatory design process will more authentically engage in Rancière's notion of politics, and thus will result in meaningful design outputs that are of significant benefit to participants.

In summary, this section has discussed the impact of Rancière's thought on current debates within design practice. I have applied his notion of egalitarian logic to provide theoretical support for the importance of incorporating the perspectives and insights of informal waste collectors into my current research on informal waste practices in Australia. In reflecting on the insights collected during the research pilot studies, I emphasised the importance of working closely with members of an unfamiliar community. My critical reflection has also revealed the challenges and limitations of participatory research approaches, thus underscoring the significance of reflection in bolstering ethical practices with marginalised communities.

Conclusion

The arguments I have raised above highlight that meaningful change can occur within the socioeconomic parameters in which we live. However, these approaches must take into consideration that socially engaged design may only provide temporary assistance and band aid solutions, without overcoming wider systemic problems. While framing marginalised participants as experts raises important ethical questions, it is nevertheless important to do so in order to establish a sense of equality in participatory practice and facilitate moments of dissensus (Rancière 1995). In observing the participatory design process as a political activity, where participants are able to express their opinions and contribute to solving the everyday

problems they encounter, the outcomes of such practice have a greater capacity to enact meaningful change in their lives. This perspective has been significant in the critical reflection I have undertaken on my existing practice, where I have made important amendments to my research method. Overall, the framework I have drawn upon offers insight for future practice seeking to enact meaningful social change.

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