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Reframing plastic through experiences at a beach clean-up

– A frame analysis of experience-based learnings at a beach clean-up for creating knowledge, building responsibility and motivation to shape individuals' pro-environmental plastic behaviours

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Master's Thesis • 30 HEC

Environmental Communication and Management - Master's Programme

Department of Urban and Rural Development

Uppsala 2019

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Credits: 30 HEC

Level: Second cycle (A2E)

Course title: Master thesis in Environmental science, A2E, 30.0 credits

Course code: EX0897

Course coordinating department: Department of Aquatic Sciences and Assessment

Programme/Education: Environmental Communication and Management – Master's Programme

Place of publication: Uppsala

Year of publication: 2019

Cover picture: *Beach Clean-Up event by BIOagradbles, Valencia, Spain*. Photo: Rafa Beladiez, 2019

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Online publication: <https://stud.epsilon.slu.se>

Keywords: plastic crisis, frames, behavioural change, pro-environmental behaviour, motivation, responsibility, beach clean-ups, citizen science project, experience-based learning, Spain

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Abstract

The plastic crisis is one of the major environmental challenges of our times. Plastic pollution impacts our health, water, tourism, fishing and overall ecosystem. Plastic debris has accumulated in natural habitats from the poles to the equator.

Plastics, defined as synthetic materials composed of polymers, are incredibly versatile: they are inexpensive, lightweight, strong, durable, and corrosion-resistant, with high thermal and electrical insulation properties. Whilst plastic consumption only started a few decades ago, today societies are deeply entrenched in the everyday use of plastic.

Literature reveals that the current plastic crisis is sustained through a collective blindness towards plastic and a diffusion of responsibility for the crisis. Behavioural change studies focusing on methods to implement pro-environmental plastic behaviours through a top-down approach, such as providing incentives and nudges to change behaviour, have been shown to be limitedly successful; missing out on involving the individual in the process and creating intrinsic motivation.

This study takes a bottom-up approach, focusing on how an individual can change their perception of plastic, understand responsibility, create motivation to contribute to combatting the crisis, and, ultimately, ideally change their plastic behaviours. This can be best grasped through the study of individuals' plastic frames. Frames provide people with interpretative lenses to make sense of what is going on and indicate what would be an appropriate way to react. In the research, the experiences of individuals at beach clean-up events in Valencia, Spain have been used as the test bed.

At a beach clean-up event towards the end of winter, seventeen semi-structured interviews were conducted investigating the experience of participation in relation to plastic. Over a month later, through purposive sampling, a selected number of five interviewees was again profoundly interviewed to further investigate what impacts the participation had had on their everyday life, leading to the extraction of three plastic frames.

To conclude, this study offers an empirical exploration on how the experience at a beach clean-up shapes individuals' plastic frames, and presents the resulting consequences in everyday life.

Keywords: plastic crisis, frames, behavioural change, pro-environmental behaviour, motivation, responsibility, beach clean-ups, citizen science project, experience-based learning, Spain

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Acknowledgements

First and foremost I would like to thank my supervisor, Camilo Calderon, for his support throughout this thesis project. Thank you for always offering an open and critical eye to my work and helping me whenever needed!

Secondly, I would like to thank the staff at the NGO BIOagradables in Valencia. Without their constant commitment and enthusiasm for cleaner beaches and oceans, this research would not have been possible. Special thanks goes to Laura González Rodríguez and Jose Vicente Sáez Pérez who helped and supported me throughout the thesis project.

I would also like to express my gratitude to all interviewees for participating and giving their time in this research.

Lastly, I would like to thank the Polytechnic University of Valencia, where I have found a new home in the last year. Special thanks goes to the staff at the International Offices at SLU and UPV for enabling this enriching exchange.

1 Introduction

Section 1.1 in this chapter provides a background of the topic studied in this research. Section 1.2 subsequently presents the problem formulation, followed by the Research aim and empirical focus in Section 1.3. The chapter ends with Section 1.4 presenting the Research Questions that this study will address.

1.1 Background

Despite plastic never having been designed for single-use products, today most of the plastic used is indeed for single-use such as packaging (MacArthur Foundation, 2017; Hopewell, Dvorak & Kosior, 2009). Due to its slow decomposition, plastic accumulates in oceans and on beaches in Europe and worldwide; and micro-plastics pollutes the oceans, threatening marine life (Rochman et al, 2013). In addition to the enormous and severe amount of waste the plastic production creates, another problematic point is that most of the raw material in plastic manufacturing is fossil fuel based (Hopewell, Dvorak & Kosior, 2009). If the current production trends continue like this, by 2050 plastics would account for 20% of oil consumption, 15% of greenhouse gas emissions, and there might be more plastics than fish in the oceans (European Commission, 2018; Ellen MacArthur Foundation, 2017).

With the start of 2018, China, the country that had been importing most foreign plastic waste from overstrained western countries and profiting strongly from the business, banned plastic waste import because of severe congestion and overload. This leaves municipal waste management overstrained and downright swamped; countries are now scrambling with what to do with all their plastic waste (Brooks, Wang & Jambeck, 2018). Whilst the overload of plastic waste and out of control waste management has been becoming publicly recognised entering the public agenda as a hot topic in recent years, plastic consumption continues to rise (Ritchie & Roser, 2018).

Toward the end of the last century, the problematic nature of plastic waste started to be publicly recognised and discussed. One prominent approach to managing the problem was the pursuit of wide efforts toward recycling. However, recycling often presented as a closed-loop system is controversial, as it deals only partially with the consequences and is highly energy-intensive (Hopewell, Dvorak & Kosior, 2009). Whilst currently many resources flow into the research and improvement of waste management, today only 9% of produced plastic is recycled which leaves the planet with a severe amount of plastic (UNEP, 2018). Efforts like recycling and marine clean-up projects to retrieve litter from the oceans is a worthwhile effort, however it does not stop plastic entering the ocean (European Commission, 2018).

Taking matters into their own hands, in recent years Beach Clean-Up events became popular, where participants clean up waste washed ashore at beaches and riversides. These cleaning activities send the message that everybody, individually and collectively, can take concrete action to address the plastic crisis. Further, the activity aims at sensitising individuals on their handling of plastic in their everyday life (Ocean Conservancy, 2019; EEAS, 2018). Whilst the efforts of such activities are commendable, in terms of quantity of the picked up waste in relation to the plastic entering on everyday basis, the environmental impacts are limited.

A laterally reversed, nonetheless complementing approach to recycling and waste management, presenting an option to address the issue at its root, is to investigate how plastic consumption can be reduced by initiating behavioural change on an individual level

through reframing plastic. Previous research suggests that the representation of the plastic crisis in the public discourse generally lacks references to individual's responsibilities or accountability for the problem (Schröder, 2015). Plastic usage resulting in waste is understood as problematic, yet no need for direct action or responsibility by individuals is pursued (Ritchie, 2014; Schröder, 2015). That leads to the premise that there is a disconnect between individuals' general understanding of plastic waste as problematic, and their own plastic consumption.

In this study, frames are understood as providing people with interpretative lenses to make sense of what is going on, and indicate what would be an appropriate way to react (Brookfield, 1998). Utilising frame analysis and reframing as a critical method for scientifically analysing and evaluating the frames is an effective and practical approach to addressing sustainability challenges in a comprehensive way (Boda, 2017). The frame analysis conducted in this research aims to understand how plastic waste can be reframed by participation at a beach clean-up and, furthermore, what implications that has for plastic behaviours.

Reducing plastic utilisation in a consumer-driven market seems challenging, as society is deeply entrenched in a dependency on plastic products and over consumption (Hawkins, 2017). Major reasons for this are the availability, low cost and convenience that plastic products entail. Plastic being omnipresent in almost every area of life, and its seemingly easy disposal from the household (out of sight, out of mind), leads to a collective blindness (Hawkins, 2017). This collective blindness is consolidated by viewing plastic through the conventional waste frame. In this waste frame, the understanding is fostered that plastic waste is managed, picked up with a plan, recycled, handled responsibly and finally disposed; hence, seemingly, the problem gets solved (Rose, 2017). Additionally, on policy-making level, plastic is framed as manageable due to its status as waste rather than something more hazardous (Rochman et al, 2013). Factual, plastic, especially the threatening micro-plastic shows alarmingly strong reasons to be called and dealt with differently than regular waste.

The current framing of plastic as waste is contentious, supports the collective blindness of society and hinders concrete action being taken (Hawkins, 2017). Moreover, individuals are detached from the impacts of their plastic consumption, as landfills, incineration plants and polluted oceans are not located in their direct surroundings. Being oblivious as an individual to the consequences of one's actions is contributing to the growing problem of plastic pollution.

Reframing plastic from its current frame is needed to enable the adoption of new, more environmentally conscious plastic behaviours. Behavioural change for adopting pro-environmental plastic behaviours can be induced through various methods. Multiple methods utilised to reduce plastic consumption have been tested in recent years with mixed success (Rivers et al, 2016; Richards et al, 2016). Methods which are tricking, manipulating or increasing incentives for people to adopt pro-environmental plastic behaviours, have had limited impact and were not permanent, as they neglect active involvement and responsibility-taking by individuals as consumers (Barton & Grüne-Yanoff, 2015). Promising interventions are those that seek to change mindsets (create intrinsic motivation) alongside changing contexts (Dolan et al, 2012).

An extensively tested method of creating impactful understanding and awareness builds on learning through hands-on experiences. Experiential Learning Theory describes a method of learning whereby knowledge is created through the transformation of experience (Kolb, 1974). It is highly applicable for environmental subjects, as humans play a role in just about every environmental issue. An experience-based approach to an environmental

topic, like the plastic crisis, offers people to examine hands-on plastic pollution and reflect on the extent and the source of the pollution. Once aware of the ways in which they personally impact their environment, they can reflect on that and experiment with different environmentally-conscientious, ideally pro-environmental plastic behaviours. At current stage, research on experiential learning in context of the collective blindness in the plastic crisis are as yet limited.

The research will investigate, with the help of a frame analysis, if and how personal experiences and interaction with the effects of the plastic crisis at a beach clean-up can act as a catalyst for reframing plastic, and potentially lead to behavioural change. Resting this research upon the epistemological view of symbolic interactionism and social constructivism I assume that the framing of plastic has a significant influence on how people understand and shape their own behaviours regarding plastic. With this study, I hope to contribute to the overall picture of how environmental problems can be reframed by experience-based learning on an individual level.

1.2 Problem formulation

Plastic waste is an increasing and pressing environmental threat, resulting from individual's plastic consumption and utilisation. Plastic finding its way into the ocean by either directly being dumped there or finding its way from landfills or sewers into the ocean, are endangering ocean and marine life (Rochman et al, 2013, European Commission, 2018; Ellen MacArthur Foundation, 2017). Whilst currently much effort and research is going into how to stop plastic becoming waste or retrieving it from the oceans, an inverse yet complementing approach to the issue is to investigate how plastic consumption can be reduced by reframing plastic. Learning through experience is a validated method for creating behavioural change, yet its potentials in context to reframing plastic are still to be explored. It is significant to understand how plastic can be reframed and how individuals' understanding, motivation, and responsibility can be triggered, as it has a direct impact on their plastic behaviours.

1.3 Research aim and empirical focus

The research will investigate, with the help of frame analysis, if and how personal experiences and interaction with the effects of the plastic crisis at a beach clean-up can act as a catalyst for reframing plastic and potentially lead to behavioural change. Resting this research upon the epistemological view of symbolic interactionism and social constructivism I assume that the framing of plastic has a significant influence on how people understand and shape their own behaviours regarding plastic. With this study, I hope to contribute to the overall picture of how environmental problems can be reframed by experience-based learning on individual level.

The aim of this thesis is to investigate the potentials of experience-based learning at beach clean-ups to reframe plastic. Within this, it is explored if participation at a beach clean-up has implications on individual's plastic behaviours.

Beach clean-ups are volunteer activities organised often by NGOs or public institutions, that take place along coastlines or river lines. Such events invite the public to participate in collecting waste and cleaning activities on public terrain. These beach clean-ups serve as a gateway to facilitate space for applied experience-based learning. As part of the activities, participant often engage in conversations about plastic waste as an environmental issue.

In Valencia, Spain, the local NGO BIOagradables organises public beach clean-ups with approximately 100 attendees monthly. The NGO facilitates the cleaning of varying areas at the Valencian coastline where participants are confronted and literally in touch with marine litter. These beach clean-ups build the foundation for my research and source of data collection.



Figure 1 Collecting plastic litter at the Beach Clean-Up event. Photo: Rafa Beladiez, 2019

1.4 Research questions

In order to reach the research aim, the following Research Question and Sub-questions (SQs) are developed:

- Main research question: What are the potentials of experience-based learnings at beach clean-ups to shift individuals' frames of plastic?
- SQ 1: What does an individual's frame of plastic encompass after the participation at the beach clean-up?
- SQ 2: What are changes in behaviour concerning plastic after the experiences at the beach clean-up?

2 Theoretical Framework

Section 2.1 of this chapter starts by presenting the theory the research built on. Section 2.2 follows by bringing the theory into the context of the research and addressing previous work in the field. The chapter will close with Section 2.3, establishing the premises and theoretical background on which the field work presented in the next chapter builds.

2.1 Frame Theory

Framing theory and frame analysis provide a broad theoretical approach in communication studies, news, politics, and social movements (Jerneck & Olsson, 2011). Amos Tversky and Daniel Kahneman's Nobel Prize-winning research in that field found that framing of problems influences decision making, which is relevant in any environmental debates such as the plastic crisis (Tversky & Kahneman, 1989).

The concept of framing is commonly accredited to Erving Goffman and his 1974 publication: *Frame analysis: An essay on the organization of experience*. In this Goffman brought forward the idea of frames to label "schemata of interpretation" that allow individuals or groups to locate, perceive, identify, and label events and occurrences, thus rendering meaning, organising experiences, and guiding actions (Goffman, 1974). Frames provide people with interpretative lenses to make sense of what is going on and indicate what would be an appropriate way to react (Schön & Rein, 1994). Frame analysis established by Goffman, is a multi-disciplinary social science research method used to analyse such frames (Goffman, 1974). Stirling (2010) reasons that framings have scientific and political importance because they define how people understand the issue at hand, which may, in turn, have implications for the interventions that is chosen.

According to Goffman (1974) frames are created through social interactions in an institutional and cultural context. He establishes frames as discursive (i.e. symbolic) structures used by actors to organise and define social situations. Whilst the production as well as the reception of frames may occur consciously, they may well be unconscious, shaped by culture and socialisation. Avoiding framing is virtually impossible because reality is constantly mediated through epistemology (Lakoff, 2010).

Frames are ever-present because viewing from no perspective is impossible. There is always a point of view, and it biases the view by emphasising or including certain aspects of the situation or experience while omitting or devaluing others (Goffman, 1974).

A famous example by Amos Tversky and Daniel Kahneman (1981) explored how different phrasing affected individual's responses to a choice in a hypothetical life and death situation. In an experiment, participants were presented with different choices of action programmes to be implemented on 600 disease-affected citizens. All presented choices led to the same probability of death rates but were differently phrased. 72% of participants chose the positive framing ("saves 200 lives") over the negative framing ("400 people will die") (Tversky & Kahneman, 1981).

Framing is often used to bring more or different parts of an issue into perspective by mobilising different concepts and shifting paradigmatic standpoints. By this, reframing can "trigger redefinitions of problems, dilemmas or conflicts and thus reveal new facets that may support resolution" (Jerneck & Olsson, 2011).

Utilising frame analysis and reframing as a critical method for scientifically analysing and evaluating the frames, is an effective and practical approach for addressing sustainability challenges in a comprehensive way (Boda, 2017). Criticism of frame analysis is its subjectivity, as it builds upon the researcher's own interpretation, however, that is the case with most qualitative social research (Flick, 2006; Hope, 2010). Further, frame analysis has been criticised for the vague use of the term and for inability to explain the origins of such frames (Raitio, 2007; Entman 1993; Perri, 2005).

Less frequently used, nonetheless qualified, frame analysis can be applied to explore frames of individuals. Focusing on frames of individuals in the discourse of the plastic crisis is of interest because it makes out the consistency of the system. Individuals' prevailing frames shape understanding and, subsequently, actions and behaviours (Schön & Rein, 1994). Individuals act as carriers of a practice and in doing so, can influence others (Cook & Wagenaar, 2012). In the wide context of the plastic crisis, understanding individuals' framing of plastic can help to unravel the layers of causes to the crisis, as well as somewhat contribute to find what measures can be introduced to interrupt the mainstream of the system.

2.2 Predominant plastic frames and their consequences in the plastic crisis

By enabling the holistic study of perspectives and understanding of individuals, frame theory offers a methodical approach to exploring individuals' frames of plastic in the plastic crisis (Ardèvol-Abreu, 2015). According to Rose (2017), the current plastic crisis is sustained by a strong frame of plastic as waste. Through that, the problem is presented to be the waste, not the production. Hence, focus is set on waste management or recycling and not on the solving of the issue at its root: the production and concurrent consumption of plastic (Rose, 2017).

Accessorily to the strong plastic waste frame is the limited appreciation and understanding of the plastic waste's value. Generally, consumers often do not know and do not question how a product was made. They are detached from the production and post-consumer stage in the value chain of a product (Fröhlich et al, 2018). Hence, consumers do not grasp how many resources are needed for the production and how expensive and complex the disposal is (Fröhlich et al, 2018). Therefore, products are generally less valued in terms of the waste they produce. This phenomenon relevant to the plastic crisis is also seen in the current scope of food waste, as consumers hastily dispose of food items when the expiry date is reached, without checking if the food is in fact inedible.

With the generated waste being presented as the chief culprit, the responsibility is assumingly carried by the waste industry or waste generators as big companies. Whilst holding the industry, national governments and the EU responsible, the individual's responsibility has been somewhat falling by the wayside so far.

With regards to plastic waste, the latest report from 2017 on attitudes of Europeans on the environment however reveals a growing understanding of personal responsibility. Accordingly, the report suggests that people should be educated on how to reduce their plastic waste (European Union, 2017). Whilst the topic of plastic waste reduction has been somewhat neglected, the plastic crisis' impact on the environment is ever-present on the public discourse and media representation. That was found by a study on plastic framing of ocean pollution in media representation in 2015. The study further discovered that current media frames are generally lacking references to individuals' responsibilities for the problem and human-nature relations. This contrast between the media framing study from 2015 and the report from the European Union (2017), suggests that there is progression in the understanding of individuals of plastic. Further, it indicates a variation of individuals framing their own responsibility and media's presentation of individual's responsibility.

In media presentation when pointed to responsibilities of consumers, it is referred to on a macro-societal level. Referring to a broad generalised responsibility ("humans that litter") could be removing the individual's direct relation to the problem (Schröder, 2015). This leads to a diffusion of responsibility and might partially alleviate the individual's responsibility. Hence, in media representation plastic waste is presented as problematic, yet no need for direct action or responsibility by individuals is explicitly portrayed.

“(…) it remains a silent and unobtrusive finger-pointing for the most part because little reference is made directly to human or individual contribution to marine litter. Apart from the fact that marine litter assumedly derives from human actions, there is no direct accusation.” Schröder, 2015 p.15

In the media representation analysis, Schröder (2015) defines frames dealing with the relations between humans and litter (human-litter frames) as: humans produce litter which contributes to the marine litter problem (thus, are part of the problem) and humans have the choice to reduce litter (thus, are part of the solution). In both cases the individual is assigned responsibility (agency) and drawing the connection to the question of individuals' plastic behaviours as part of the problem.

This study builds and expands on these human-litter relations which seem vital to explore the potentials of reframing plastic in order to create change of individual's plastic behaviours.

2.3 Strategies and methods for creating change in individual's plastic behaviours

Behavioural change for pro-environmental behaviours can be induced through multiple methods of which some have been tested and analysed in recent years in context to plastic behaviours. In the following sections, the methods of nudging (in the field of antecedent strategies) and social learning (in the field of consequence strategies) aiming at reducing plastic consumption by individuals are explored.

2.3.1 *Methods for behavioural change: Nudging and Social Learning*

Thaler and Sunstein (2008) define the concept of a nudge as any aspect of the choice architecture that alters people's behaviour in a predictable way without prohibiting any options or significantly changing their economic incentives. Nudging has been increasingly used as a strategy to reduce excessive plastic consumption and has received positive attention in recent years. Most prominent is economic nudging, where a nudge providing a financial incentive is highly visible and serves as a choice reminder which shall prompt behavioural change (Rivers et al, 2016). Rivers et al (2016) researched the impacts of using financial incentive as a nudge to reduce plastic bag consumption in the city of Toronto, Canada. The study showed that nudging had limited impacts on long-term behavioural changes as behaviours were adopted short-term out of convenience rather than commitment to the underlying idea (in this case, reducing plastic consumption). Beyond that, Nudging is deprecated for its high paternalism and manipulative nature (Barton & Grüne-Yanoff, 2015; Goodwin, 2012; Bovens, 2009).

Social Learning expands on traditional behavioural theories, in which behaviour is governed solely by reinforcements, by placing emphasis on the important roles of various internal processes in the learning of individuals (Bandura, 1971). Albert Bandura, proposed that learning is not purely behavioural but a cognitive process that takes place in a social context through which new behaviours can be acquired by observing and imitating others (Bandura, 1963). Social Learning presents a strategy that can be applied to introduce new systems aiming at reducing plastic consumption. In a study by Richards et al., (2016) the effects of Social Learning have been tested in a case of the introduction of a “No Plastic Bag Day” on Saturdays in Malaysian supermarkets. A study evaluating the impacts of the “No Plastic Bags” campaign later reported that the campaign had only minimal effect on plastic waste reduction. A sales analysis showed that shoppers shifted their grocery shopping time to avoid the plastic bag banned Saturdays (Zen et al, 2013). Social Learning needs to be viewed critically because of its mixed success rates and limitations of impact (Richards et al, 2016; Zen et al, 2013; Myers, 2014).

As described and elaborated based in previous research, reducing individual’s plastic consumption through methods as nudging or social learning, has limited impact. Strategies aiming at forcing, tricking or manipulating individuals to adopt a pro-environmental plastic behaviour (as presented in the described cases) have resulted in limited impacts. The described cases did not include active involvement of individuals nor taking responsibility by consumers. Consumers had restrictively adopted a new pro-environmental behaviour, but had not experienced the intrinsic motivation therefore, the impacts were not highly effective or permanent. Dolan et al. (2012) explain this phenomenon by arguing that the most impactful interventions are those that seek to change mindsets (create intrinsic motivation) alongside changing contexts.

2.3.2 Building motivation for persisting behavioural change

The studies of the methods of Nudging and Social Learning that intended to create behavioural change to reduce plastic consumption led to the conclusion that intrinsic motivation is essential for effective and long-term behavioural change. A study by Pelletier et al., (1998) suggests that motivation is a prerequisite to understanding environmental behaviours and is an essential factor that influences individuals’ intention to commit to a pro-environmental behaviour. Ryan and Deci (2000) further suggest that motivation can be classified as intrinsic and extrinsic motivation rendering to the factors that derive the individuals to perform the activity. The continuum of motivation (figure 2) ranges from intrinsic to extrinsic and to amotivation or self-determined and non-self-determined motivation (Ryan & Deci, 2002).

Type of Motivation	Amotivation	Extrinsic			Intrinsic	
Type of Regulation		External	Introjected	Identified	Integrated	Intrinsic
Quality of Behaviour		Non-self-determined			Self-determined	

Figure 2 Self-determination theory continuum of motivational, regulation, and behaviour types. Adapted from Ryan and Deci (2002) by Karpudewan and Khan (2017).

Simplistically explained, externally motivated individuals are engaged in the activity for the purpose of attaining external rewards or for instrumental purposes. This was substantiated in the case studies of Nudging and Social Learning, where individuals adopted a pro-environmental behaviour short-term as long as the incentive was in place.

In contrast, intrinsically motivated individuals perform the activity for their own sake and out of interest (Wigfield, Eccles, Roeser, & Schiefele, 2009). Multiple studies have shown that self-determined motivation influences pro-environmental action, such as recycling, conserving resources, purchasing environmentally friendly products, and general pro-environmental behaviours (Karpudewan & Khan, 2017; Villacorta, Koestner, & Lokes, 2003).

2.3.3 Experience-based learning

Experience-based learning addresses the limitations demonstrated by other methods regarding intrinsic motivation, changing mindsets and adopting pro-environmental behaviours permanently; however, there has been no explicit research in this field.

Experience-based (or experiential) learning derives from the Experiential Learning Theory (EL) developed by David Kolb. EL is one of the learning models that has been described within constructivism (Kolb, 1984). Kolb’s model portrays a four-stage learning cycle (figure 1), viz.: concrete experience; reflective observation; abstract

conceptualisation; active experimentation. It requires the learner to experience, reflect, think and act in a cyclic process in response to the learning situation and what is learnt. Concrete learning and intrinsic understanding are gained when the learner actively experiences and performs.

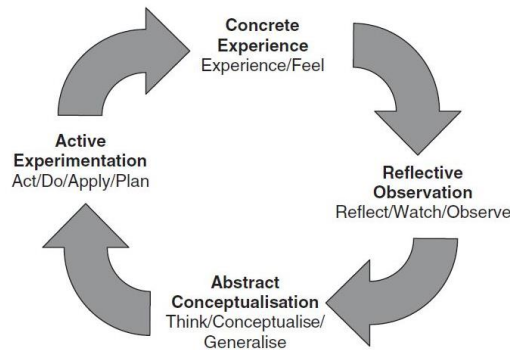


Figure 3 Kolb's Experiential Learning Cycle (Chan, 2012)

Through the course of reflective observation, the learner consciously reflects and draws conclusion on the experience. Based on these implications, in the third stage of abstract conceptualisation, the learner can conceptualise a theory or model and use these generalisations as guides to engage in further action and experiment with different scenarios in the final cycle of active experimentation. The cycle is ongoing and it involves both concrete components and conceptual components, which require a variety of cognitive and affective behaviours (Kolb 1976). It is established that meaningful experiences can lead to a change in individual's knowledge and behaviours.

Building on the theory, experiential learning as an applied method describes a situation of learning by doing, whereby knowledge is constructed by the learner during the transformation of the experiences (Karpudewan & Kahn, 2017; Schwartz, 2012). Experiential learning adopts a holistic perspective that combines experiences, perceptions, cognition and behaviour. Thus, the individual makes discoveries and experiments with knowledge first-hand, instead of hearing or reading about others' experiences, knowledge or facts (Kolb & Kolb, 2009).

“In its simplest form, experiential learning means learning from experience or learning by doing. Experiential education first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking.” - Lewis & Williams, 1994 p.5

The role of emotion and feelings in learning from experience has been recognised as an important part of experiential learning (Moon, 2004). Vital in experiential learning is that the individual is encouraged to directly involve themselves in the experience, and then to reflect on their experiences, in order to gain a better understanding of the new knowledge and retain the information for a longer time (Kolb & Kolb, 2009; Schwartz, 2012).

Summarising, one can say that experience-based learning and intrinsic motivation building are symbiotically intertwined. Meaningful experiences lead to self-determined intrinsic motivation, which enables the lasting adoption and perpetuation of the pro-environmental behaviour.

Real-world encounters with environmental issues leave individuals with a deeper impression than learning based on sources from hearing and reading (Karpudewan & Kahn, 2017). Beach clean-up activities engage attendees in hands-on contact with the plastic crisis in the form of picking up plastic items washed ashore. Hypothetically, beach clean-up events meet the conditions and premises for enabling experience-based learning to take place. However, there has been no research done in this specific field connecting experiential learning, beach clean-ups and plastic behaviours

3 Methodology

Section 3.1 of this chapter starts by presenting the setting of the empirical data collection and field work. Afterwards, in Section 3.2 the applied theoretical strategy in context to the data collection used is presented, followed by Section 3.3 which goes into details of the procedure, methods and sampling of the data collection. In Section 3.4 analysis procedure is rolled out. The chapter ends with Section 3.5 providing methodological reflections.

3.1 Empirical data collection setting

The first data collection and initial contact with interviewees took place at a beach clean-up event on the 10th of March 2019 at Patacona beach (Playa de la Patacona) in Valencia, Spain.

Patacona is an urban beach which prolongs Malvarrosa beach, the most visited beach in Valencia's centre. The surrounding is a residential area that also includes vacation properties which are seasonally inhabited, mainly during the high season March to October. There is a bus stop as well as car parking space, however neither the metro system nor the bicycle-sharing system has stations directly at Patacona beach, making it more difficult to reach than Malvarrosa beach. The beach is composed of fine sand, and has a length of approximately one kilometre and an average width of 110 meters. The edge of the beach offers a promenade with hotels, restaurants and (holiday) homes. During high season, it offers surveillance services, a tourist office, first aid, public WC and parking. During the off-season, when the data collection was conducted, the beach is mainly deserted, and the services are not active.

The event was organised by the local NGO named BIOgradables. BIOgradables is an NGO founded in 2012, consisting of volunteers and activists that carry out workshops and cleaning activities at Valencian beaches. They aim to raise awareness of ocean pollution. A core belief of the NGO is that each individual has a direct impact on the environment. Through the cleaning activity, they hope to inspire individuals to become aware of plastic pollution and carry this awareness forward in their networks, creating a chain reaction of raising awareness on plastic pollution in the ocean.



Figure 4 Microplastics like styrofoam that are the most common items found at the Beach Clean-Up events in Valencia. Photo: Rafa Beladiez, 2019

The beach clean-ups are public events, taking place once a month on a Sunday morning from 10am to 12pm. The events are attended by approximately 100 participants. The procedure of the beach clean-up event starts with a short introduction of the NGO and cleaning activity by one of the NGO staff. Afterwards the participants are divided into groups of approximately 10 and guided by one NGO staff starting the cleaning activity. The most found items are micro plastics (plastic pieces with a diameter less than 5mm), cigarette ends, straws and ear swabs made from plastic. The NGO staff support groups, answers questions and documents what items are found. BIOagradables documents the quantities of items found at each beach clean-up event and pass them along to the Spanish authorities.



*Figure 5 Welcome and introduction to the Beach Clean-Up event by BIOagradables in Valencia.
Photo: Rafa Beladiez, 2019*

The events are advertised through social media. In recent times, the beach clean-up events organised by BIOagradables have been covered by newspapers, cable networks and radio stations. Next to the monthly public beach clean-ups which are free of charge to attend, the NGO also offers fee-based beach clean-up workshops to schools, businesses and other interested parties upon request.

I had first contact with BIOagradables when I was on an exchange semester at the Polytechnic University of Valencia when the NGO presented themselves on campus in September 2018. After starting volunteering and attending beach clean-ups, I approached the NGO in January 2019 asking for permission to interview participants at the beach clean-ups as part of an independent master thesis project. The NGO consented as they are interested in the research idea of exploring what the impacts of the experience-based learning at the beach clean-up have on participants plastic behaviours. They offered the support of the staff Jose Vincente Sáez Pérez for conducting the interviews. He helped with conducting the interview in Spanish as well as Valencian language (official regional language of the Valencian community) that I am not proficient in.

The data collection took place in two stages: the first round of interviews took place on the beach clean-up event on the 10th of March 2019. After purposefully sampling, the second round of interviews took place between the 11th and 25th of April 2019.

3.2 Frame analysis in the context to the data collection

To research the framing of plastic, in this study a frame analysis is carried out based on interviews conducted with participants of a beach clean-up in Valencia, Spain. Frame analysis, offers to study social constructions of reality, is part of a qualitative research methodology which aims at providing deeper understanding of meaning and processes (Goffman, 1974). Premises of frame analysis are that the knowledge or perception of reality is socially created through interaction (Goffman, 1974). Spoken word and language used plays an important role in the creation of meaning; and the interaction between society, language and the individual, as well as the objects of interpretation (Goffman, 1974).

With the frame analysis it was expected to study if or how the understanding of plastic got reframed by the participants as a result of their participation at the beach cleaning activity. In the limited scope of this thesis, this allowed to draw first conclusions on if experience-based learning has impacts on the reframing of plastic, creates motivation and leads to the adoption of pro-environmental plastic behaviours. The aim of the analysis was to move beyond descriptive understanding on what people say about plastic and their experience at the beach clean-up but to strive towards grasping the underlying assumptions and overarching ideas that are implicitly and explicitly contained in plastic framing.

3.3 Data Collection: Methods, Sampling and Procedure

The study carried out semi-structured interviews as a method of inquiry with participants at the beach clean-up to identify frames. The interviews were used to gain a fundamental understanding on what the impacts experience-based learnings have on individual's plastic frames and related behaviours. Structured interviews are used as a qualitative method of inquiry that combines a pre-determined set of open questions to prompt discussions with the opportunity for the interviewer to explore particular themes or responses further (Creswell, 2015). In contrast to a structured questionnaire, a semi-structured interview does not limit respondents to a set of pre-determined answers. Using this technique, allowed respondents to discuss and raise issues and ideas I might not have considered before (Creswell, 2015). The interviews got treated as the representations of the frames of the individuals within the participants of the beach clean-up.

The data collection by the means of interviews took place in two stages. First, an arbitrary group of seventeen people at the beach clean-up event got interviewed with the subliminal target set to create a group of a demographic diversity. At the end of each interview, participants were asked for their willingness and permission to be contacted for a second interview within a couple of weeks after the beach clean-up. At the first round of data collection by means of semi-structured interviews at the beach clean-up event, special attention was paid to the interplay of previous and new understanding of plastic ('understanding'), motivation for taking action to tackle the problem ('motivation') and plastic behaviour such as consumption and disposal of plastic and potential ideas for changing those behaviours ('behaviour'). To inquire this, questions were designed to prompt insightful answers to the interplaying categories. To exemplify, the question "*Who should be held responsible for the plastic waste that you are finding today? In which way are they responsible?*" could bring about answers in the category of Understanding (i.e. knowledge of origin of plastic waste), Behaviour (i.e. linking the waste in the ocean to an individual) and/or Motivation (i.e. suggesting they are personally responsible for the plastic waste in the ocean). The full list of questions can be found in appendix I.

In the second round, through purposive sampling, five interviewees were specially selected to be interviewed to create a wholesome representation of the diverse participation at the beach clean-up. Whilst each interviewee was asked to share specific demographic information and contact details for conducting the second round of interviews, the interviewees were treated as confidentially as possible and anonymously portrayed in the study. Before the interview, the interviewees were informed that confidentiality would be

secured by not referencing their names and by presenting the research in such a way that an individual interviewee could not be recognised.

Building on the insights gained by analysis of the first data collection round, the second round focused on five participants with whom qualitative interviews are conducted.

The aim of the second round of interviews was to identify how frames are further developed or sustained since the beach clean-up. As the second interviews had a comprehensive approach and went into detail, five interviewees were selected.

The interviews were conducted in English and Spanish language. Before starting the interviews, interviewees were asked for their preferences of language and accordingly in that language interviewed. The interviews in the first round were documented by note taking of the interviewer, since the setting at the beach did not allow to record the audio due to the prevailing wind. The second round of interviews took place were audio recorded with the permission of the interviewee. Table 1 shows a summary of the interviews.

Table 1 Summary of interviews from the first and second round.

First round of interviews	In total 17 people were interviewed (10 women, 7 men)
	Ages consisted of 'under 18': 2, '18-24': 1, '25-39': 9, '40-60': 4, 'over 60': 1
	Nationalities represented were 12 Spanish, 1 Swiss, 1 New Zealand, 1 Danish, 2 UK
	9 interviews were conducted in Spanish, 8 in English language
	Average time per interview: 20 min
Second round of interviews	Five people were interviewed (three women, two men)
	Ages consisted of 'under 18': 1, '18-24': 1, '25-39': 2, '40-60': 1
	Nationalities: Spanish (2), British (1), Danish (1), Swiss (1)
	All interviews were conducted in English (in explicit agreement with the interviewees)
	One person was interviewed on the phone, four in person in public places in Valencia
	Average time per interview: 35 min

Through purposive sampling from the first pool of interviewees, five interviewees were specially selected to be interviewed to create a wholesome representation of the diverse participation at the beach clean-up. Table 2 presents the demographic data and assign each interviewee a number to which he or she will be referred to henceforth.

Table 2 Demographic data of interviewees in the second round.

Interviewee 1	Nationality: Swiss
	Age group: 25- 39
	Gender: male
Interviewee 2	Nationality: Spanish
	Age group: 40-60
	Gender: male
Interviewee 3	Nationality: Spanish
	Age group: under 18
	Gender: female
Interviewee 4	Nationality: British
	Age group: 25-39
	Gender: female
Interviewee 5	Nationality: Danish
	Age group: 18-24
	Gender: female

In the second interviews attention was paid to ‘understanding’, ‘motivation’, but special focus got paid to ‘behaviour’, to identify whether and what behavioural changes happened. As the interviewees’ answers from the first interview were accessible, the interview took reference to the previous information provided, investigating if any changes in the themes of ‘motivation’, ‘understanding’ and ‘behaviour’ had occurred since the clean-up. To exemplify the question, “*Did you actively try to change anything in your plastic behaviour since participating in the beach clean-up? If so, what?*” was followed up with “*In our interview at the beach clean-up you said you could imagine to: “(i.e.) start using a reusable water bottle instead of buying single-use bottled water” as a concrete possible change in your everyday activities. Was that implemented? If so, how did it go? Was there anything that hindered you?*” Moreover, questions from the first interview, inquiring about understanding and motivation were repeated to see if people have engaged further with the topic, and to what new understanding that potentially had led. To exemplify the answer to the repeated question: *Where do you think the plastic waste you found at the beach came from? What is the source of this plastic waste?* collated with the earlier answer given, could provide insight as to whether the person has engaged in the topic of the question since which has implications on the frames. The full set of questions are found in appendix II.

3.4 Data Analysis Procedure

For the analysis, an iterative and deductive approach was pursued. This enabled the analysis to find understanding and concepts of plastic frames deriving from the interviewed participants. Thus, the analysis was guided mainly by empirical findings as well as theory.

Focus on the themes ‘understanding’, ‘behaviour’ and ‘motivation’ construing the frames, drove the analysis to systematically construct and describe the structure and content of the frames. A content analysis was performed which aimed to produce condensed descriptions of the contents and structure of communication used in the interviews (Raitio, 2007; Peuhkuri, 2004).

Before starting the analysis, the interviews were transcribed and translated to English language by the researcher.

In the first step of the analysis, key terms utilised in frame related literature were searched for, such as understanding, interests, values, perceptions and beliefs (Schön & Rein, 1994). Framing is influenced by the interviewee’s experiences, backgrounds, and other sources, meaning, each interviewee likely creates their own understanding of doing the same activity at the beach clean-up (Entman, 1991). This exemplifies the constructivist worldview behind frame theory.

Meaning or references to the described themes were coded. Moreover, the analysis searched for justifications and critique of one's own and others' actions as well as repeated expressions and meanings. Such repetition, also called salience, means “making a piece of information more noticeable, meaningful, or memorable to audiences” (Entman, 1993, p. 53). Hence, the frames of the interviewees were detected in the analysis by probing for particular words, visual images and metaphors, that consistently appeared in the interviewees’ speech (Entman, 1991).

Information on action and new plastic behaviours from the second interviews were considered as a test of the accuracy of the previous stages of frame analysis. “The final test of whether a [...] frame has been correctly described is if these reconstructions help the analyst to understand why individual participants and social movement organizations act the way they do.” (Johnston, 1995, in Fisher 1997, in Raitio, 2007).

Lastly, the findings of each interview were collated with each other to identify overarching themes, meanings and saliences in the frames. Through this process, eventually the plastic frames of individuals deriving from their participation at the beach clean-up were identified and described through the findings of the analysis.

3.5 Methodological Reflections

Whilst the study researched experiential learning activity, the thesis project itself is a learning process, and experiential learning activity of its own, so to speak.

Through exploring the potentials of beach clean-ups to shift plastic frames, I got to know in-depth diverse perspectives and understanding. What I found striking was, that despite attending the beach clean-up due to various motivations and not all out of environmental concern, all participants seem to connect on the understanding that plastic in the ocean is detrimental to the environment and its protection is worth fighting for. The people I met in the study seemed strongly connected to the beach and ocean. This can be explained that people attending the beach clean-up are living in Valencia and surroundings, which made the beach and the ocean part of their space of living. Research on this found that people residing near beaches engage more in waste-reduction approaches for the sake of ocean protection (Kiessling et al., 2017). In potential further research, it would be interesting to explore the impacts of beach clean-ups on individuals that usually do not access the beach or ocean in their area of residence.

I chose frame analysis as a methodological approach to investigate individuals' frames by the experience of the beach clean-up. A common criticism on specially frame analysis but generally on many social science methods of inquiry, is that the findings are based on the interpretation, hence frames of the researcher. Whilst I find that to be a valid argument, I experienced in the thesis project that especially when focusing and exploring frames, it constantly reminded me to be mindful of my own interpretive lenses. I conclude, that in such an investigation like my thesis report, there is no such thing as frame-neutrality but that engagement with frame theory is helpful to be mindful as well as strive towards transparency as much as possible.

Another reflection on the research is that I based all conclusion and frames on the narrative of the participants. Not only where the interviewees from various demographics, but as well their proficiency of language and expression (when speaking either in Spanish or English as another language than their native language) as well as rhetoric used were diverging. It was a challenge for me at first when considering if the i.e. expressed high motivation was rooted in an environmental concern or rhetoric or even cultural approach to express motivation. This relates again to my interpretive lenses but as well to my position as a researcher in a culture that is different from mine. This research project has thought me more than conducting academic research and greatly contributed to my personal development and reflections.

4 Empirical data and analysis findings

The analysis of the collected data took place in two stages. In the first step, seventeen interviews conducted on the beach clean-up event on the 10th of March 2019. The findings are presented in Section 4.1.

The second stage of the analysis, starting from Section 4.2, presents the findings of the frames identified from the five in-depth interviews that took place approximately five to six weeks after the first interview.

4.1 Empirical data and analysis findings from 1st interview round

The information gathered through the seventeen interviews on the day of the beach clean-up event, gave a insights of the event activity as well as participants. In the analysis focused on the themes of understanding, emotions, motivation, responsibility and viewing plastic findings are presented here in a comprised summary along quotes from the interviewees. The findings are essential for approaching the extraction of frames in the second step of the analysis.

4.1.1 *Understanding*

Participants have medium to high knowledge of the environmental impacts of the plastic crisis but limited to no knowledge on how the plastic entered the ocean or beach. All individuals were layperson, in the field, meaning no environmental experts. The sources of knowledge were the news, social media and documentaries.

“The plastic in the ocean is pollution. It’s an intoxication of the food system.”

“I don’t really know [how the plastic entered the ocean] but I figure that some ships don’t have waste bins onboard and then they just dump their waste in the ocean, I guess.”

“I watched Blue Planet II and learned a lot of facts there.”

4.1.2 *Motivation*

All participants felt that as an individual one can contribute to combating the plastic crisis. Participants say they feel motivate to contribute to combatting the plastic crisis and gave suggestions on how to contribute in everyday life. Ideas were mainly about reducing plastic consumption, separating waste at home better and attending more beach clean-ups. A minority felt motivate but could not think of direct action he or she could take in everyday life.

“I want to stop using plastic bottles. Also, I want to use fabric bags instead of single-use plastic bags at the supermarket; especially at the fruit and vegetables section. And I don’t want to buy food wrapped in plastic anymore either.”

“ I think I could pay more attention to separating my waste and recycling better at home!”

“Oh, I had hoped you would tell me! Honestly, I don’t really know what I can do more than recycle at home!”

4.1.3 *Emotions*

First-time participants named their first emotions to be ‘shocked’ and ‘outraged’ of the findings; returning participants’ feelings were often more ‘frustrated’, ‘concerned’ and ‘sad’. Reoccurring was the feeling of ‘disgust’ about the waste that is found, as well as ‘human guilt’ because of the man-made nature of the plastic crisis.

“We have lots of work to do. Incredible how it went from our grandmas with fabric bags for the bread to now, where there is plastic everywhere.”

“I don’t understand what all this stuff is doing here. I feel shocked and worried but also disgusted by this.”

“It’s a beautiful place and we’ve been so careless. It’s not fair.”

4.1.4 Responsibility

The most given answer by participants was assuming the plastic crisis is “everybody’s responsibility”. Further, seemingly anonymous stakeholder like “governments”, “private companies” or “multinationals” were called responsible.

“Everybody because everybody is contributing.”

“The system should do something, but we all are to blame.”

“The government and the educational system are most responsible, I would say.”

“It’s a shared responsibility. So, it’s everyone’s responsibility.”

When pointed to personal consumption, all interviewees said they see a connection, adding that they felt stressed or bad about it. Often the affirmation was directly followed by a justification.

”Of course, I am – everybody is”.

“ I think so, yes, but I recycle at home”

4.1.5 Viewing plastic

Alternative views on plastic rather than waste were contaminates, pollutants and mismanagement of plastic. Participants commonly differentiated between plastic and single-use plastic. Whilst single-use plastic was strongly criticised, plastic materials with a long-term purpose is seen as less problematic and to have *raison d’être*.

“Plastic is a pollutant for sure. I mean, you could recycle it but the resources that go into it are not sustainable.”

“It’s crazy once you realise that plastic is everywhere and how long it lives on after we think we got rid of them. We throw it away and think we solved the problem with it. We don’t realise that “away” means the ocean.”

“Plastic has also good uses but these unnecessary single-use plastics are the problem causing this pollution.”

4.1.6 Summary of the findings of the 1st interview round

In this first round of interview, it was seen that nearly all interviewees had high knowledge about the plastic crisis and its detrimental impacts on the environment. Further, the clear majority had difficulties to pin-point the origin of the plastic. Plastic was seen critical, with most participants coming up with the view or agreeing to the view of pollutant. The responsibility was commonly attributed to “everybody”, suggesting a shared responsibility with little self-reference. All interviewees felt motivated to contribute to combatting the plastic crisis, while some had more feasible ideas how to do so in everyday life and others less feasible or no ideas at all.

4.2 Empirical data and analysis findings from 2nd interview round

The second stage of the analysis’ findings from the purposefully sampled five interviewees are presented. To the original themes of ‘understanding’, ‘motivation’ and ‘behaviour and action’, now the categories ‘emotions’, ‘responsibility’ and ‘viewing plastic’ are added for

a further in-depth unravelling of the frames. The interviewees' demographic data were presented earlier in the chapter and from now on, interviewees are referred to with numbers. Again, attention must be called to the fact that all themes are largely intertwined, and the presentation here aims to enhance structure for a better understanding. The key terms creating the frames are highlighted in bold and summarised in the end of each presented interview. Again, original quotes are used to illustrate the data and increase the transparency of the analysis.

The analysis of the interviews, focusing on the three key themes of Understanding, Motivation and Behaviour, with the overarching themes of Emotion and Responsibility, led to the identification of three plastic frames: Frame I: Pollutant, Frame II: Awareness, and Frame III: Resource. All frames were identified from the interviewees' narrative. Salient and relating themes were grouped, leading to the identification of one prominent frame found in Interview 1, 4 and 5. Interview 2 and 3 both showed different frames which will be presented next.

4.2.1 Frame I: Pollutant

This frame was found in Interview 1, 3 and 5 (three out of five interviews) and is hence, the most commonly found frame in this study. In this frame, plastic in the ocean is recognised as very detrimental and worrisome. Plastic in the ocean is understood as pollutant rather than simply waste because of its adverse impact on the environment and marine life, due to its contaminating capacity and long durability. In the frame, a feeling of personal responsibility is active, as well as motivation to combat the plastic crisis through individual behaviour. The frame contains medium to high background knowledge on the adverse and detrimental impacts that the plastic in the ocean has on the environment and marine life.

Emotions concerning the plastic in the ocean reflect on this in-depth knowledge of the plastic crisis. Besides concern and sadness, anger, frustration, disappointment and guilt were felt. Further, a feeling of disgust was felt towards the material of plastic. The emotion of guilt connected to the personal responsibility individuals acknowledge in the frame. In the frame individuals feel highly motivated to contribute to combating the plastic crisis through changing their own plastic behaviours. Motivation predated attending the beach clean-up, yet the experience of the beach-cleaning activity confirmed or strengthened this motivation. After the beach clean-up, individuals following this frame developed and implemented new pro-environmental plastic behaviours.

4.2.2 Frame 2: Awareness

This frame was reconstructed by the narrative of interviewee 2. This frame contained basic to no knowledge on the plastic crisis yet a basic comprehension of plastic in the ocean as adverse and detrimental. Plastic is understood as pollutant because of its adverse impact on the environment and marine life due to its contaminating capacity. The emotions connecting to the plastic in the ocean and at the beach were sadness and disappointment but no disgust towards the material. In the frame responsibility lies primarily with externals such as governments, and the education system. The frame hinted but was not explicit on a self-reference when calling 'people' and 'everyone' responsible. The frame shows a general concern about the plastic crisis and a general motivation to combating the plastic crisis, yet the limited knowledge and lack of further engagement in the topic connected to no self-reference in terms of responsibility, leading to the inability to develop any specific actions.

However, whilst the individual did not actively change plastic behaviours, the frame started to highlight and consciously notice plastic. Without actively seeking it, the individual became conscious of plastic in everyday life and felt growingly frustrated by the plastic.

4.2.3 *Frame 3: Resource*

This frame was found in one of the interviewees. The frame built on a medium to basic knowledge of the plastic crisis and the fundamental comprehension of the plastic crisis as adverse and detrimental for the environment and marine life. Next to understanding that plastic in the ocean is adverse for the environment, plastic in the ocean is understood as a waste of resources of the economy. The emotions connected to this were overwhelm and frustration, yet no disgust towards the material itself was felt. In the frame, the responsibility lies with the industry and multinationals, and no reference to personal responsibility is made. Notwithstanding, the frame holds high motivation to contribute to combatting the plastic crisis and suggests boycotting buying plastic. Plastic in the ocean is understood as adverse for the environment, but additionally as a waste of resources of the economy.

5 Presentation and Discussion of Findings

This chapter presents and discusses the main findings of the research. The findings are presented following the Research Questions. First the sub-research questions' findings are discussed, followed by the discussion of the main research question's findings.

5.1 What does an individual's frame of plastic encompass after the participation at the beach clean-up?

The analysis in the last chapter identified three frames, which will be discussed one by one with reference to the theory and concepts.

5.1.1 Frame I: Pollutant

Table 3. Summary of Frame I: Pollutant

Understanding	Motivation	Emotions	Plastic view	Responsibility	Behaviour & action
Understanding plastic in the ocean/beach as adverse and detrimental to environment and marine life. Medium to high knowledge on plastic crisis	High motivation (confirmed or strengthened through the beach clean-up activity)	Concern, sadness, anger, frustration, disappointment, guilt, disgust	Plastic seen as pollutant because of its detrimental environmental impact, contaminating capacity and long durability.	Shared responsibility, reference to personal responsibility	Behaviour change occurred: pro-environmental plastic behaviours adopted

In this frame, the individual went through all stages of Kolb's Experiential Learning Cycle (Kolb, 1976). The concrete experience of the beach cleaning activity triggered negative emotions and motivation to do something about the problem. Within the frame, the individual views the plastic material and not only the waste management itself as detrimental. Especially, the emotion of frustration, disgust and guilt came up repeatedly and were later recalled when dealing with plastic in everyday life, e.g. one participant that felt disgust and anger at the beach clean-up was later reluctant to touch plastic in the supermarket, as well as feeling guilt when having plastic items at home. In Frame I, this relation to plastic then became a key inducement to adapting plastic behaviours and reducing consumption. Similar findings are presented by Muralidharan and Sheehan (2017), that show that guilt affects and drives individuals' plastic avoidance behaviours..

Reflective observation inquired in the first and second interview helped to understand the sources of the plastic and identify responsibility. In this frame, the individual assumed responsibility as shared and made the connection to themselves personally. In the abstract conceptualization needed for answering the questions of the first interview, the individual sought potential solutions she or he could take on an individual level, drew a connection to their own consumption, and planned actions to reduce said consumption. In the active experimentation stage between the first and second interview, the individual implemented and tested the developed ideas of reducing their plastic consumption.

In this frame, the individual gained intrinsic motivation as seen in the adoption of new and prospectively long-term pro-environmental plastic behaviour as seen i.e. when individuals invested in a reusable water bottle to avoid buying packaged water in single-

use plastic bottles. This motivation worked as a prerequisite to understand and thereupon shape pro-environmental plastic behaviours (Pelletier et al., 1998). Further, the motivation was a key factor in influencing the individual's intention to commit to a pro-environmental plastic behaviour long-term (Ryan & Deci, 2000).

5.1.2 Frame II: Awareness

Table 4. Summary of Frame II: Awareness

Understanding	Motivation	Emotions	Plastic view	Responsibility	Behaviour & action
Understanding plastic in the ocean/beach as adverse and detrimental to environment and marine life. Medium to no knowledge on the plastic crisis	Motivation gained through the beach clean-up activity	Sadness, disappointment, growing frustration	Plastic seen as pollutant because of its detrimental environmental impact, contaminating capacity.	External responsibility, vague reference to personal responsibility	No active behaviour change was sought or implemented but passively became aware of plastic in everyday life and the feeling of frustration evolves

In this frame, it is less feasible to define how the individual went through the Experiential Learning Cycle. The first stage of concrete experience of the beach cleaning activity showed to have triggered somewhat negative emotions and a reasonable motivation to do something about the problem. Yet in the reflective observation stage triggered through the interviewer's questions about where the plastic in the ocean originated, the individual struggled to think of the sources and origin and had no answers to the questions.

Nevertheless, the individual assumed the responsibility lies mainly with externals like "people", "governments" and "the educational system" and drew no direct connection to any personal responsibility. Attributing the responsibility firstly to "everybody" goes in line with the earlier research on plastic framing in German newspaper articles, where responsibility of an individual is referred to on a macro-societal level. Schröder (2015) had pointed out there that referring to a generalised or "humans that litter" removes the individual's direct relation to the problem and partially alleviates the individual's responsibility, which is recognised in this frame. Hence, in the stage of abstract conceptualization, the individual was unable to develop ideas as to how he can directly, through his personal actions, help to combat the plastic crisis. The individual in the frame did not try to actively seek more information or engage in the topic, despite experiencing negative emotions towards the plastic in the ocean. This could suggest a cognitive bias where the individual generally understands that the plastic in the ocean is detrimental, but does not seek further information which would help draw the connection to personal plastic behaviours. It is left to interpretation if this happened purposely or unintentionally by the individual.

Generally, the active experimentation stage was here difficult to grasp. Whilst there was no behaviour change seen (that would have made it more feasible to study the stages), it cannot be argued that the stage did not take place; it might have taken place without resulting in change. The study recognised that in this frame it was not possible to grasp all

stages of the learning cycle within the scope and time frame of the thesis, but suggests that it needs to be further explored.

To show that the cycle had any effect in the change of behaviour of the individual, he would have to gain the understanding of personal contribution and power (which does not equal responsibility).

The process of the active experimentation stage was not transparent, and yet, whilst no plastic behaviours were actively adapted, the frame activated an awareness towards plastic in the individual's everyday life. The individual observed this, together with the emerging of the new emotion of frustration.

Frustration was a common emotion found in Frame I: Pollutant and Frame III: Resource. Therefore, it could be derived that Frame II is a developing frame towards Frame I, Frame III or another as yet unidentified frame. If the awareness of plastic in everyday life, together with the feeling of frustration, persists as an attentional bias (the tendency of perception to be affected by recurring thoughts), it can be assumed that it might lead to a crossover to another. Relating to behavioural sciences, scholars like Ajzen (Theory of Planned behaviour; 1991), and Prochaska and Di Clemente (Transtheoretical Model; 1983) argue that behaviour change happens by going through several stages in which awareness is the first stage. This argument may be substantiated by the reflecting anecdote of another interviewee. She, who has by now changed her plastic behaviour drastically, explained that a year ago she did not care and was unaware of the plastic crisis. She said she became aware of the problem when she saw someone pick up plastic litter on the street and she started asking herself why this person would do this. She said, through this experience she gained a problem awareness and started to get conscious of the plastic crisis which induced her need for behavioural change.

Frame II fits into the precontemplation stage of the transtheoretical model (Prochaska & Di Clemente, 1983), in which people do not intend to act in the foreseeable future (defined as within the next six months). In the stage it is described that individuals are often unaware that their behaviour is problematic or produces negative consequences (Prochaska & Di Clemente, 1983). This was found in the narrative of the frame. The next stages in the model are induced through awareness of the problem, the development of which began to be seen in the frame when the individual became conscious and felt frustration in relation to plastic in his everyday life. It may be argued that if the individual continued going through the stages of the model, he would arrive at the stage of action where currently individuals of frame I are located. In this stage, people have recently changed their behaviour through exploration (defined as within the last six months), and intend to keep moving forward with that behaviour change.

In this frame, the individual did not gain the intrinsic motivation required for a self-determined and lasting behavioural change (Pelletier et al., 1998). The frame rather comprised an extrinsic motivation which, however, showed a development in the period between the first and second interview. The initial extrinsic motivation was externally regulated because the individual attended the beach clean-up to see his friends (external rewards or instrumental purpose) and not because of interest in the plastic crisis (Wigfield, Eccles, Roeser, & Schiefele, 2009 in Karpudewan & Khan, 2017). However, throughout the course of the beach clean-up activity, the extrinsic motivation evolved to an identified regulated state when the activity was perceived to be valuable (Deci & Ryan, 2000). According to Karpudewan and Khan (2017), once identified regulated behaviour is fully internalised, it leads ultimately to integration and intrinsic motivation. This leads again to the assumption that Frame II is a transitory frame towards Frame I or other.

5.1.3 Frame III: Resource

Table 5. Summary of Frame III: Resource

Understanding	Motivation	Emotions	Plastic view	Responsibility	Behaviour & action
Understanding plastic/beach in the ocean as adverse and detrimental to environment and marine life; and, as a waste of resources of the industry/ economy. Medium knowledge on the plastic crisis	High motivation (strengthened through the beach clean-up activity)	Feeling overwhelmed, frustration	Plastic in the ocean seen as waste of resources of the industry/ economy	External responsibility: industry (and multinationals), no reference to personal responsibility	Behaviour change occurred: pro-environmental plastic behaviours adopted

In this frame, the individual went transparently through all stages of Kolb's Experiential Learning Cycle (Kolb, 1976). The concrete experience of the beach cleaning activity triggered the emotions of overwhelm and frustration, and the motivation to do something about the problem was created. In the Reflective observation stage, the source of the plastic in the ocean was identified, which built the assumption of external responsibility. The plastic in the ocean deriving elementary from the industry producing plastic, is understood as a waste of a resources. In the stage of abstract conceptualisation, the individual sought potential solutions she could take on an individual level and drew a connection to her power as a consumer, suggesting avoiding plastic consumption until the industry changes its approach. This view of plastic in the ocean as a loss of resources and an economic drain is an emerging argument from the *Circular Economy* movement. A Circular Economy presents an alternative, more sustainable model to the traditional linear economy which follows the path of make, use and dispose (Ellen MacArthur Foundation, 2017). In contrast to this, in a circular economy, resources are kept in use for as long as possible, extracting the maximum value from them whilst in use, then products and materials are recovered and regenerated at the end of their service life (European Commission, 2018; Ellen MacArthur Foundation, 2017). The frame, relating to this concept in a broad sense, also connects to the study of Fröhlich et al (2018). In this study, it was found that the individual's detachment from the production and post-consumer stages of plastic anchors conventional plastic behaviours. Through the experience of the beach clean-up, the individual developed an awareness of the post-consumer stage of plastic, which influenced the plastic behaviour. In the active experimentation stage, the individual implemented and tested the developed ideas of avoiding plastic consumption whenever possible, until the industry changed their approach, as well as picking up plastic on the streets.

In this frame, it is difficult to define what type of motivation has been gained. On first glance, it looks as though the frame builds on Extrinsic Integrated Motivation as the individual performed the new plastic behaviours for the sake of rewards or constraints on the industry (Deci & Ryan, 2000). On closer inspection, however, it can be recognised that the individual performs the activity for her own sake out of interest and a desire to protect the ocean, which builds a strong case for intrinsic motivation.

The answers the sub-research questions 1 (What does an individual's frame of plastic encompass after the participation at the beach clean-up?) are manifold. What was found as cross-frame relevant is the understanding of plastic in the ocean as detrimental to the

environment and a motivation to contribute to combating the plastic crisis. Whilst frame I (Pollutant) has a pronounced understanding of personal responsibility, Frame III (Resource) acts out of frustration of the current plastic resource management. In Frame II (Awareness) a development of the understanding that places the plastic crisis in context to plastic consumption is seen through the emerging of awareness of plastics in everyday life and an associated frustration.

5.2 What are changes in behaviour concerning plastic after the experiences at the beach clean-up?

In two of the three identified frames, it is found that the activity of the beach clean-up had an influence on individual's active plastic behaviours.

In Frame I, individuals initially planned to change their plastic behaviours in everyday life and implemented such changes. Most commonly, plastic bags and other single-use plastic were avoided by starting to carry own containers such as reusable bags and water bottles. In Frame III, Resource frame & No direct responsibility/ institutional responsibility, the process was similar of planning and adapting plastic behaviours, namely, avoiding buying plastic wherever possible and picking up litter on the street. Two of the interviewees (representing frame I and III) started making their own cosmetic products in an attempt to avoid having to buy plastic-packaged cosmetics such as shampoo and toothpaste. Barriers to implementing a behaviour change of avoiding plastic were availability (i.e. no plastic-free products in local stores) and convenience (i.e. stores with plastic-free products not close by). These findings are reinforced by the findings of a study of Sun et al., (2017), investigating pro-environmental behaviours using the example of plastics bag utilization, which showed that convenience often outperformed factors of the theory of planned behaviour (i.e., attitudes, subjective norms, and perceived behavioural control; Ajzen, 1991) by being most strongly associated with the intention of using plastic bags (Sun et al., 2017). Relating to this, a study by Beitzel-Heineke et al. (2017) found that alternatives to plastic products (e.g. package-free stores) are seen as inconvenient and thus rendering the plastic option attractive (Beitzel-Heineke et al., 2017). Those findings support the findings found in this frame. For one, interviewees found that their local shops did not offer sufficient plastic-free alternatives, and shops that did were often further away.

In Frame II, the individual continued to routinely use plastic, despite a pronounced awareness of the associated problems which has been identified as a cognitive bias. Due to the diffusion of responsibility, the individual drew no direct responsibility of changing his plastic behaviours. In the frame, the idea of changing plastic ideas was perceived as effortful. This relates again to the convenience of the habit of where and how to shop, as found by Beitzel-Heineke et al. (2017).

In summary, the identified obstacles for behaviour change were diffusion of responsibility, convenience of plastic usage, strong plastic habits, shortcomings on knowledge on how to implement alternative plastic behaviours, and a lack of availability of alternatives to plastic.

Answering the sub-research question, it is concluded that active changes in behaviour concerning plastic after the experiences at the beach clean-up were seen in Frame I and III. In both frames, individuals planned and implemented pro-environmental plastic behaviours, foremost by reducing their plastic consumption. The individual following frame II, whilst he did not actively try to make changes in his plastic behaviours, did become more aware of plastic in his everyday life. Such awareness is described in behaviour science as the first step towards behavioural change (Ajzen, 1991; Prochaska & Di Clemente, 1983).

5.3 What are the potentials of experience-based learnings at beach clean-ups to shift individual's frame of plastic?

In all three frames, a development of the individual's plastic frame was found, leading to a change in intentional plastic behaviour or unintentional plastic awareness. Individuals of the frames I and III went through all stages of Kolb's Experiential Learning Cycle (Kolb, 1976). Hence, the plastic frame shift was more profound, leading to concrete plastic behaviour changes. Strong motivation to contribute to combating the plastic crisis were created, which shaped their new plastic behaviours (Deci & Ryan, 2000; Pelletier et al., 1998). In contrast, the progress of the individual of frame II though the learning cycle was less clear. In particular, the last two stages were unable to grasp and thus, the individual did not actively seek to adapt plastic behaviours.

This leads to the conclusion that knowledge and an environmental attitude are prerequisites for transparently fulfilling the Experiential Learning Cycle, or for experiential learning to contribute to individuals' shift in frame. Individuals in frame I and III either had the necessary knowledge present, or felt sufficiently motivated to actively search for further information that would shape their personal plastic behaviours. The individual in frame II that was unable to grasp the development through the Experiential Learning Cycle lacked knowledge on the plastic crisis, which hindered making a connection to personal contribution that could have led to behavioural change.

This observation leads to the conclusion that the beach clean-up event as designed by the NGO studied in this research offers too little focus on transferring knowledge about the background and contributing factors of plastic pollution to laypeople or people new to the topic. The individual in Frame II himself in fact highlighted the educational system as responsible for the plastic crisis, suggesting that the topic of plastic pollution and waste management should be covered in the compulsory curriculum in both primary and secondary school education. A shortcoming of the experience-based learnings at the beach clean-up was the limited information on the background provided by the NGO. As argued by Dolan et al. (2012), promising interventions are those that seek to change mindsets (i.e. create intrinsic motivation) alongside changing contexts. The beach cleaning activity was shown to create strong motivation and change individuals' frames of plastic to be more critical. However, not in all cases was this motivation brought into personal context, and in these cases no behavioural change took place.

Nevertheless, whilst frame II did not present any changes in plastic behaviour, it was found that the beach clean-up activity sharpened the awareness of the problem in the frame, which could be a first step in the process of behavioural change.

Frame I and III both presented a development in the plastic frame. Both frames are very conscious about encountering plastic items in everyday life situations, drawing connections to the plastic items found at the beach. The beach clean-up strengthened their motivation to combat the plastic crisis, and to change their behaviours accordingly by avoiding and reducing plastic consumption. In both frames, knowledge and an environmental attitude were identified as prerequisites for engaging in the beach clean-up. It is noted, that participants in these frames had already had an interest in engaging with the topic prior to attending the beach clean-up, as this builds in many cases the motivation to come to the event.

The experience at the beach clean-up impacted the individuals' relation to plastic negatively which led to behavioural change, comparisons can be drawn to the methods of

Social Learning and Nudging. The behavioural changes in Frame I and III and potential future behaviour changes in Frame II, happened due to an increase environmental awareness and the motivation to contribute to combatting the problem (hence, mindsets were changed). In comparison, the results of the Social Learning and Nudging methods showed that if at all, individuals changed their behaviour due to economic convenience or other incentives. Through the beach clean-up activity context of plastic consumption got linked to the plastic crisis (hence, context was changed) and individuals did not act because of paternalism.

To summarise and answer the research question, (What are the potentials of experience-based learnings at beach clean-ups to shift individual's frame of plastic?) it is concluded that the experience-based learning at the beach clean-up influenced strongly the frame of individuals that had a pre-existing interest in the topic of the plastic crisis, as seen in Frame I and Frame III. Through the hands-on experience at the beach clean-up, individuals were sensitised on the extent of the plastic crisis, the need for action and fostered their motivation to contribute to combatting the plastic crisis, which ultimately led to behavioural change. The individual following frame II had limited interest in the topic before attending the beach clean-up. The experiences at the beach clean-up lead to a problem awareness to the plastic crisis, and this awareness in the frame created a consciousness accompanied by a growing frustration of massive quantity of plastic in his everyday life.

6 Conclusion

The overarching question behind my research is: How can individuals change their perception of plastic, understand personal responsibility and change to new pro-environmental plastic behaviours within the given system of the current plastic crisis? Whilst the plastic crisis is recognised on policy-making level and efforts to implement changes are seen, in a consumer-driven market a bottom-up approach is crucial to drive the demand for plastic-free consumption.

Based in the field of environmental communication, my question relates to the facilitation of sustainable development, in particular to sustainable resource management and environmental protection. A common question addressed in environmental communication is how individuals can be motivated to adapt to new environmental behaviours and systems. This thesis contributes to the understanding of how citizen science projects, such as beach clean-ups, can reframe plastic by shaping awareness, motivation, responsibility and ultimately the behaviour of individuals.

In this study, I investigated how a reframing of plastic can be facilitated through experience-based learning at a beach clean-up. I used frame analysis to gain access to the understanding of plastic, motivation to contribute to combating the plastic crisis and ultimately, potential pro-environmental plastic behaviours of beach clean-up participants. The frame analyses yielded three different frames; while in Frame I, behavioural change was found due to the understanding of high responsibility and guilt, the individual following Frame III changed her behaviour out of frustration with the current system and mis-management of plastic as a resource. Frame II was found to be an intermediate frame, entering the course of behavioural change by having gained a strong awareness of the problem through participation in the beach clean-up.

The study showed that experience-based learning at beach clean-ups has the potential to directly impact participants' plastic frames and subsequent plastic behaviours. An identified prerequisite for this, however, is an existing environmental interest in the plastic crisis. The individual that attended the beach clean-up without prior in-depth knowledge or special interest in the topic did not actively seek to change his plastic behaviours. However, though he did not learn at the beach clean-up about how he could change towards pro-environmental plastic behaviours, the individual certainly became through the experience more aware of plastic as an environmental threat.

Even as the study recognised problem awareness as the first step to behavioural change, it was found that the beach clean-up did not provide sufficient supporting information on how to implement pro-environmental plastic behaviours in everyday life. The lack of input to help participants build on their acquired motivation to contribute to combatting the plastic crisis in their everyday life was identified a shortcoming of the beach clean-up activity as an intervention for behavioural change. Further, it was found that awareness, motivation and understanding of personal contribution were not the only relevant factors influencing plastic behaviour. The study found feasibility and convenience of implementing pro-environmental plastic behaviours as additional contributing determining factors.

Whilst the study found no direct links to an alleviation of responsibility through participating in the beach clean-up activity (for example, the idea of "offsetting" responsibility or guilt relating to plastic consumption through the activity), the diffusion of responsibility was not actively tackled. Lastly, the study acknowledges that, through the open and unspecified public invitation to the beach clean-up event, mainly individuals attend that have an (environmental) interest in the plastic crisis or a personal network that is interested in the field, but not the community at large. Nearly all participants interviewed in

the research had prior knowledge and motivation before attending the beach clean-up. Hence, the reach of the public beach clean-up events is found to be limited.

The research presented in this thesis points to interesting areas of further investigation in the field. Besides the public beach clean-ups researched in this study, the NGO offers private beach clean-up events advertised to schools, companies and other groups, where individuals attend not out of direct personal motivation. Here, it would be interesting to investigate the potential of reframing plastic through beach clean-ups with less autonomous participants. Further, it is suggested that in potential future research in the field, situational factors such as appropriate infrastructure should be taken into consideration. Additionally, it is suggested to bring into focus how implications of the social norms created at the beach clean-ups influence individual's plastic behaviours.

In addition to the foundations already laid by the organizing NGO, some further suggestions to create an ideal beach clean-up design from my perspective would include further exchange between the NGO staff as experts and the participants. Saying that, it would include that the participants are provided with more content to carry forward their motivation to shape pro-environmental plastic behaviour in their everyday life. Ideally, after the cleaning activity, small-group discussions would be facilitated, focusing on what items were found, the origin of the plastic, the problem of plastic as an environmental threat, the urgency of managing the crisis, and lastly, discussing what feasible actions in everyday life can be taken to help combat the plastic crisis.

From this study, it is concluded that beach clean-ups are a sound approach to raising awareness of the plastic crisis and reframing plastic on individual level. Further, it has promising potential to build motivation, responsibility and change plastic behaviours, yet this is conditional to other factors such as feasibility, convenience and availability.

Lastly, I would like to add to the conclusion that the plastic crisis is one of the major challenges of our time, and requires an interdisciplinary approach to find global solutions. In this process, cross-collaborative actions need to be built by stakeholders at policy making level and from industry and science, as well as by individuals, to address and lift the current diffusion of responsibility.

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Appendix 1 Interview Guide (first round)

Nationality Spanish <input type="checkbox"/> Other: Don't want to answer <input type="checkbox"/>	Age groups under 18 <input type="checkbox"/> 18-24 <input type="checkbox"/> 25-39 <input type="checkbox"/> 40- 60 <input type="checkbox"/> 60 plus <input type="checkbox"/> Don't want to answer <input type="checkbox"/>	Gender female <input type="checkbox"/> male <input type="checkbox"/> other: Don't want to answer <input type="checkbox"/>	No.:
Q1: How many plastic items do you normally buy when doing groceries? What are examples for single-use items you buy?			
Q2: Is this your first time at a beach clean-up or have you participated in a beach clean-up before?			
<input type="checkbox"/> First-time participant <input type="checkbox"/> Returning participant	How many beach clean-ups have you attended before (appr.):		
Q3: Why do you come to the beach clean-up? What motivated you?			
Q4: Before starting the clean-up (today), what type of waste did you expect to find on the beach?			
Q5: Does the type of waste you thought to find differ from the one you are finding?			
<input type="checkbox"/> Yes. <i>How/why?</i> <input type="checkbox"/> No. <i>How/why?</i> <input type="checkbox"/> Don't know			
Q6: What are your thoughts or opinions regarding the waste that you are finding?			
Q7: Is the waste that you are finding producing any emotions or feelings in you?			
<input type="checkbox"/> Surprised/shocked <input type="checkbox"/> Concerned/worried/sad <input type="checkbox"/> Angry <input type="checkbox"/> I don't know <input type="checkbox"/> Overwhelmed <input type="checkbox"/> Other:	Why?/ How?		
Q8: Do these emotions make you want to do something? What would that be?			
Q9: In your understanding how does plastic waste impact the beach and the ocean?			
Q10: Where do you have this understanding and information from? (On the top of your head)			
Q11: Where do you think the plastic waste you are finding comes from? What is the source of this plastic waste?			

<p>Q12: Who should be held responsible for the plastic waste that you are finding today? In which way are they responsible? [If the person gives several answers you could also ask him/her to rank their level of responsibility.]</p>	
<input type="checkbox"/> Don't know <input type="checkbox"/> The system (capitalism) <input type="checkbox"/> Consumers <input type="checkbox"/> Industry <input type="checkbox"/> Governments (policy makers) <input type="checkbox"/> Others:	
<p>Q13: Do you think that as an individual you can contribute to combating the problem of plastic waste? In which way?</p>	
<p>Q13.1: Is there anything that might hinder you?</p>	
<p>Q14: Are you in anyway responsible for this waste? To which degree and in which way?</p>	
<p>Q14.1 : Do you see any connections between your answer to Q1 about your plastic consumption and your responsibility? What is your opinion about this ' ' ' connection? How do you feel about this?</p>	
<p>Q15: Do you feel motivated to change your behaviour? If so, what are concrete possible changes in your everyday activities you could do?</p>	
<p>Q16: So far, we have been talking about plastic as WASTE. After this experience can you consider viewing plastic in any other way?</p>	
<p>Q16.1: Is this activity in any way making you think about plastic as a pollutant?</p>	
<p>Q17: Your opinion: What do you take away (key learning) from this beach clean-up?</p>	
<p>Q18: Do you have any additional thoughts or opinions that we haven't discussed, and you would like to share?</p>	

Appendix 2 Interview Guide (second round)

1. Did anything happen after we last met in relation to the clean up? Have you had any discussions or activities, what were those, what happened in them, did it affect you in any way?
 - 1.1 Did you notice any changes in your life style since you participated in the beach clean-up?
2. Did you actively try to change anything in your plastic behaviour since participating in the beach clean-up? If so, what?
 - 2.1 In our interview at the beach clean-up [Q15] you said you could imagine to “[Example: *bring your own bags to the supermarket to avoid plastic bags there and avoid buying foods wrapped in plastic*]” as a concrete possible change in your everyday activities.
 - 2.2 Was that implemented? If so, how did it go?
 - 2.3 Was there anything that hindered you?
3. Where do you think the plastic waste you found at the beach came from? What is the source of this plastic waste? [Q11] “[Example: *beach visitors, waste from homes/bathrooms that goes to the rivers and eventually in the ocean*]”

- *If different than initial answer:* I think that is a different answer than you gave at the Beach Clean-Up, right? Where do you have this information from and how did you get it? Did actively seek for more education on the topic?
4. Who should be held responsible for the plastic waste in the oceans?
 - 4.1 *If different than initial answer at Beach Clean-Up:* In our interview at the Beach Clean-up you said: “[Example: *everyone is responsible.*” Why do you think now this actor is more responsible/less responsible than the other?
5. How do you feel about plastic today?
 - 5.1 What are feelings you connect with plastic or when dealing with plastic?
 - 5.2 Do you think this differs from how you saw plastic before participating in the beach clean-up? If so, what/how?
 - 5.3 In our last interview you said, you could view plastic as [“Example quote” or pollutant], what are your thoughts about this point now?
6. Do you think that as an individual you can contribute to combating the problem of plastic waste? In which way?

- 7 How motivated do you feel about combating the plastic crisis today?
- 7.1 Can you tell any differences in your motivation now and the motivation you felt right after the beach clean-up?
- 8 Summarizing all that we have discussed now, what did the participation at the beach clean-up mean to you personally?
- 8.1 Do you think this clean-up activity had any role in the way you think about plastic or behave today?
- 8.2 Up to what degree have these changes occurred because of the beach clean-up?
- 8.3 Have there been other influences (activities, conversations, new input from the media) that you think played into this?
- 8.4 Would you recommend people you know to attend the beach clean-up?
If so, what would you say, how would you describe it? (Pitch)
- 9 Have you participated any Beach Clean-ups since the one in March? (Are you planning to attend more?)
- If yes, why?
- If not, why not?
- 10 Do you have any additional thoughts or opinions that we haven't discussed, and you would like to share?