

***Why do people make poor choices that lead to water pollution?***

Research Project (Investigation)

Esme Gritten

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My initial question is as follows:

**Why do people make poor choices that lead to plastic water pollution?**

This subject needs to be explored further as it is a problem that is exponentially affecting the world and its inhabitants, and changes need to be implemented soon otherwise the future will be at stake. Design thinking will hopefully help to solve this universal problem and this would be beneficial for the quality of life regarding everything in the future.



**What initially requires investigation is plastic waste and how it specifically impacts oceans.** My proposed methods of inquiry in learning about this include the use of articles, journals, insight reports and news reports. A multitude of sources will be examined and compared to ensure reliability.

**A second aim would be to understand the scope of human awareness surrounding this problem and the behaviour behind decision-making from an individual basis and perspective.** The utilisation of interviews to find out about consumer behaviour and general awareness towards this problem will be carried out, this will allow the exploration of individuals' perspectives regarding ethics and ecology.

**The third intention of this insights report would be to recognise the key areas where people might be able to adopt activist mentalities in order to take steps in reducing the effects of this problem.** To do this, design and visual culture must be researched as a contribution to a solution.

The plan is to monitor the link between the causes of the problem and the subsequent environmental and human impacts.

This investigation will be carried out through gathering data, including both primary and secondary sources, including interviewing individuals and coordinating focus groups, surveying and ethnographic exercises will be used. Multiple methods have been selected as they will be most appropriate towards obtaining a deeper, varied understanding of my chosen topic.

This will allow research to be supported or refuted and for comparisons to be highlighted and discussed further.



# Plastic Waste and its Effects on the Oceans

According to the Science History Institute (2020) the invention of plastic revolutionised how humankind functioned as it was “the first time human manufacturing was not constrained by the limits of nature.” This synthetic invention increased quality of lives exponentially, enabling people to obtain useful materials that were inaccessible beforehand. This material solution was a benefit to wildlife as they were spared following on from previously being a source for natural materials. (Science History Institute, 2020)

Plastic is made from creating solid structural bases out of “Carbon- rich chemical mixtures” (Buranyi, 2020). Humankind developed longer atomic structures to form synthetic structures of polymers, making more versatile, durable and lightweight materials.

This was an incredible solution, especially for packaging and preservative applications. Bakelite was one of the first resulting materials from plastic manufacturing, “Its inventors intended to use Bakelite as an insulator for electrical wiring, but quickly realised its near-limitless potential, advertising it as the

“material of a thousand uses”. This would prove to be a significant underestimate.” (Buranyi, 2020)

**“Through the plastics industry, we had an ever-growing ability to synthesize what we wanted or needed, which made reality itself seem infinitely more open to possibility”** (Freinkel, 2011)

This information deducts that worldwide advertising campaigns made populations aware of this versatile material which was sold as durable, cheap and disposable. Igniting the mass adoption and consumer demand for single-use plastics as it achieved an easy alternative for multiple daily uses. The never-ending uses of this material have made it “Critical to modern life” as plastic solutions have made almost everything people use “cheaper, lighter, safer and stronger” (Science History Institute, 2020).

Headlines support this material explosion with facts highlighted like: “Half of All Plastic That Has Ever Existed Was Made in the Past 13 Years”. (Zhang, 2017)



(Tubiermont, 2019)

**H**owever, plastics are a cause for concern, especially those that are considered single-use; used once then discarded. These plastics have been proven to end up in water systems and contaminate all water that people come into contact with, even the drinking water. (Senathirajah and Palanisami, 2019)

Leeson, the director of ‘A Plastic Ocean’ documentary suggests that plastics entering the oceans form extremely hazardous substances which leach into ecosystems, being carried around the world through circulating currents called Gyres, powered by the rotation of the Earth. (Leeson, 2016)

They continue to pollute our environment, leaching into water supplies and living organisms.

**“Water pollution is one of the main environmental issues that we are facing, as more than 70% of the Earth’s surface is water-covered.”** (Impulse, 2020)

The problems lie within the way they are discarded, when they could be reused and recycled into different things.

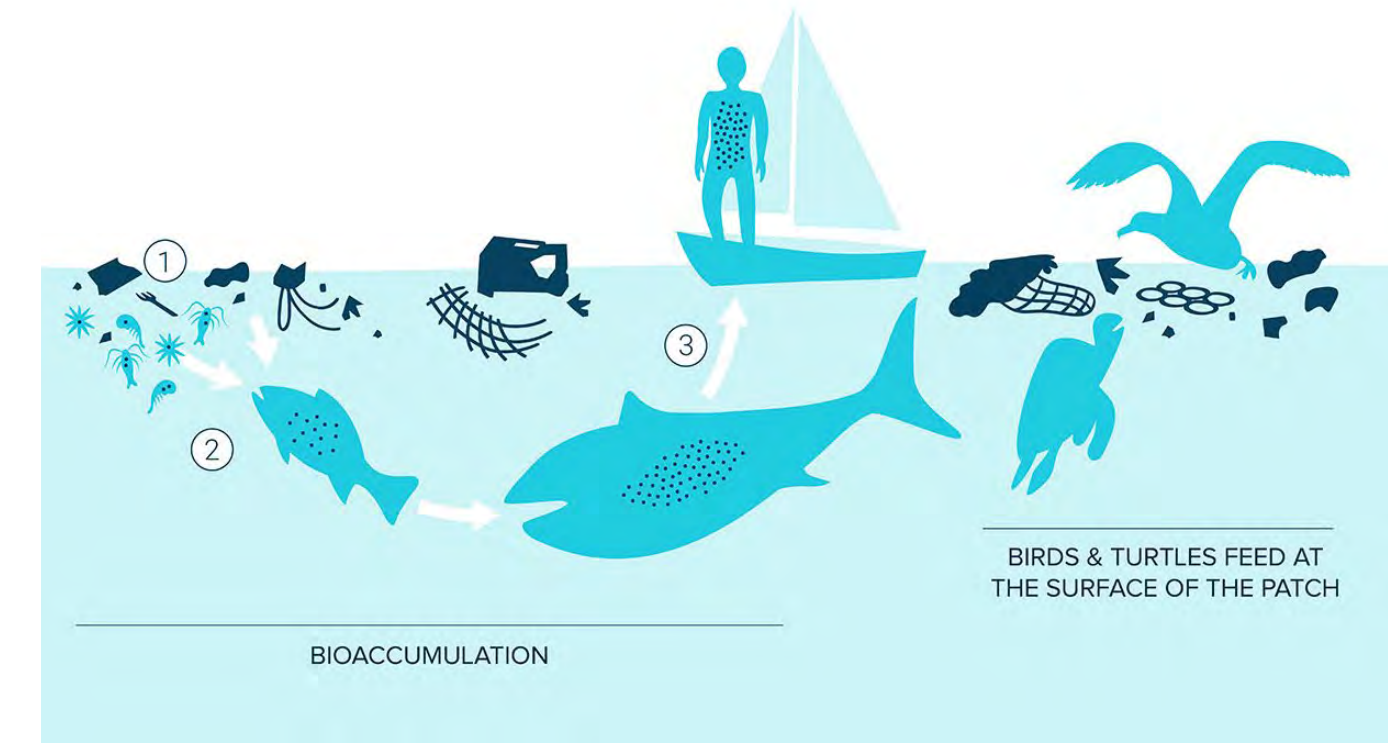
Senathirajah and Palanisami (In 2019) highlighted findings that the average human could be consuming 5 grams of microplastics on a weekly basis, this can be equated to the amount used to make a credit card.

What is even more shocking about this is the finding that highlights how most of this plastic is consumed from the water drunk, from both tapped and bottled water.

“The largest source of plastic ingestion is drinking water, with plastic found in water (groundwater, surface water, tap water and

bottled water) all over the world.” (Senathirajah and Palanisami, 2019)

This is evidenced further in academic studies, including that of Williamson et al’s finding in 2018 where it was discussed that 1769 plastic particles are consumed by the average person every single week. This information identifies how the plastic problem is global and how it is having the biggest impact on our water sources. (Williamson et al, 2018)



(The Ocean Cleanup, n.d.)



Van Cauwenberghe and Janssen (2014) further explore how plastics are not only contaminating people through water sources but through food aswell. These can have both direct and indirect contact with our oceans. "The annual dietary exposure for European shellfish consumers can amount to 11,000 microplastics per year." (Van Cauwenberghe and Janssen, 2014)

This causes great concern regarding the foods humans choose to eat. Bioaccumulation of plastic particles causes health implications including various Cancers, hormonal and Endocrine influencing problems and direct toxicity which is incredibly harmful organisms. Research has only recently been launched into the detailed effects plastics could have to human health in the future. (Ecologycenter.org, 2001)

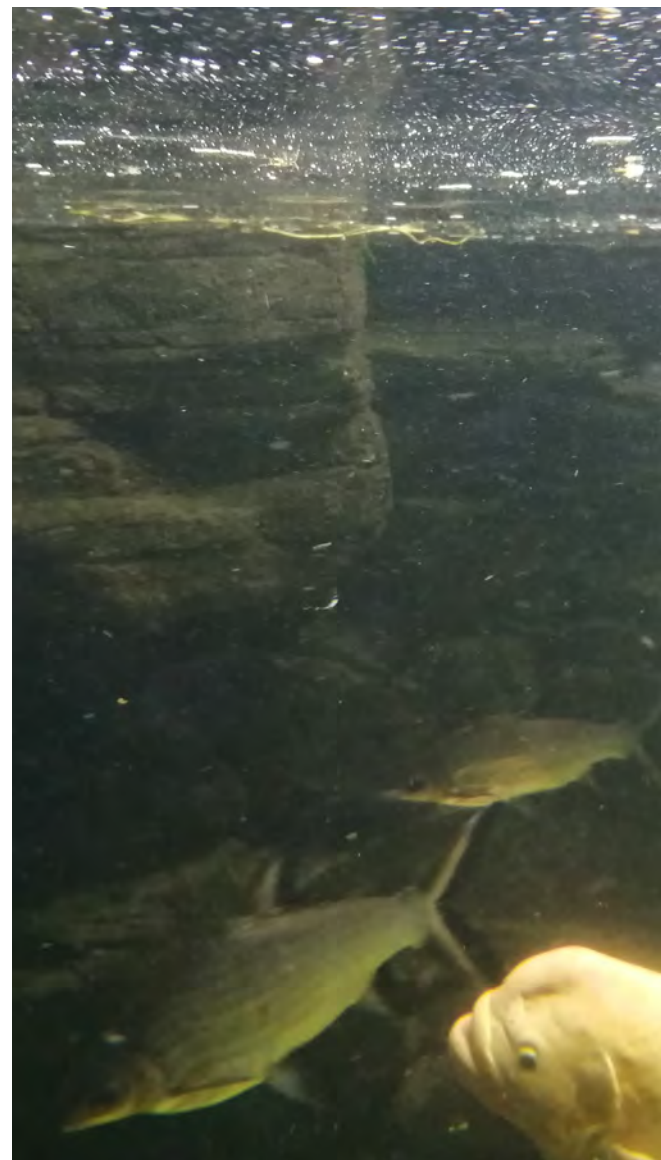
In evidence to the previous findings, plastic's omnipresence is a basis for entire economic sectors. It can be extrapolated that it will be an enormous task to try and counteract the problems plastic has created and diminish plastic consumption as it has been such a worldwide solution bringing mass benefits.

Everyone is taught from early childhood that trees are very important for sustaining life on this planet, however, trees are only responsible for about 28% of this process, 70% comes from the oceans, they are the "lungs of this [blue] planet". (TEDxKanata, 2018)

An initial finding from a survey (which will be further explored), highlighted how most respondents were surprised about this information.

Another huge plastic contaminant of our oceans are Nurdles, these are the "building blocks for nearly all plastic goods, from soft-drink bottles to oil pipelines. But as essential as they are for consumer products, nurdles that become lost during transit or manufacturing are also an environmental hazard." (Treviño, U. 2020)

Nurdle spills have occurred on numerous occasions and threaten marine life as they mistake the small plastic pellets for food, therefore these are ingested and influence the food chain, "It is estimated that more than 250,000 tonnes enter the ocean annually". (Treviño, U. 2020)



(Gritten, 2019)

***"...trees are only responsible for about 28% of this process, 70% comes from the oceans"***

Emily De Sousa  
(TEDxKanata, 2018)

(Gritten, 2018)



To clean up the oceans, the first step is to stop the problem at source, which stems from the production of plastic product demand and consumption levels.

Another problem identified is how less developed countries are less informed of the problem, for example; Fiji. However they could be informed, but do not have the necessary means or ability to change their ways significantly. (Leeson, 2016)

Another result of this plastic abuse is the identification of the Great Pacific Garbage Patch. This is the biggest conglomeration of plastic waste on the planet and already measuring the size of "1.6 million square kilometres, an area twice the size of Texas or three times the size of France."(The Ocean Clean up, 2018) It is growing rapidly.

The previous point is supported by a finding from a semi-structured interview held with a charity worker from Greenpeace. David commented "Ocean plastics are reaching catastrophic levels and recycling on its own is not enough anymore" (David. 2020)

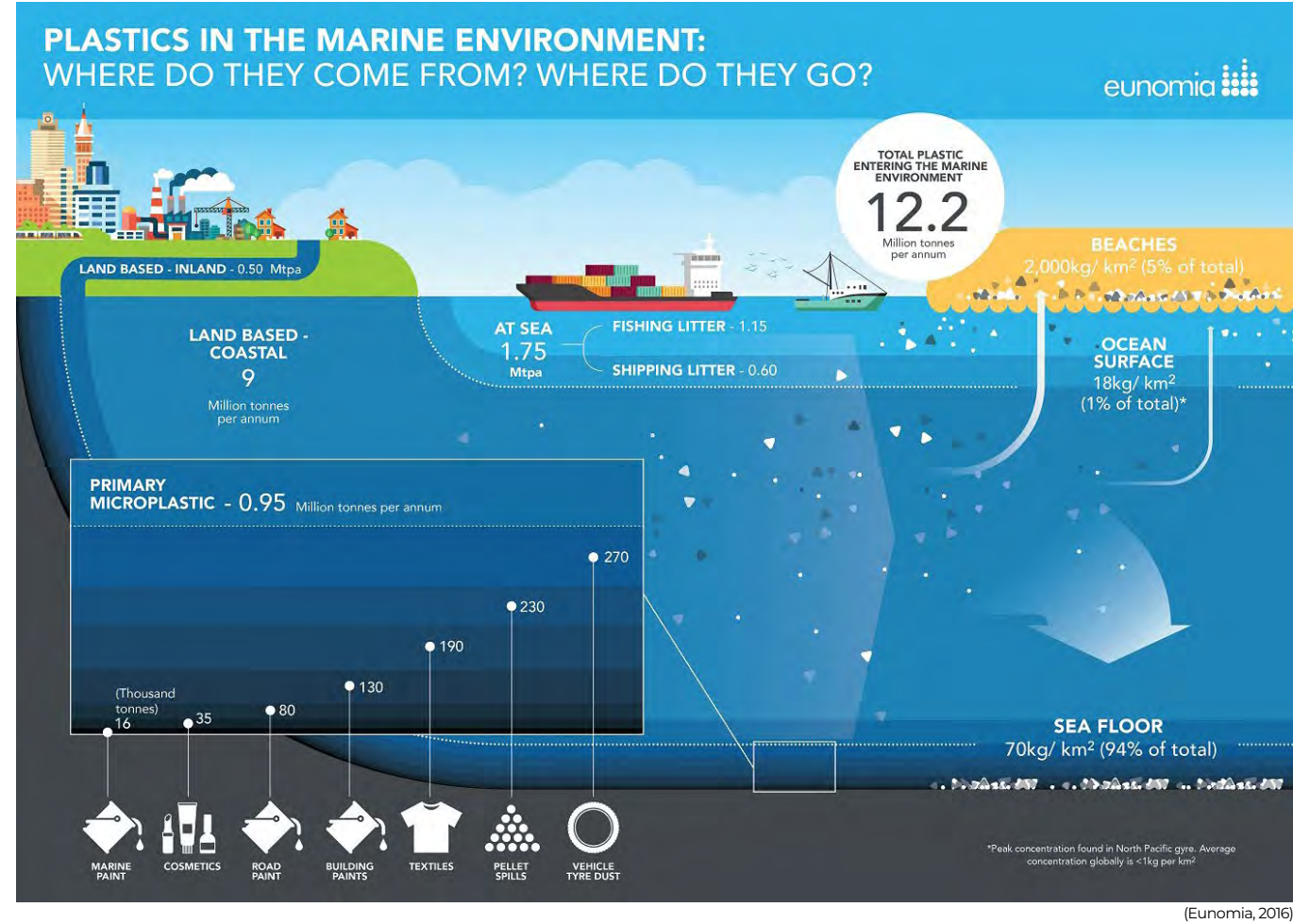
Greenpeace uses charitable donations to raise awareness through campaigning and actively confronting offending organisations. They believe that the solution lies within the initial decisions humans are forced to make as there are no viable alternatives from the points of purchase consumers make daily.

For example; "UK supermarkets alone produce over 900,000 tonnes of plastic each year... there's a real lack of options for plastic free items, strangely, 'bags for life' have fuelled this plastic rise. An average of 54 bags are used per household per year and 1.5 billion have been made in the last year alone." (David. 2020) Although 'bags for life' were implemented to reduce plastic consumption, this failed government initiative actually had a rebound effect as people continue to buy as much as ever. David is of the opinion that the need for convenience and supply in supermarkets is largely to blame and consumers should be encouraged to make informed decisions to combat this. (David. 2020)





The problems centring around pollution are growing rapidly and are likely to continue to grow resulting in the quality of life for everything on this Earth being jeopardised.



Since 1950, plastic production has “increased 200-fold [and] has grown at a rate of 4% a year since 2000.” It is predicted that production could increase by 40% within 10 years. (World Wildlife Fund, 2020)

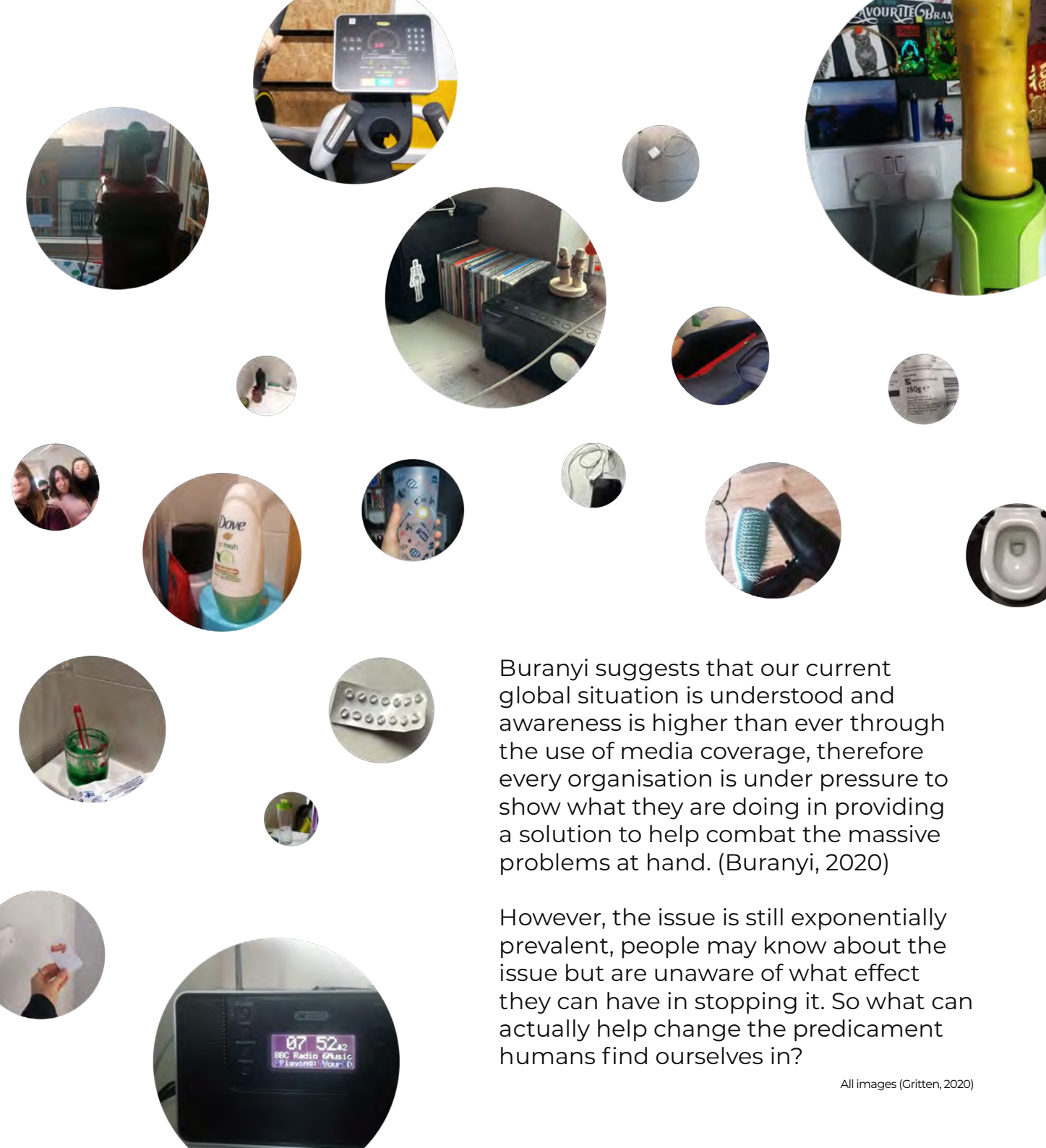
This massive problem needs to be solved through the acceleration of growth in conscientiousness and knowledge of the difficulties, this will hopefully power the motivation for change.

## Empathy Testing

Inspired by a TED talk from Sarah Dudas PhD, an average day was recorded and every item deemed as plastic was photographed to see how hard this material would be to avoid.

This empathy testing uncovered how seemingly impossible it is to avoid plastic at any point in the day, leading to the belief that humans cannot fully eradicate the use of plastics plastics depended on so much. What needs to change is the employment of single-use plastics, which are discarded and left to carry out the rest of their lives polluting and leaching into our oceans. (TEDxBinghamtonUniversity, 2018)

So, there is a direct correlation between human production, development of plastics and their effects on our Earth.



Buranyi suggests that our current global situation is understood and awareness is higher than ever through the use of media coverage, therefore every organisation is under pressure to show what they are doing in providing a solution to help combat the massive problems at hand. (Buranyi, 2020)

However, the issue is still exponentially prevalent, people may know about the issue but are unaware of what effect they can have in stopping it. So what can actually help change the predicament humans find ourselves in?





(Beattie, n.d.)

To uncover more information about steps people can take and human contamination of water sources in local environments, an interview was held with Dwr Cymru Welsh Water's Graphic Designer.

Beattie highlighted that the non-profit company: "do a lot with schools, a sticker pack [was recently created] for kids to take home and stick on items that go in the bin (not the toilet). This behaviour change will hopefully get it into kids minds early and embed the psyche early so it becomes second nature. It also promotes speaking to parents at home and having these conversations." (Beattie, L. 2020)

Beattie revealed that wet wipes and cotton buds were among the biggest waste offenders needing to be cleaned out of waterways, because they cannot break down in water like tissue paper. This leads on to how people should dispose of their waste in appropriate ways, (highlighting an awareness problem) including correctly disposing of waste, using methods like recycling.

***"This behaviour change will hopefully get it into kids minds early and embed the psyche early so it becomes second nature."***

Liam Beattie  
Dwr Cymru Welsh Water



(Critten, 2018)

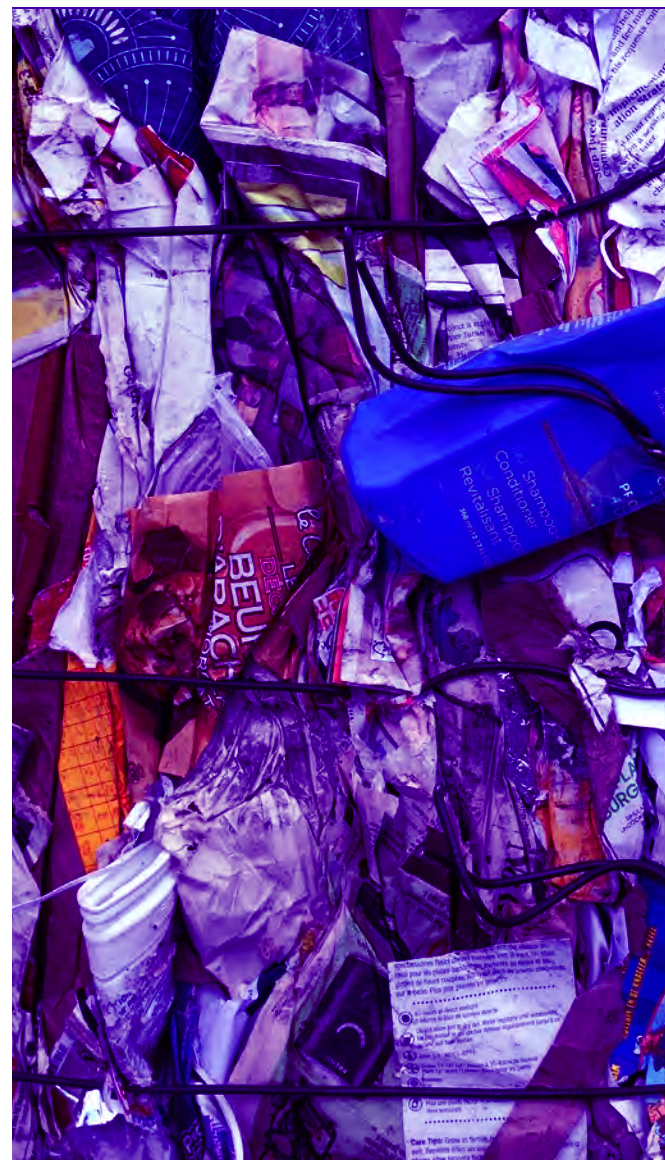


To find out if there were problems within individuals' experience within the realm of recycling, a focus group was organised. Points of confusion were discussed between 6 individuals ranging in age from 18 to 26. Evidently, recycling has noticeably confusing systems that are different in various countries and even differing councils, this confuses the public and most reported in not knowing if it makes a difference.

Feedback included that recycling processes allow waste to spread down streets due to weather and wildlife. "Different methods and processes confuse me because it always seems to be changing". Another comment ensued: "The only thing we know we should do is recycle our plastic waste but even then we do not know where it will end up or if it will get recycled. So I'm confused about what impact I can actually make as an individual."

Evidentially, there is a communication problem due to multiple cases of confusion apparent within consumers' recycling methods. Confusion was also discussed around symbols used on plastics.

The recycling logo is seen as confusing because sometimes plastics get refused even when they have this symbol on them. Whether items are actually recyclable or not seems to be the biggest confusion facing this group.



(Lemay, 2019)

A report has found that the biggest pollutant overall is cigarette butts and filters. "Over 2,117,000 were found in the coastal clear-up. They make their way through drains and gutters and find themselves in the ocean. Animals and birds can mistake the butts for food and ingest them, along with the toxins present in cigarettes." (Jabril, 2020)

Jabril highlights that filters even contain plastic. Campaigns such as #binthebutt and The Ballot Bin prove that behavioural influences and default options create needed behaviour change concerning cigarette wastage and pollution.

The #binthebutt campaign aimed to raise awareness of how harmful cigarettes are, a study found:

- "52% of smokers who smoke everyday thought putting a cigarette down the drain was acceptable.
- 39% of smokers, equivalent to 3.6 million in the UK, admitted to throwing a cigarette butt down a drain within the past month.
- 11% of smokers do not consider cigarette butts to be litter." (Keepbritaintidy.org, 2020)



(Gritten, 2020)

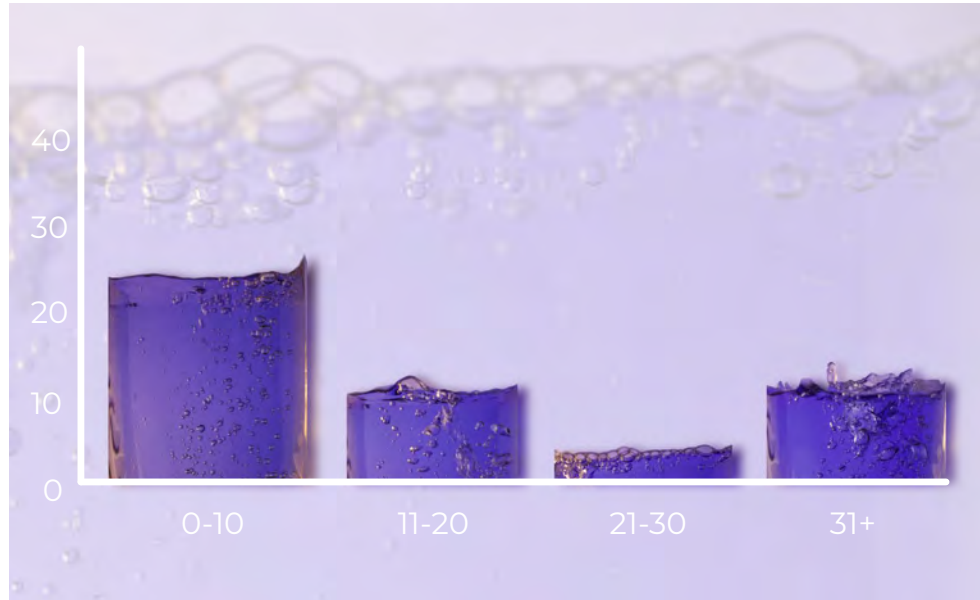
The Ballot Bin works as an innovative solution as it encourages smokers to vote whilst discarding their refuse. This a fun incentive to the otherwise unprocessed action. (Local.gov.uk, 2018) This has proved to work as it has successfully reduced cigarette litter by 46% over thirty UK councils. (Local.gov.uk, 2018)

Other developing solutions include TerraCycle. This is a "highly-awarded and globally recognised recycling company that develops zero waste solutions for difficult-to-recycle waste streams." (TerraCycle UK Ltd., 2020)

They recycle the refuse into plastic solutions such as transport containers. However, these are not widely utilised or known solutions. Although they are still plastic solutions, this means the materials are being reused and being provided with multiple lives, instead of one. (TerraCycle UK Ltd., 2020)



## How many plastics can you see in your direct environment?

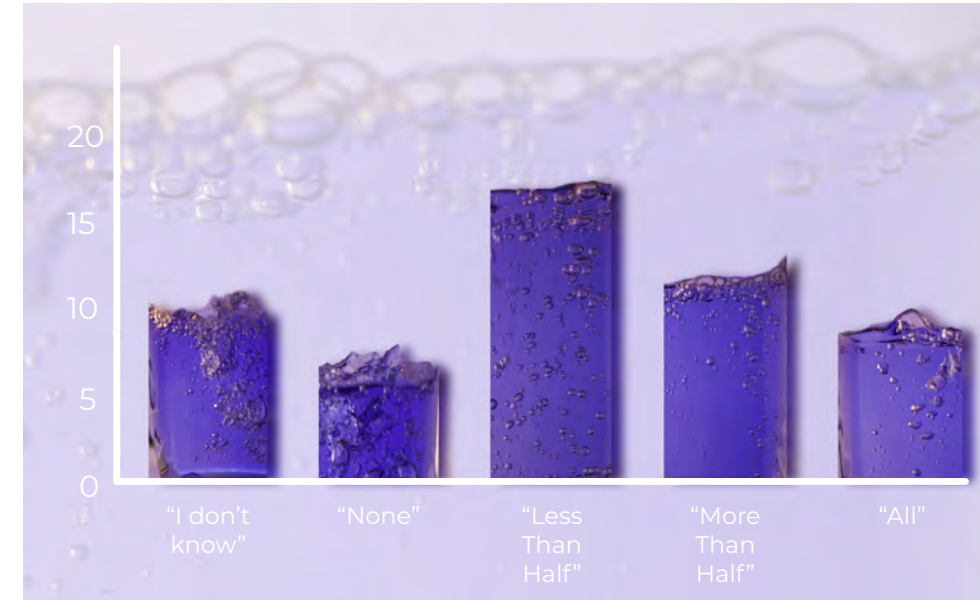


(Gritten, 2020)

To understand wider views, a survey was carried out, gaining 56 responses from people within the age range of 12 to 61 years old.

These participants included people living within the UK, Australia and France, ensuring varied perspectives.

## How many of these items do you consider reusable?



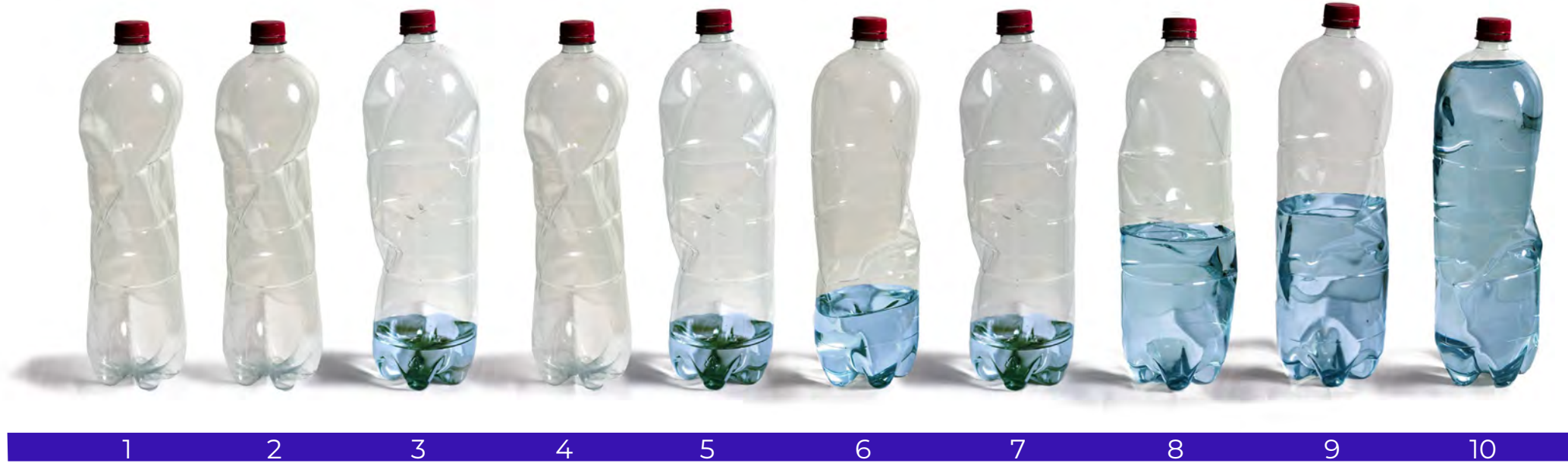
(Gritten, 2020)

When asked how many plastics could be seen in participants' direct vision, numbers varied substantially, with the range falling between 1 and "easily over 100", out of all these responses only 10 out of 56 thought that all of the items they saw were reusable. However, this could be due to an educational issue, possibly not being able to tell if an item can be recycled.





**On a scale of 1-10 (10 being most), how damaging would you say plastic is?**



Every respondent recognised that plastic was harmful to the environment, this was useful information as it highlighted this detail was not part of an awareness problem.

A substantial amount reported finding this through nature programmes involving multiple references to David Attenborough.

40 Responses fell into the top 30 percentile within a 1-10 scale documenting to what degree plastic was harmful for the environment. This cemented the finding that most people believe that plastic is very harmful to environmental health. However, an insight from the survey highlighted unawareness of further details. Comments ranged from “I try, it is not my fault though”, blaming more influential powers, “I go for convenience, and that is an all-round issue I know” and “If I saw the environment getting worse” infers complete dependence on witnessing and experiencing the effects before trying to mitigate them from happening in the first place. This leads to the belief in needing to see the effects of a problem before they act.

The majority of people reported feeling surprised when finding out that drinking water contained plastic particles.

One commented in feeling “horrified”, others who did not know about this information were not surprised as they felt “desensitised”. People seem to be increasingly unshocked by negative news and shock tactics as they are constantly bombarding our daily lives through platforms sharing news. This infers that different tactics need to be adopted to actually make beneficial changes enabling a better future.

When “What would make you not buy another piece of single-use plastic again?” was asked, almost every response contained the word “affordability” and “alternatives”, the demand within these answers highlighted the desire for change, but also developed the knowledge that individuals put blame on bigger corporations and industrialised profitable decisions.

The individual’s mentality seems to want to challenge rules and guidelines, this seems to be the front line of learning, if a person receives negative feedback from a choice, they learn to withdraw from repeating the process. It seems to be much harder for people to avoid something they have just been warned about and not experienced directly.

**It becomes apparent that removal of plastic from single-use packaging would ultimately require the mass combination of legislation, regulation, fiscal measures, technological changes and consumer behavioural change.**

This is a multi-stakeholder intervention. Even changing one aspect of this could possibly trigger bigger change.

(Gritten, 2020)



## Consumer Behaviour

Multiple stakeholders become apparent when viewing this problem as a whole. The manufacturers and distributors of this material produce it for profit and demand, and the consumers make choices to buy it and do not have many alternative options. A deeper insight into the human mind and developed behaviours that have led to the extent of this problem needs to be revealed.

**Through humans' evolution, we needed to make fast decisions with limited information, and mental shortcuts were essential for our survival. Individuals make decisions not based on perfect information and rational choice but in much more nuanced ways that depend on psychological antecedents, such as values, beliefs, and social norms, and result from routines and habits that do not involve deliberative, cognitive processes. (Kaplan, 1972)**

Williamson et al suggests that people have relied on common practices to try and instigate behaviour change which are expected and mostly unheeded. Research has been carried out to find that there are three main levers to adapt behaviour and fuel social change. The three methods stem from: "emotional appeals, social incentives and choice architecture". (Williamson et al., 2018)

## Emotional Appeal

According to Schneider et al, 2017, emotions are incredibly powerful within a human's decision making processes, these fuel behavioural patterns and play vital roles within an individuals' thought processes. (Williamson et al., 2018) Emotional appeal is especially effective when they induce "feelings of pride and guilt" (Schneider et al., 2017) this finding is useful for future ideation.

Similar findings support this; "a history of evidence points to different tactics, such as highlighting one's feelings of pride or joy as a result of sustainable behaviour, and shows that these can produce stronger pro-environmental behavioural intentions." (Fredrickson, 1998) Negative feedback from actions and negative news has been proven to reduce a willingness of prolonged attention to certain subjects. (Williamson et al., 2018)

"Messaging and other interventions that appeal to specific emotions and feelings (e.g., joy, autonomy, compassion) can engage the powerful centres of the brain that are often responsible for decisions." (Williamson et al., 2018) Certain methods pertaining to how individuals are targeted and the language in which they are spoken to have direct effects to their resulting behaviours that fuel autonomism. This direct appeal to their emotions provides longer lasting, memorable effects.

This leads to a wider understanding of prevalent stimuli within the audience's resulting choices and behaviours. (Ahn et al., 2016)



(Spinelli, 2018)



(Vonlanthen, 2018)



## Social Incentives

The method of adopting incentivisation techniques is an apparently effective solution. In 2003, Cialdini commented: “Social incentives and norms [are] powerful motivators for behaviour. They provide cues for members of a group on how to behave, and they also add considerable pressure to change behaviour and conform when behaviour deviates from expected norms.”

This relates to the study which coined the term of “Personalized Normative Feedback”, which is a method in which participants are invited to share their behaviours and compare them with others to work out standard behaviour, this allows them to “cooperate and reciprocate rather than compete”. (Williamson et al., 2018)

Williamson et al suggests that this works as the human condition thrives off comparisons in social situations and structures.



## Choice Architecture

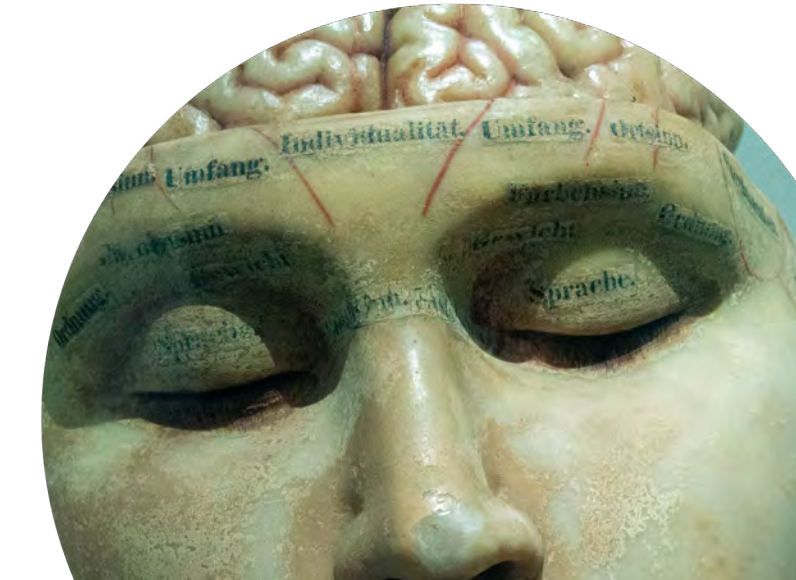
Heuristics may have an important part to play within decision making. This is the act of making decisions quickly to achieve goals, without much process of thought. (Shah and Oppenheimer, 2008) This research links to the idea of the compartmental ‘Systems’ of our brain examined by the following article discussed from People Management in 2019.

“Humans process information best when it is engaging and presented in a limited number of options or units.” In the aim of changing audiences’ behaviour, an “optimal decision-making environment” needs to be established to allow users to make the best possible choices. (Kaplan, 1987)

Authors of ‘Nudge Theory’, Thaler and Sunstein (2008) highlight how there is a “multitude of forces at work when we decide how to behave in a situation. Solutions that employ thoughtful choice architecture will simplify what we are asked to do, reduce the apparent number of choices we have, and frame decisions in a way that guide us towards desired behaviour.”

Overall, continuously found evidence and developments from a multitude of studies centred around the transformation of human behaviour

“give reason for hope”. (Williamson et al., 2018) These different strategies have proven to work in positive behaviour shaping and could be designed to target issues surrounding this problem segment.





## Interview with PhD Psychology student



**A**

semi-structured interview was carried out with a PhD student of Psychology to find out more about individuals' behaviours.

Determining these will provide bigger insights into how the mind works and how it can be influenced when trying to establish positive behaviour change.

*“Changing behaviours or habits is very difficult...Once people get into the routine of doing something it becomes almost automatic.”* (Mitev,K. 2020)

Mitev suggests that autonomous behaviour is developed and hard to change once cemented in any person's routine, he commented on different strategies used to target behaviour change, saying shock tactics work to an extent but highlighting more advantageous techniques such as:

*“Information, incentives and showing examples of what people can achieve by changing their behaviour and what they may gain personally from this change... The use of Nudges is one of the best forms of creating behaviour change.”* (Mitev, K. 2020)

He elaborated further: “It is true to predict more effective change for individuals within a social context. If everyone around you is doing something you do not want to be left out, this is human nature.” (Mitev,K. 2020)

From this interview, it is ascertained that humans' decision making is based largely on social structures and behavioural comparisons.

***“Changing behaviours or habits is very difficult...Once people get into the routine of doing something it becomes almost automatic.”***

Kaloyan Mitev  
Phd Psychology Student



## Decision making and Nudges

Following on from Mitev's interview, (Mitev, K. 2020) Nudges were explored. To use 'Nudge' tactics suggests that individuals cannot make correct decisions on their own and need guidance in doing so. Therefore, designed solutions guide them to correct choices, making them more likely to make better decisions. (John, Smith and Stoker, 2009)

For example, a medical study, found that when forms switched an 'opt-in' service to 'opt-out'; "everyone will be considered to have no objection to becoming an organ donor, unless they specifically register to opt out. This change, which is counting on most people's tendency not to act, is expected to save 700 lives a year." (People Management, 2019)

Comparative scenarios influence opinions depending on prescribed values leading to lesser or greater benefits to the individuals' current

state. Therefore isolating these decisions without comparisons changes the outcome of any given decision. Different contexts matter in decision making, crucial to any outcome.

Small-scale incidents that are continually evident have become the norm and have become reduced in peoples' priorities.

"Nudges are valuable because people behave in fundamentally irrational ways." (People Management, 2019)

The brain can be considered to be split into two 'systems'. This can be compared to the fight or flight reflex, System 1 is responsible for immediate reactions and automatic thoughts stemming from stimuli whereas System 2 is responsible for more in depth thought and rational decision making.

"Nudging recognises that System 1 thinking often overrides the more rational process when making decisions" (People Management, 2019)

Beament says "If you provide a benchmark such as 'people like you save £100 a month', 85% of people will want to be above that benchmark because they think they are better than the average person. Equally, if you put a message about debt in there – 'People like you are £100 in debt each month' – 85% will want to be below that, so they are beating the average." (People Management, 2019)

This correlates with the information that social dynamics play a very important role within consumers' decision making and also introduces the motive of competitiveness.

**"Nudges are valuable because people behave in fundamentally irrational ways."**

People Management

2019



*As an individual, do you believe you have the power to change the world?*

**“No”**

**“Yes”**

(Dahms, 2018. Adapted by Gritten, 2020)

## **Individual Power to Change the World**

The infographic shows data from a previous survey question in which 38 people reported in not feeling powerful enough to make impact. “Under the right conditions, we excel at cooperation, seek reciprocity, and act on the basis of social cues... our decision- making process is strongly influenced by the contextual environment in which we make decisions and the way choices are presented to us.” (Williamson et al., 2018) Peer pressure and social contexts play a big part in individual choices, humans’ behaviour can be easily influenced.

Within the research conducted so far, there seems to be a shared belief that no one person can make a significant difference, water pollution and global warming in general is such a big problem, that individuals feel they have little power in affecting future repercussions.

A possible solution could be allowing people to recognise that if the majority could change their behaviour towards the impact they have, this could snowball into mass change in human action towards protecting the planet.



(Gritten, 2018)  
(Verch, 2017)



## Interview with Marine Biology student

**In contrast to the previous finding, a 21 year old Marine Biology student said; “We like the fact that we can make our own choices. We just don’t know what to believe anymore as we are constantly bombarded with information about the next thing that is negatively affecting the world. It is proven that plastics are terrible for marine life but people do not feel a direct connection and so are less likely to do much.” (Mead, H. 2020)**

Mead’s statement highlights that people want to make independent decisions, she stated that this could be the front line of learning, if a person receives negative feedback from a choice, they learn to withdraw from repeating the process. It seems to be much harder for people to avoid something they have been warned about and not experienced directly. (Mead, H. 2020)

On this basis, it could be understood that individuals have more power than they know, they have the influence to make certain decisions that will transform into growing trends which will then in turn power the choices of the collective, including companies and industries. “While the focus for most of this change often rests at the scale of government and industry, changes at the level of individuals, households, and communities are of profoundly greater importance than most people appreciate.” (Williamson et al., 2018) Once individuals feel empowered and start transforming their behaviours, others will join and adopt, creating a tipping point and widespread behaviour change. Such an effort “requires finding innovative ways of engaging individuals, households, and communities, and changing patterns of production and consumption that are ingrained in routine ways of life.” (Williamson et al., 2018)

The Economist (2017) suggests changes already becoming evident as a result of sectors including Psychology and Neuroscience, which are developing findings that “have transformed global understandings of human behaviour and decision-making”, this is informing change within higher powers including governments hiring whole teams who specialise in decision making and behavioural insights. (The Economist, 2017)



(Critten, 2020)

“



***lastics are terrible for marine life but people do not feel a direct connection and so are less likely to do much.”***

Hannah Mead  
Marine Biology Student

(Critten, 2018)



'Do shock tactics work?' Was an article written in the Nursing Times which suggested that "Motivation to stop has to come from within" (Do shock tactics work?, 2005).

This document suggests that as a community, members have become "immune to shock tactics", people are continuously making "informed choices" to carry on their bad habits. Even those who are most informed about the effects of smoking and treat it daily by working in the health industry still partake in this activity, knowing all of the consequences. (Do shock tactics work?, 2005)

This may be a result of social norms being implemented over a long period of time, it has become normal to take smoking breaks throughout the day and this is a time where people have the chance to bond socially whilst partaking in the same activity. (Do shock tactics work?, 2005)

"It is better to educate, not scare" the shocking messages being circulated may even "overshadow" the intended messages. (Do shock tactics work?, 2005)

Within this article, Scott Justice seems to think that shock tactics will only have momentary behaviour change, people will be shocked, but once the campaign is over, they will not be presented with challenge to their behaviours and it will become less influential over their minds and their decision making.

Scott Justice also comments on how bans seem to be much more effective as these are blanket rules that people must follow or there will be consequences. (Do shock tactics work?, 2005)

This insinuates that consumers need to see a visual difference they are making in order to change their behaviour, the feelings of powerlessness increase if there is no direct link between their actions and what benefits are achieved.

Individuals doubt how much change they can cause within the vicinity of their lives. This is because news and global effects seem too big for any person to solve. (Hertin and Berkhout, 2000)

"Localised problems rather than global issues are more likely to be considered by consumers as within their sphere of influence." (Hertin and Berkhout, 2000)

Findings have highlighted how plastics are polluting humans' water systems, and how decision-making processes influence every choice a human makes. With the acquisition of this knowledge. Clever wordplay and enticing images with facts will only go so far in persuading people to change their behaviour.

The solution needs to be long term, prevalent and unforgettable in people's lives so people do not revert in behaviour. The best forms of behaviour change still seem to come in the forms of appealing to emotion, social incentives and designing for choice architecture. (Williamson et al., 2018)

**The adoption of positive messaging to influence behaviour has been found to be incredibly necessary.**

(Critten, 2018)



## Developing Solutions

# A

s previous findings have uncovered; plastics are made from non-renewable fossil fuels, meaning synthetic plastics are one of the most threatening materials facing

ocean pollution. They have a detrimental impacts as they pollute water systems and absorb toxins, creating harmful chemicals within food chains in the worst of ways.

Further investigation into potential strategies is required. Although some solutions are starting to become apparent; "The development of bioplastics helps to solve many of these sustainability problems, offering the potential of renewability, biodegradation, and a path away from harmful additives and moreover a healthy earth."(Keziah, Gayathri and Priya, 2018)

Bioplastics are one of the possible solutions for future replacement plastic material, rather than being harmful to the environment and threatening life on Earth, bioplastics are made from natural structures like corn-starch that can biodegrade and are easily made. Consequences of switching manufacturing processes would result in the improvement of healthy lifestyles and the reduction of pollution.

The biggest confrontation of this method would be raising awareness and convincing companies to switch facilities that can house bioplastic production. (Keziah, Gayathri and Priya, 2018)



## Findings

Revisiting influential findings will pave way for better solutions. Supermarkets produce much of the plastic waste being distributed amongst consumers.

There seems to be growing awareness of this and they are being held accountable by organisations such as Greenpeace. (David,2020)

Other forms of solutions are being explored within this field, including incentivisation. One technique being implemented encourages consumers to return plastic bottles in exchange for discounted shopping (David. 2020). Reflecting on further comment from David at Greenpeace, "It's a case of helping people understand that we're at our most effective when we come together as one." (David. 2020)

Research carried out by Greenpeace has identified that people are currently misinformed and disempowered in relation to this problem, creating desensitisation. Strategies are needed to break habit loops of consumers and empower them to challenge bigger authorities.

A number of themes have become apparent after carrying out various research methods. Findings that have arisen are as follows:

- People tend to think that their individual behaviour has no real impact on global problems
- Shock tactics and negative stimuli do not work in attempts to change the majority of behaviours
- Overall, subjects were surprised to hear facts surrounding plastic ingestion and how the oceans are responsible for most clean air processes vital to life on Earth
- Positive emotions, especially pride and joy are successful instigators of behaviour change
- Choice architecture and default options help consumers decide on better behaviours
- Social influence and incentives encourage consumer behaviours
- Material choices within manufacturing and industries is a big contribution to the problem
- Consumers need to see a measurable difference if they are to change in the long-term





Global change must start with the belief that the individual has the power to make choices that will produce worthwhile effects on a wider scale.

Plastics are increasingly hard to avoid and it is an unrealistic aim to try and abolish their use. What can instead be enforced is the motivation for consumers

to stop relying on single use plastics and encouragement of developing better solutions.

(Hussaini, 2019)

## Conclusion

Throughout this report, findings obtained have altered the direction of research and the initial question has to be reframed to suit the research found. The initial question was vague and led to assumptions of people causing this problem knowingly. Research from a multitude of sources has uncovered problems within the arenas of awareness, education and responsibility.

Through this research-led project, there are a number of potential options considering the framing of the challenge. General problems highlighted from most findings lead to similar areas. These are within human behaviours, centred around general awareness and attitudes. The first most prevalent finding was that of plastic contamination and how it is affecting human health. The second comprised of different mentalities and stimuli affecting decision-making which lead to habit formation. Findings will fuel specific application to key demographics to incentivise positive change.

A number of developing solutions have been identified and these will aid future

development within this project. Numerous individuals' opinions and guidance have been sought and everything documented and highlighted throughout this research will accompany future thought processes.

Overall, these are the areas in which most potential change can be explored:

- **The point of purchase within consumers' choices**
- **A solution instigating behaviour change through activism**
- **Awareness surrounding developing solutions**

To first start tackling this problem, it will require changing the individuals' perspective leading to positively influenced action. This is why plastic production is so high in the first place; consumer demand.

It can be determined that the plastic problem has multiple areas of consequence. Research has identified

that there are multiple stakeholders, any of which could be targeted within the next part of the project.

Certain items have also been identified that could be looked into further.

Nothing escapes being affected by plastic and so any one audience in any environment can be targeted. It would be most effective to target people in which the majority of research has been collected; the UK.

The industrial production of plastic and cause for demand has not ceased even with the constant bombardment of evidence that plastic is toxic and this needs to change with the adoption of differing techniques.

The evolved question is as follows:

**How to raise peoples' awareness and incentivise change surrounding water pollution caused by plastic.**



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