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Law as a regulator: steering waste management by steering itself through its relationship with the environment

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**LAW AS A REGULATOR:
STEERING WASTE MANAGEMENT BY
STEERING ITSELF THROUGH ITS
RELATIONSHIP WITH THE ENVIRONMENT**

Pravin Jeyaraj

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I declare that all the material contained herein is my own work

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Abstract

Since 1995, the member states of the European Union (E.U.) have been legally obliged to reduce biodegradable municipal waste, with a final target of 35% of 1995 levels by 2020 and, in doing so, increase the recycling rate to 50%. In 2015, the E.U. has agreed to aim for a recycling rate of 65% by 2030. For the E.U. and the United Kingdom, the achievement of these targets form part of the policies of the waste hierarchy, the zero waste economy and the circular economy. While it is recognised in the literature that there is a link between these concepts, it is not clear how they are connected and how they can be exploited to change human behaviour. The aim of this thesis is to develop a conceptualisation, using Niklas Luhmann's systems theory, of the relationship between the waste hierarchy, the zero waste economy and circular economy in terms of the social factors – law, economics, politics, etc. - that influence behaviour. The proposed conceptualisation moves away from the notion of waste as a material substance discarded by human beings into the environment; instead, waste is a shared understanding of the transfer of material substances between human beings. Thus, in my reading of Luhmann's theory, waste is the unusable by-product of systems and it can only be made usable by external reference to other systems in the social environment. Therefore, my thesis is that the legal system steers the waste management process by steering itself through its relationship with the environment,

with steering mediated by organisations, such as households, courts, government departments, local authorities and businesses. Through an encounter between Luhmann's theory and Cass Sunstein and Richard Thaler's libertarian paternalism or nudge theory, I argue that organisational decision-making creates the context or, in Sunstein and Thaler's words, choice architecture that nudges human beings towards certain behaviour. In turn, it is the choices made by human beings that influence organisational decision-making. My thesis is demonstrated using the following mini-case studies: (a) the development of international environmental law principles; (b) the definition of "discarding" by the European Court of Justice as distinct from the ordinary understanding of discarding; (c) the provision of household waste collection services in England; and (d) the creation of food waste by retailers and the legal jurisdiction of bin-diving in the context of freeganism.

Keywords: waste management, waste hierarchy, zero waste economy, circular economy, Niklas Luhmann, systems theory, organisation, legal system, Cass Sunstein, Richard Thaler, nudge, libertarian paternalism, discarding, freeganism, international environmental law, food waste, European Court of Justice, household waste, the commons

Chapter 1: Introduction

This introductory chapter presents my research question relating to law and waste, which is “To what extent does the legal system steer the environment?” I explain more precisely what I mean by “steer” later in this chapter; in short, it means “influence”, “shape” or “affect”. The ordinary understanding of waste is unwanted or unusable material. Under European Union (E.U.) law, waste is defined as ‘a substance or object the holder discards, intends to discard or is required to discard’.¹

As I show below, however, and in the context of this thesis, waste is not only material; the word refers to something that is not wanted or cannot be used, and for that reason is not just material but also immaterial. This chapter is divided into the following sections:

- An overview of some recent developments in United Kingdom (U.K.) waste policy, including the place and conceptual issues of the waste hierarchy, zero waste economy and circular economy and the central problem of study

¹ In this thesis, I refer to the current definition (at the time of undertaking this study) of waste in European Union law as stated in Article 3 of the E.U. Directive 2008/98/EC on waste and repealing certain Directives: ‘any substance or object which the holder discards or intends or is required to discard’. The definition has evolved over time. The 2008 Directive contains revisions made to the Directive 2006/12/EC on waste, which is a codification of the Directive 75/442/EC on waste and subsequent revisions made to it (See European Commission, <http://ec.europa.eu/environment/waste/framework/revision.htm>).

- An explanation of the relevance of social systems theory to understanding the circular economy
- the aims of the study and an elaboration of the research question
- a reflection on how I came to choose this topic
- a summary of the remaining chapters in this thesis

Issues in Waste Policy in the United Kingdom

In recent years, doubt has been raised over the U.K. government's commitment to reduce landfill waste and increase recycling. In November 2013, Dan Rogerson,² a government minister in the Department for Environment, Food and Rural Affairs (Defra),³ wrote to 'stakeholders' in U.K.'s waste management sector to announce that the department would be 'stepping back in areas where businesses are better placed to act and there is no clear market failure'.⁴ The planned withdrawal was part of a reprioritisation of work as a result of restrictions of public funding and included a reduction of the support given to local authorities. The announcement resulted in the Environment, Food and Rural Affairs Select Committee's decision to hold an inquiry

² At the time of writing this letter, Dan Rogerson had been appointed to be the Parliamentary Under-Secretary for Water, Forestry, Rural Affairs and Resource Management. This was his first communication with the waste management sector.

³ The Department for Environment, Food and Rural Affairs (Defra) is the U.K. government department responsible for waste policy. It is mainly responsible for England as waste policy is a devolved matter that is handled by the respective administrations in Scotland, Wales and Northern Ireland.

⁴ Defra, 2013b, 2

into how a reduction in Defra's activities might affect the treatment and recycling of municipal waste in England; it reported with its findings in October 2014.⁵ The committee reflected the concern expressed by stakeholders in the waste management sector that the U.K. would not meet an E.U. target for increasing household recycling to 50%.⁶ This was an issue of concern as, despite an increase in the recycling rate for England from 11% in 2000/2001 to 43% by 2011/2012, with the corresponding E.U. targets for reducing the amount of waste to send to landfill have been met,⁷ Defra's own statistics indicated that the recycling rate had started to level off since 2010/2011.⁸ It assessed that the previous 'rapid rise occurred while local authorities were introducing and expanding their recycling collection schemes'.⁹ There has since been non-governmental evidence that seems to confirm Defra's assessment. SITA UK, one of the U.K.'s largest recycling and waste management companies, has observed that government statistics 'paint a picture of a nation stuck in the doldrums when it comes to recycling';¹⁰ there are also indications to suggest that the public are not as motivated as previously to recycle waste.¹¹ Furthermore, Defra has acknowledged that, due to variations in the recycling rate for different local authorities, 'the rate of increase in the last year [2012/13] is insufficient to meet the 50% E.U. target'.¹² Whilst

⁵House of Commons, 2014b

⁶ *ibid.*, paras 23-25

⁷Defra, 2010

⁸Defra, 2013c

⁹ *ibid.*

¹⁰ SITA UK, 2014

¹¹ Veolia, 2014; Gosden, 2014

¹²Defra, 2013c

there are still five years to go and it all depends on how households, industry and local government respond in that time, it is arguably a legitimate concern that the U.K. may fail to meet its 2020 target. Environmental consequences aside, the legal and economic implications are that the U.K. may be subject to a financial penalty, which could be passed onto any local authorities that may have contributed to the failure. Since there are already restrictions on public funding, which are likely to continue or increase over the next five years, there is potential for a knock-on effect on other local authority services. It is arguable, therefore, that the waste system has required the involvement of different organisations – government departments, local authorities, businesses, households not to mention Parliament and the European Union - and required the use of law, economics and politics. However, it seems that different organisations are responding to what is happening in their respective environments in different ways. Whilst there is a shared view that waste has to be reused, recycled and minimised, there is no single view as to who should be in the driving seat.

It could be argued that a “stepping back” by the government in certain areas where businesses are best placed to take the lead is in accordance with the central principles of the zero waste economy and the waste hierarchy. According to the Government’s most recent review of waste policy, ‘we need to move beyond our current throwaway society to a “zero waste economy” in which material resources are reused, recycled or recovered wherever possible, and only disposed of as the option of very last

resort.¹³ There is arguably reciprocity between the zero waste economy and the “waste hierarchy”, which is defined in law as a priority order of the waste management activities, comprising prevention, preparing for reuse, recycling, other forms of recovery and disposal. It is defined at E.U. level, although member states can depart from the waste hierarchy in order to achieve the ‘best environmental outcome’ where ‘this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste’.¹⁴ The notion of hierarchy is often represented textually as a list from top to bottom or graphically as an inverted pyramid, with the biggest block (prevention) on the top and the smallest block (disposal) on the bottom. In a sense, the zero waste economy emphasises different aspects of the waste hierarchy.

Since the policy and legal definitions of the waste hierarchy and the zero waste economy point to an overlap, it could be argued that the two concepts are related. When the European Commission was reviewing the waste management targets, the Local Government Association (L.G.A.), the body representing local authorities in the U.K., argued to the Commission that:

‘...a new and sustainable model is needed that acknowledges local authorities’ ambitions, but decouples further achievement on waste prevention, reuse, recycling and landfill diversion from additional public expenditure’, shifting the

¹³ Defra, 2011a, 10, para 28

¹⁴ E.U., Directive 2008/98/EC, Article 4; U.K., Waste (England and Wales) Regulations 2011, paragraph 12

focus 'from waste and recycling tonnage once produced to the decision making, design, content and consumption of products long before they enter the waste stream'.¹⁵

According to the L.G.A., it was now time that a dematerialisation strategy was followed where less material waste was generated and more attention was paid to the higher priorities of the waste hierarchy. I shall explain what I mean by material in Chapter 3 but for at this point, I simply mean "made of matter" in the physical sense; referring to the previously mentioned legal definition, if waste is a substance discarded by the holder, then matter is the substance before discarding. In the context of this thesis on waste policy, examples of matter would be glass, plastic, metal, paper or biological cells. Thus, as pointed out by Van Ewijk and Stegemann, dematerialisation refers to a reduction in the creation of material waste.¹⁶ Through dematerialisation, there is potential for decoupling raw material use from the economy or waste output from economic output.¹⁷ At the same time, Hultmann and Corvellec argued that, through the centring of the waste hierarchy, E.U. waste policy 'blackboxes the environment and the economy, making these categories appear as self-evident, ahistorical and contextless'.¹⁸ In other words, the waste hierarchy presupposes the existence of the environment and the economy without describing them. Following Van Ewijk and

¹⁵ Local Government Association, 2013

¹⁶ Van Ewijk and Stegemann, 2014, 1

¹⁷ Defra, 2011a, 16, para 49; Van Ewijk and Stegemann, 2014, 3

¹⁸ Hultmann and Corvellec, 2012, 2417

Stegemann as well as Hultmann and Corvellec, it could be argued that it is possible to decouple the aim of economic growth from the idea that waste is produced is disposed of in the environment, because 'waste is a resource'.¹⁹When raw materials are extracted from the environment and enter a product lifecycle powered by the exchange of money they become economic material. Through initially consumption and later disposal, waste is transformed from economic material back into environmental material. Thus, the U.K. government's 'vision of a Zero Waste Economy acknowledges that there will continue to be a long-term market in "waste" materials',²⁰ because instead of waste simply being thrown away it is capable of becoming the object of further economic transactions. Since production, design, consumption, reuse and recycling are dependent on non-governmental actors, namely households and businesses, Defra's decision to step back in certain areas seems logical. However, as can be seen from the reuse and recycling policies examined in Chapter 6, it could be argued that the government and public bodies still have a role to play in the accomplishment of the zero waste economy.

If the waste hierarchy enables dematerialisation, then there is arguably a conceptual problematic with the definition of waste. Van Ewijk and Stegemann have argued that, in their view, the inclusion of "prevention" as the highest priority is problematic

¹⁹ Defra, 2011a, 6, para 4

²⁰ Defra, 2011a, 18

because prevention of waste is not within the realm of waste management.²¹ Since waste is legally defined in terms of “discard”, then something that has not been discarded, because it has not been produced, is not waste and thus there is no need to manage it. As I discuss in Chapter 5, the courts have sought to reinterpret “discard” as encompassing recycling, reuse and recovery as well as disposal but even they have not considered waste as something prevented. Indeed, if the government anticipates there to be a long-term market in “waste” materials, then one wonders whether waste prevention is that important. Given that human beings, plants and animals all produce waste naturally, it seems unrealistic that the elimination or complete prevention of waste is an achievable aspiration. It may even be hubristic, given that producing waste is a natural bodily function. In this regard, as Van Ewijk and Stegemann argued, the idea of a priority order in the waste hierarchy ‘merely communicates the relative desirability of waste management options’.²² This suggests that dematerialisation of waste is about something more than reduction of the material. Similarly, Hultmann and Corvellec have referred to the waste hierarchy as ‘normative since it ranks the desirability of practices’.²³ Reuse, recycling and energy recovery can be treated, as an alternative or substitute to extracting raw or virgin materials from the environment. So the idea of desirability in the waste hierarchy is a reflection of a connection between economic and environmental value; what’s good for the environment is good for the

²¹ Van Ewijk and Stegemann, 2014, 4

²² Van Ewijk and Stegemann, 2014, 5

²³ Hultmann and Corvellec, 2012, 2414

economy, rather than what's good for the economy is good for the environment. Perhaps zero waste should be considered analogous to zero tax, whereby a zero tax rate is not the absence of a tax rate but a tax rate of 0%, i.e. a rate at which one pays tax without *paying* tax. Similarly, zero waste is not the non-production of waste but the production of waste that is not considered waste.

Since a zero waste economy can be thought of as a long term market in "waste" materials in which waste that is produced is not considered waste, then a practical problematic with the waste hierarchy, as an indication of desirability of waste management practices, is the inclusion of disposal as an option. The Environment, Food and Rural Affairs Select Committee has identified the increasing popularity of exporting waste for the purposes of recycling or energy recovery for a number of reasons:²⁴the environmental, economic and political need to send less waste to landfill; the lack of facilities to obtain energy from waste in England using aerobic digestion or incineration;²⁵ and the possibility of understandable local resistance to incineration due to concern over pollution emissions. Furthermore, even where Energy Recovery Facilities are situated, recent public sector funding reductions have resulted in the development of strategies that transcend more than one local authority area and consequently the "export" and "import" of waste can take place between different

²⁴ House of Commons, 2014, para 56: 'There has been a marked increase in exports of RDF [Refuse derived fuel] from England to Europe since 2010 (when there was virtually nil).'

²⁵ This study has focused on waste policy in England to avoid the added complexity of devolved administrations in Scotland, Wales and Northern Ireland.

local authorities.²⁶As discussed in Chapter 6, the disposal of waste exported for the purpose of recycling or recovery has been reported in the press, in terms of both the “eco-betrayal” of British households that had carefully separated waste for collection for recycling as well as the inability of government to know how much of such waste is actually disposed.²⁷It is arguable that there is a need to deal with waste without exporting it as it may be causing problems in countries such as China that traditionally imported it for their own manufacturing but started banning or considering banning waste imports. With China’s economic progress, it now produces enough waste to have its own cities surrounded by man-made mountains.²⁸ Not even the oceans are safe, with the biggest illegal landfill in the world in the Pacific Ocean in between North America and Asia; the Great Plastic Garbage Patch is said to be six times the size of the U.K. or the size of North America and, as the name suggests, entirely made up plastic. It is created as a result of waste or flotsam being caught in circular currents, or gyres, which are present in all the world’s oceans. The irony of plastic landfills is that it indicates that plastic is not as durable as perceived by humans; outside of the product lifecycle, through erosion by sunlight, it suffers the usual fate of waste of

²⁶ South London Waste Partnership, 2013

²⁷ Siegle, 2006; Doughty, 2013

²⁸ Talking about his film *Beijing Besieged By Waste*, the Chinese film-maker Wang Jiuliang described the landfills as a ‘mirror’ for Beijing, reflecting the high rate of expansion of the city’ (China Daily, 2011). There are in fact 400 different rubbish dumps, not all of them legal, surrounding Beijing and, walking around them, Wang could ‘hear the sound of money flowing everywhere’ (Jingsong, 2011). In a second film, *Plastic China*, and a forthcoming film, *Dumping Ground of the World*, Wang looked at how the problem of waste in China is not just China’s problem or China’s fault: ‘China has come in for a lot of international criticism over environmental issues, but actually the international community isn’t all blameless – a lot of waste is exported to China.’; in addition, as the world’s biggest manufacturer of cheap goods, whilst other countries get the goods, China is left to deal with the resultant pollution (Qin,2014).

decomposition and the entering of particles into the food chain. Thus, as I discuss in Chapter 3, the disposal of waste bridges the gap between human society and the environment, with the environment becoming a participant in the zero waste economy. Furthermore, waste is not simply a problem for a jurisdiction or administrative area but it also a problem for the commons. Therefore, for the waste hierarchy to accomplish a zero waste economy, implementation in the U.K. is not completely independent of what happens outside. Waste is a global problem.

Since zero waste or the reduction of waste is waste that is not considered waste, then an alternative way of thinking about the zero waste economy is as a circular economy. According to the U.K. Government, 'the circular economy means moving away from our current linear economy (make – use – dispose) towards one where our products, and the materials they contain, are valued differently, creating a more robust economy in the process',²⁹ the implication being that things are only thrown away because they are not regarded as valuable. But, as discussed above in relation to the disposal of waste, the Government's understanding reflects that of the European Commission, who see the circular economy as 'reusing, repairing, refurbishing and recycling existing material products'.³⁰ (At the time of writing, the Commission was undertaking a public consultation on a circular economy strategy, due to be presented in late 2015.) A conceptual framework to implement an organisation-specific circular economy has

²⁹Defra, 2013d, 9

³⁰European Commission, http://ec.europa.eu/environment/circular-economy/index_en.htm

been put forward by The Ellen MacArthur Foundation and McKinsey.³¹ However, the focus of this thesis is on the implementation of a circular economy beyond the organisation, because, as emphasised above, there are several organisations involved in the waste management process. A circular economy would have to encompass the interactions of several organisations. In this regard, from a mathematical perspective, a circular economy could be seen as nothing more than a polygon with an infinite number of sides, with each corner representing an economic agent. Anything that is passed between economic agents that cannot be understood in economic terms is considered to be waste. The economic agent in this respect is an organisation that participates in the economic system. The usual way of thinking about environmental pollutants is as externalities; thus the production of externalities is disincentivised by taking the financial cost of their harm to the environment into account when pricing goods. This is known as the polluter pays principle.³² I shall discuss this further in Chapter 5 but, in a nutshell, it means that producers can cut the cost of production by taking steps to cut the amount of pollutants they produce. The concept of the circular economy goes further than the polluter pays principle in that the pollutants themselves can also become economic goods in their own right, through the processes of reuse, recycling and recovery, as indicated in various studies.³³ In particular, the Environmental Audit Committee has highlighted that the ‘waste hierarchy’ as defined

³¹ Ellen MacArthur Foundation, <http://www.ellenmacarthurfoundation.org/circular-economy>

³² 1992 Rio Declaration, Principle 7

³³ House of Commons, 2014b, Paras 4-11; Veolia, 2015, 1-3

in law 'is consistent with the circular economy approach'.³⁴In other words, like the zero waste economy, the circular economy can be achieved by implementing the waste hierarchy.

In this section, I have sought to outline the key issues in the U.K.'s waste policy. As an E.U. member state, the U.K. is legally obliged to reduce the amount of waste sent to landfill to 35% of 1995 levels by 2020 and to increase its recycling rate to 50%. However, given the government's planned withdrawal from certain waste management activities and recycling rates are levelling off, various stakeholders in the waste management sector that U.K. may not meet its 2020 target and hence be liable to pay financial penalties. The government have indicated that there should be an increased focus on the higher priorities of the waste hierarchy - prevention and reuse – which is best achieved by other organisations such as businesses and households. Through the waste hierarchy, which is legally defined, a linear, throwaway economy can be transformed into circular, zero waste economy. However, the policy and academic literature indicate that this does not mean that waste is necessarily eliminated but is viewed in economic terms. The problematic, however, is the lack of clear definition of the actual relationship between the waste hierarchy and the zero waste or circular economy. As discussed above, the zero waste economy or circular economy, is concerned with the economic nature of waste management. However, as

³⁴ House of Commons, 2014b, para 9

a legal framework, the waste hierarchy would be concerned with whether waste management activities were lawful or unlawful. This does not mean that economic factors cannot be taken into consideration when deciding what is lawful or unlawful but that lawful activity is not necessarily the same as economic activity or vice versa. The two appear to be mutually exclusive. But if that is the case, it raises the question of how the implementation of the waste hierarchy as a legal mechanism helps achieve the zero waste or circular economy. Since the circular economy could be said to be comprised of organisations that interact with each other and participate in the economic system, it could be argued that the enabling relationship between the legally-defined waste hierarchy and the circular economy is contextualised in the role of government. The problematic with trying to define government, however, is that the ordinary understandings of “government” are unsatisfactory in the context of the waste hierarchy and circular economy. On the one hand, one could refer to Montesquieu’s theory on the separation of powers between an executive, a legislature and a judiciary. On the other hand, one could also refer to the understanding of government as specifically central government (the executive). In this sense, the precise nature of the government is difficult to define. On the one hand, the government can be considered one of many organisations. On the other hand, it can be considered a nebulous entity or unity comprising of a network of several organisations in that it is made of distinct and identifiable departments. Yet even the extent of this network is uncertain. Is it only limited to central government

departments or does it include local and regional government bodies, who, despite the epithet “government” themselves, may refer to an external other of “the government”. It is also not clear where other administrative or public sector bodies, such as, in the context of this thesis, the Crown Prosecution Service, fit in– they are operationally independent of but ultimately accountable to central government, the courts or Parliament, which brings this discussion back again to Montesquieu. Then, there is the role of transnational bodies such the European Union. Finally, in an era where many government functions are outsourced to non-governmental bodies or privatised – examples in the context of this thesis include waste collection companies, landfill operators and the Waste Resources and Action Program - it is perhaps problematic to make a distinction between government/non-government. Indeed, as indicated above, the concern in the waste management sector is of the “stepping back” of central government in favour of non-governmental organisations such as households and business. Thus, in this thesis on waste management, I start with the premise that the government is a collection of all interacting organisations involved in the waste management process that engage with the political system, the legal system, the economic system and other systems.

Why Systems Theory?

The dependencies of the distinct legal, political and economic systems on each other as well as the complex governmental make-up on top of a plethora of organisations involved in the waste management process can best be described using the late German sociologist Niklas Luhmann's social systems theory. Luhmann's theory of society forms the basis of the theoretical framework of this thesis, as discussed in Chapter 3. He was introduced to social systems theory at Harvard University by the systems theorist Talcott Parsons. However, Luhmann has developed his own brand of the theory, which departed from Parson's approach in that 'in the Parsonian hierarchy of control, universally shared cultural values are translated into more concrete norms, which are then internalised as motivation by means of socialisation'.³⁵ Luhmann, on the other hand, did not see anything in modern society that 'guarantees integration and consensus' and if it does emerge it is unlikely to be based in rational argument and discourse.³⁶In Chapter 5, I argue that organisations, as understood in Luhmannian terms, are the mechanism by which it is possible to build consensus. The key features of Luhmann's theory are relevant to the present thesis:

- Systems are neither exclusively open nor exclusively closed but are operationally closed and cognitively open to their respective environment;

³⁵ Fuchs, 2001, 130

³⁶ Fuchs, 2001, 130

- The environment of a system is not necessarily something natural or material but what is outside the system and comprises all other social systems except itself;
- Information about the environment is learned or gained by each system in the environment through cognitive openness but is always reconstructed in its own terms;
- Society is a social system that comprises different social subsystems and organisations;
- Each social subsystem, including law, economics and politics, have their own understanding of or *communication*(or, more precisely communicated information)³⁷about society and the environment;
- Organisations have their own understanding about society and the environment in the form of decisions.

³⁷ As discussed in Chapter 3, communication is defined in Luhmann's theory as a synthesis of information, utterance and understanding, i.e. information that has been uttered and understood.

- Human beings are not a part of society but a part of the material environment, while forming their own individual psychic systems that develop their own understanding or *consciousness* of the environment;
- Communication about the environment is dependent upon individual consciousness about the environment but Luhmann's theory is based on the premise, from a sociological perspective, that it is not possible to observe consciousness necessary for communication;
- Everything that is known about the material environment is produced from within the boundaries of society and its functions.

The environment in Luhmann's theory is anything outside the social system. It comprises both the social environment of the respective social system - that is, other social systems - and the material environment outside of society as a whole. In this respect, the environment is not simply that which is material but also, more broadly, substantial, i.e. made of undefined substances. As mentioned above, the legal definition of waste is a discarded substance, but since the legal system is a social system distinct from the material environment, there is a distinction between matter and substance. In this thesis, I shall use "substantial" to refer to something in the environment generally and "material" to specifically refer to something outside society

in the physical world. Following Luhmann's description of society, in this thesis, the fundamental characteristic of society and social systems is communication. That is, communication about something in the environment places boundaries on how a substance or object is understood and thus used, compared to when it is uncommunicated. The distinction communication/uncommunication does not exist in Luhmann's theory but I use it here simply to distinguish between what is understood by social systems and that which is not understood (the actual materiality). It is not the same as Luhmann's distinction accepted/rejected, which distinguishes between that which the social system can understand and construct in its own terms and that which the social system understands as not being constructible in its own terms. In this respect, while Luhmann's theory is often highlighted in the literature for showing that postmodern society is just a way of talking about modern society,³⁸ it could be argued that his theory is suitable for describing what Peter Druckner referred to as the "post-capitalist society".³⁹ By post-capitalist, Druckner did not mean that capitalism would be superseded by something better, as the 'free market' is 'the one proven mechanism for economic integration';⁴⁰ instead, a post-capitalist society is a society that exists beyond (the boundaries of) a capitalist economy. For Luhmann, the economy is capitalist to the extent that it is concerned with buying and selling.⁴¹ As Druckner argued, the basic economic resource is not capital or natural resources but knowledge

³⁸ Luhmann, 1995, x; Luhmann, 1995, 183; Philippopoulos-Mihalopoulos, 2010, 15

³⁹ Druckner, 1993

⁴⁰ Druckner, 1993, 6

⁴¹ Luhmann, 1989, 55

and the purpose of the economic system isto create value by applying knowledge to work through alienation (buying or selling).⁴² However, as discussed above, the legal system and the political system exist outside the economic system, and thus in a society of which a capitalist economy is one aspect. In other words, there are other ways to create value by applying knowledge to work. For Luhmann, knowledge is information and the application of knowledge is communication; it is generally common to all social systems but what is communicated is specific to individual social systems. Thus, there is reciprocity between Luhmann’s idea of society and the information society, within which there is an information economy. By positing communication as the fundamental characteristic of society, Luhmann’s theory emphasises that society only exists not because human beings exist but because previously undefined substances or objects are defined and communicated by human beings. As I discuss in Chapter 3, communication in Luhmann’s theory is not simply of a typically linguistic nature (speaking and writing), but refers to all the ways that human beings interact with each other, including linguistically.

Aims of Study and Research question

The aim of this study is to develop a conceptualisation of the relationship between the waste hierarchy, zero waste economy and circular economy that encompasses the

⁴²Druckner, 1993, 7

different descriptions of waste created by the legal and economic systems. In order to do this, I employ Niklas Luhmann's systems theory, as I have explained above. As indicated earlier in this chapter, the literature points out that the goal of the zero waste economy is, in essence, to turn waste into a resource. Referring to the legal definition of waste mentioned above,⁴³ waste is a substance or object that is discarded; in this respect, as argued in the previous section, waste is either something material or something immaterial. If it something material, it is discarded when it is thrown away. If it is something immaterial, it is a form of communication that, as argued in Chapter 3, is discarded because it exists in society. Luhmann's theory is specifically concerned with the waste as a form of communication that describes waste as something material outside society. Thus, what is intended by the concept of the zero waste economy is a change in the meaning of waste to something that is a resource. However, the problematic with the literature on the zero waste economy is that there is no demarcation or distinction made between the material and the immaterial; the literature seems to focus on waste management as dealing with the material itself. A further problematic with regard to the zero waste economy is that, most obviously, there is an emphasis on the economic system. This is understandable, since it is clear that waste is a consequence of economic processes – but it is not only caused by economic processes. As waste is defined in law, it is arguable that waste is the consequence of processes that are described by the legal system as well. As argued

⁴³See above, footnote 1

above, the waste hierarchy is the means by which the zero waste economy is achieved. Yet, it is not clear from the literature how the economic processes of the zero waste economy interacts with the legal processes of the waste hierarchy, or even the equivalent political processes, at least not explicitly. As I argue in Chapter 3, the legal system in Luhmann's theory distinguishes between communication that can be used to describe the law and communications cannot be used to describe the law and set aside as systemic waste. But at some point the unusable communications are recycled and reusable in response to the environment, with a view that future communications are prevented from being set aside as waste. In this regard, the management of descriptions by the legal system indicates a process – reuse, disposal, recycling, prevention – that echoes what is known as the waste hierarchy. In Luhmann's theoretical conception of the legal system, the waste hierarchy is not a priority order of waste management activities but an observation of the way that communication about the environment is managed by the legal system over the period of its development, with the end result being the prevention of unnecessary communication.

As indicated in the introduction, the principal research question is, therefore, “to what extent does the legal system steer the waste management process?” By steer, I refer to Luhmann's understanding as the system's reduction of its difference with the

environment.⁴⁴That is, the system is irritated by the environment because the system's construction of the environment is not the same as the environment itself; it responds by adapting its position so that it is not irritated. When a system is irritated by the environment, it produces resonance in that it produces a response as a result of the autopoiesis of other systems;⁴⁵ it resonates with other systems. As discussed below, in Chapter 3, the environment is thus that which is waste to the system and it is managed by constructing its own version of the environment. I have deliberately left the research question somewhat ambiguous because there is some uncertainty as to the effect of the legal system on the waste management process. On the one hand, it seems to assume that the law has the ability to do something. On the other hand, it implies that the law does not have the ability to do much beyond steering in the Luhmannian sense (that is, adapting its own understanding of the environment). But this also suggests that there is a role for other functions as well. That is the paradox and the ambiguity that will be threaded through the text of this thesis, as I engage with the limits of the law. It is my thesis that the legal system can only steer the waste management process by steering itself but it can only steer itself through its relationship with its environment, including the economic system. In Chapter 3, I argue that the waste hierarchy is not just an explanation for the legal system's description of

⁴⁴Luhmann, 1997, 42

⁴⁵ Resonance is the relationship between a system and its environment and occurs in exceptional cases when the reverberation of a system is "noticed" by another system. (Luhmann, 1989, 15) In the biological sense, irritation is the stimulation of an organism, cell or organ to actively respond. My sense of the word is that it is like the sudden need to scratch even though it is not clear what is causing it as if there is something inside the skin trying to escape.

waste management processes but also for other social system's descriptions of waste management process. I argue that, in Luhmann's theory, the organisation is the mechanism by which the law, economics and politics can relate to each other and thus the implementation of the waste hierarchy within each social system results in the achievement of the circular economy in which organisations interact with each other to manage waste. It could thus be said that it is organisations that regulate society.

Motivation for the Study: some reflective observations

In 2006, while I was working there as a paralegal, I was appointed the Corporate Social Responsibility (C.S.R.) Officer for a high street law firm. I should say that C.S.R. was not a purposed career decision on my part but something into which I stumbled. I never asked them why but it may have been a result of a previously voiced passion. It was from undertaking that role from which the idea for this research topic came. The partners tasked me to draft a C.S.R. policy because they believed that a business should be concerned with the impact of its activities on the environment and the wider community - what is referred to in economics as externalities. In that sense, the purpose of the CSR policy was to attempt to internalise the externalities. For a business, which in Luhmann's theory is an organisation,⁴⁶ this meant constructing an internal version of the environment through decisions made in response to irritations

⁴⁶Seidl, 2010, 12; Luhmann, 1989, 15

by the external environment. As discussed in Chapter 3, the system is irritated by the environment because it cannot directly observe the environment; it only knows it is there because it senses some kind of pressure from outside. Thus, corporate social responsibility could be reformulated in Luhmannian terms as resonance in that an organisation makes a decision as a result of the autopoiesis of other organisations and social systems.

Creating the C.S.R. policy was the easy part. Implementing it was more challenging as this meant, amongst other things, persuading the rest of the staff to change their behaviour – for example, by switching off computer screens at the end of the day rather than leaving them on or not printing and forgetting about it. It was ultimately their actions within the firm in the carrying out of their employment duties that would have an impact on the firm's environment through the production of waste. Two approaches were adopted. There was the subtle way that involved working with various departments to change specific waste-producing processes, so that waste reduction was the more convenient choice or the only choice.⁴⁷ Then, there was the unsubtle way that involved verbal messages in the form of posters, emails and conversations. One method was invisible, the other was very visible. I do not know which approach was more effective – perhaps it was the combination of approaches – but in the end paper usage, and hence paper waste, had noticeably been reduced and,

⁴⁷One example was that paper was saved when confirmation was required to confirm a printing request before actually printing.

according to the company that collected the recyclable paper waste, 40 trees were saved.

Summary of Chapters

Chapter 2 deals with a review of various scholarly perspectives on waste. As discussed in the present chapter, the premise is that all the perspectives examined are valid and contain traces of the waste hierarchy, circular economy or zero waste economy in some form. The problematic is that they deal with waste as something material discarded by human beings and do not distinguish between the material and immaterial aspects. As a result, waste is always a problem to be solved. The aim of chapter 2 is to offer a description of the theoretical environment of social systems theory regarding the understanding of waste management – in a sense, to produce a theoretical overview that critiques past perspectives on waste with regard to their relevance to the policy concepts but does not “throw the theoretical baby out with the metaphorical bathwater”. This chapter forms the basis for the justification of using Luhmann’s theory for my theoretical framework.

In Chapter 3, I turn my attention to Luhmann’s theory of society in order to develop an understanding of waste that can be situated in juxtaposition with the perspectives examined in Chapter 2. The essence of Luhmann’s theory is that society is separated

from human beings. I argued that in making society the object of his theory, Luhmann could also include an understanding of waste production, not just as discarding but also handle the reusing or recycling of waste. In this respect, Luhmann's theory offers a way for conceiving of the waste hierarchy and the zero waste economy. In this chapter, I indicate how Luhmann's antihuman approach departs from Hegel's humanist theory of Recognition and Katherine Hayles' posthumanism. I take Luhmann's idea of language as the fundamental paradigm that connects psychic systems and social systems and develop it with reference to Thomas Kuhn's work on paradigms. This enables me make connections between Luhmann's social systems theory and organisational theory. Through the organisation, I make an encounter between Luhmann's theory and Cass Sunstein and Richard Thaler's libertarian paternalism or nudge theory to indicate how the law affects human behaviour. It is my view that Luhmann's theory enables a muscular theorisation that is lacking from Sunstein and Thaler's work. I also make connections between Luhmann's theory and Gunther Teubner's reflexive law, as understood by John Paterson. The aim of this chapter is to conceptualise the development of the circular economy as the interaction of organisations that mediate between different social systems and nudge human consciousness.

The aim of Chapter 4 is to reformulate the commons using the theoretical framework outlined in Chapter 3. The problematic with the literature on the commons is that

there are competing understandings of it, which seem to exclude other understandings. On the one hand, according to John Locke and Garrett Hardin, the commons is open to all and has to be enclosed for it to be managed effectively; the tragedy of the commons arises from everyone using too much of the resources. On the other hand, as Elinor Ostrom argued, the commons is not open to all but an enclosed space, managed by the users communicating and agreeing on rules; the commons is seen as a solution to the tragedy rather than the cause. Michael Heller, however, argued that the commons was in fact an anticommons in that each owner could exclude others and the tragedy was the consequence of too many users and not enough use – thereby resources being wasted. I argue that what unifies all three understandings of the commons is the importance of communication, coordination and mutual agreement. Thus social systems incorporate both a closed commons and anticommons in the open commons of society.

Having identified the fundamental component of the commons being communication in Chapter 4, I focus in Chapter 5 on the understanding of waste in the legal system as a commons. In particular, I review the European Court of Justice's decisions on the European Union's definition of waste in terms of discarding, which is left explicitly undefined. What is interesting is that judicial decisions indicate that discarding and thus waste as such is not understood by the law as it is by human beings. I argue that secondary literature does not offer a definition of waste or discarding that reflects the

development of the case law, instead critiquing the decisions. Using the theoretical framework outlined in Chapter 4, I argue that something is discarded and thus becomes waste when it has “entered” society from outside. In this chapter, I explore how Luhmann’s theory intersects with environmental law, offering an explanation of how a selection of international principles works in practice.

In Chapter 6, I turn to the policy literature relating to the reuse and recycling of waste and apply the discussion from the previous chapters. I focus on three mini-case studies, namely: the incentivisation of recycling using rewards, charging and fines; the debate over co-mingling and separation at source of waste in the household; and the creation of food waste by retailers partly as a consequence of laws on date labelling and a solution offered by the legal grey area of bin diving in the context of freeganism. My overall argument is that, while the law regulates its environment by regulating itself, it can only regulate itself with the resonance of the environment.

Chapter 2: Perspectives on Consumption and Waste

In Chapter 1, I indicated that different organisations are involved in the management of waste, such as government, local government, households and business, including those involved in the collection and processing of waste. There is a difference in the way different organisations understand the current waste policy challenge, which is to meet the final E.U. target for landfill waste reduction and recycling in 2020. Some are concerned and some want there to be more involvement of others. I argued that a particular problematic with the current understanding of those involved in the waste management sector, including policymakers, is the dominance of an economic approach in the form of an aspiration towards a zero waste economy or circular economy, as well as the fact that there is no clear understanding for how it fit together with the waste hierarchy as a legal framework. A further problematic I identified was that the policy and academic literature was concerned with turning waste into resource and yet still discussed waste as something material, instead of as a label or meaning that was attached to something material. I therefore argued that what was needed was a conceptualisation of society that encompassed the waste hierarchy, the zero waste and circular economy as ways of managing waste and resource as forms of meaning. This, I have argued, can be offered by Luhmann's social systems theory.

In this chapter, I engage with a selection of theorists outside systems theory in order to examine their perspectives on waste. The aim of this chapter is analyse their suitability for understanding the waste hierarchy, circular economy and zero waste economy. I imagine the various theorists – Jean Baudrillard, Italo Calvino, Zygmunt Baumann, Slavoj Zizek and Jane Bennett – to be in conversation or dialectic. Jean Baudrillard looked at waste as a product of a consumer society, hence my interest in Chapter 6 in the handling of waste produced by the household as consumer and by food waste produced by retailers. Italo Calvino's offering was part of a fictional account, as narrated by an imaginary Marco Polo to Kubla Khan, of the idiosyncrasies of some of the cities he visited on his travels. My interest was the city of Leonia and how it dealt with its waste; there is a sense of dramatic tragedy, which intersects with the literature on the commons discussed in Chapter 4. I juxtapose Calvino's work with a modern retelling by Matt Groening in an episode of *The Simpsons*. Zygmunt Baumann was inspired by Calvino's account of Leonia and takes it to a global level. In particular, he broadened the idea of waste to include humans as well. This feeds into my theoretical framework in Chapter 3 which describes first the deconstruction of the world into human value and waste and then reconstructs the world as communication by recycling waste. Slavoj Zizek pointed out that human beings, rather paradoxically, idealise nature as pristine and yet are keen to spoil it by sending waste there. This points not only to the discarded nature of waste as legally defined but also to the paradigm shift between a throwaway society and a zero waste economy. Finally, for

Jane Bennett, waste is alive in that it has an active part; Bennett called this ‘thing power’ but I argue that Luhmann called it communication, representing something that passes between human beings or material entities. I argue that they offer descriptions of waste that share similar aspects but are also different. However, I do not really disagree with the characteristics identified by any of the theorists. The problematic is that it is based on the traditional idea of waste as something thrown away, rather than as something that can be reused, recycled, used for energy recovery or even reduced. The primary focus of the different approaches seems to be waste as not wanted or harmful to others, rather than as a form of connection. What emerges is what Andreas Philippopoulos-Mihalopoulos has referred to as a paradox:

‘Etymologically, paradox is “the other belief” (*para-doxa*). Paradox is the first and last instance of dialectics. It initiates the other speech, the other speaking, their expressing a belief contrary to the belief of their interlocutor. This contrary belief, however, is equally valid, with the result that the discussion returns to itself without ever concluding anywhere. The adverb must be taken literally: the discussion concludes neither anywhere outside the *doxa* and the *paradoxa* (say, a third *doxa*); nor anywhere within the initial dialectic. Instead, it carries on whirling between the two initial *doxae*, without ever reaching a conclusion. But this irritates a dialectics habitually guided by reason, and (paradoxically) begets a *necessity* of coming to a conclusion – a moral,

phenomenological, logical, phenomenal, evolutionary, transcendental, operational, attributional, some sort of necessity anyway, which seems to be called upon by a whole constellation of known –logies to the effect that the discussion *carries on*. And quite rightly so: paradoxes are frightful things, they bring boredom, obsession, counter-productive repetition, paralysis, inability to communicate, inability to distinguish, no sense, nonsense. They are facile excuses and unlaborious shoulder shrugs, they obscure determination and encourage determinism, they force one to give up, to grin embarrassingly, to abandon battle, to take a nap under the trees. Paradoxes are too much hard work to be taken seriously and too easily resolvable to be attempted.⁴⁸

According to Philippopoulos-Mihalopoulos, a paradox is the continual restatement of different positions that can all be equally true and thus no position becomes dominant. In this respect, following Philippopoulos-Mihalopoulos above, selecting a suitable theory of waste is a bit like going to the supermarket for the weekly shop (with whatever that is not chosen ending up as waste even if it is valuable.) On the one hand, a paradox could be argued to be, at best, “an agreement to disagree”. On the other hand, a paradox could be seen as an amalgamation of the various blind men’s descriptions of the elephant. All the descriptions are subjectively true but, together, they make no sense. One has to take a step back to see the bigger picture and have

⁴⁸King and Thornhill, 2006, 218

even a remote idea how they fit together. In this Chapter, I argue that it is possible to draw up observational consensus because what connects the different descriptions is the idea of waste as a form of meaning. In Chapter 3, I argue that Luhmann's theory offers a methodology for forming consensus through the irritation of the system by its environment.

Jean Baudrillard: Waste as Product and Consumable

Jean Baudrillard's perspective of waste contextualises the production of waste within a wider economic cycle; we can only consume more if we throw away what was consumed before. In his analysis of consumer society in *Consumer Society*, Baudrillard argued that waste or 'wasteful expenditure' has always been produced throughout history as a demonstration of affluence, thereby redefining 'consumption' to 'consummation':⁴⁹

'...waste even appears ultimately as the essential function, the extra degree of expenditure, superfluity, the ritual uselessness of "expenditure for nothing" becoming the sites of production of value, difference and meanings on both the individual and the social level. Within this perspective, a definition of consumption as consummation – i.e. produced waste – begins to emerge, a

⁴⁹ Baudrillard, 1998, 43

perspective contrary to that of the “economic” (based on necessity, accumulation, and calculation) and one in which, by contrast, the superfluous precedes the necessity, and expenditure takes precedence in terms of value over accumulation and appropriation (even if it does not precede them in time).⁵⁰

According to Baudrillard, economic growth has made it possible for us to consume more products than we are able, so it becomes necessary to throw some of it away in order to consume more, which maintains economic growth and our capacity to consume. In his concluding chapter to *Consumer Society*, Baudrillard described the 1930s silent film, *The Student of Prague*, as an allegory for the cycle of consumption and production.⁵¹ The people are simply like ‘animals’ being manoeuvred at will by someone who is ruling over the city and pulling their strings.⁵² That someone is the

⁵⁰ Baudrillard, 1998, 43-4

⁵¹ In the film a poor student falls in love with a woman, but as she is rich, she is beyond his grasp. Later, the Devil appears to the student and makes him an offer: a pile of gold in exchange for his image in the mirror. As a result, the student is able to buy his way into society but the catch is that he has to keep avoiding mirrors so that no-one can see that he has got rid of his image. The Devil is able to recycle the image and, as it is his image, it keeps hounding the student, who keeps trying to get away. Eventually, there is a final encounter in his room and the student fires at the image, smashing in the mirror in the result. But what he hadn’t realised was that his image was always connected to him and that the Devil’s offer was not really realisable. Yes, he got his pile of gold, but he was never free of his image. By killing the image, he ended up killing himself, but ‘in his death throes’, he grabs one of the fragments of the mirror and looks in, and ‘realises that he can see himself again’. ‘He loses his body, but, by paying that price, his *normal* likeness is restored to him just before he dies’.

⁵² *ibid*, 187

Devil, who makes an offer; in exchange for a 'pile of gold', one can give up the mirror image of their life of consumption as signified by the waste they produce.⁵³

'The mirror image symbolically represents the meaning of our acts. These build up around us in a world that is in our image. The transparency of our relation to the world is expressed rather well by the individual's unimpaired relation to his image in a mirror: the faithfulness of that reflection bears witness, to some degree, to a real reciprocity between the world and ourselves. Symbolically, then, if that image is missing, it is the sign that the world is becoming opaque, that our acts are getting out of our control and, at the point, we have no perspective on ourselves. Without that guarantee, no identify is possible any longer: I became another to myself; I am alienated.'⁵⁴

According to Baudrillard, as long as people are fully connected to the meaning produced by their living, they do not need to keep doing things to acquire that meaning. Without the financial incentive of the pile of the gold, with which they can acquire new meaning in their lives, there is not much motivation to give up the existing meaning. Once the agreement with the Devil is signed, the cycle of consumption of products and production of waste becomes the daily sacrificial ritual that enables us to find more meaning to replace the previously-acquired meaning that becomes useless.

⁵³ Baudrillard, 1998, 187-188

⁵⁴ibid, 188

However, if their image reflects the waste products of consumption, the agreement with the Devil to take it away in exchange for money never quite rings true. The image that they had disposed of in exchange for wealth is revived by the Devil and put back into circulation:

‘The image is not lost or abolished by chance: it is sold. It falls into the commodity sphere, we might say, and this is indeed the sense of *concrete, social* alienation. At the same time, the fact that the Devil can pocket this image as an object is also the fantastic illustration of the real process of commodity fetishisation: from the moment they are produced, our works and our acts fall out of our grasp and are objectivised; they fall, literally, into the Devil’s hands.’⁵⁵

According to Baudrillard, as soon as people do something or produce something, the Devil is free to take what they have done and use it against them; their image becomes the highly-valued commodity that drives the process of meaning. Waste is that commodity. Thus, as James Walters observed, Baudrillard’s understanding of waste and consumption poses a challenge to the modern environmental discourse and its advocacy of recycling. Far from being separated from it, the waste haunts those from

⁵⁵ Baudrillard, 1998, 188

which it has been separated, either as a form of pollution or by being recycled in order to meet the demands of consumption. For the environmental movement, as with the economic system, use-value is the benchmark of consumption theory; waste is 'viewed as something opposed to consumption, an obstacle to its proper functioning, since fundamentally waste is "useless" and unmarketable'.⁵⁶ For Baudrillard, on the other hand, the system of consumption is founded upon the production of waste – one cannot consume more unless one has got rid of whatever remains of previous consumption. According to Walters, Baudrillard argued that the environmentalists' cause was futile: 'An inevitable entropic process is taking place and we should be wary of naively assuming that the system can be improved through the eradication of its negative aspects.'⁵⁷ In other words, waste is always produced; it is a natural part of the process of consumption. There has to be some way of passing it on somewhere else. In *The Student in Prague*, the protagonist is only able to free himself from the connection to the recirculated image by killing it but in doing so, he kills himself. One might conclude from this that it is not possible to get rid of recycled waste through any other means than consumption/consummation. The only way to really keep waste away is to neither recycle nor dispose of it. On the other hand, as can be seen with concepts such as "circular economy" and "zero waste economy", it could also be argued that recycling or disposal of waste are not the only options. The problem is not the cycle of

⁵⁶ Walters, 2012, 44

⁵⁷ ibid

consumption and production in itself but that we consume and produce too much, more than our environment can handle.

In this section, I have outlined waste as the fundamental component of the cycle of production and consumption. Waste is the point of our life of consumption; we consume, and we can only consume more by throwing away as waste what has been previously consumed. The Devil is the agent who not only takes away our waste but also enables it to be recirculated as a commodity, so that we can consume more. This can be seen in the circular economy. On a macroeconomic level, the pile of gold is economic growth, but at the level of the individual, the pile of gold it is the offer of a financial incentive. Thus, since waste is something that has economic meaning in that it has no economic value, but can be made to have economic value, the externality of the Devil reflects something that forms the boundary of the economic city. Once waste has crossed the boundary of the economic city, it remains in the environment, until it can cross back into the city as an economic component. Yet, the problematic that Baudrillard seemed to be highlighting is that we are predisposed to throw away waste but do not really know what happens to it once it cross the boundary. Philippopoulos-Mihalopoulos developed this aspect of Baudrillard's view of waste in his own reading of Luhmann's theory of society and I shall return to both in Chapter 3. Yet, the Devil is not known for his good intentions and his pacts seem apparently beneficial in the short term but tend to have unforeseen consequences in the medium to long term. Whilst

the recycling, reusing or otherwise recovery of the student's wasted mirror image seems to maintain the circular economy, it depends on the disposal of waste. The reduction or prevention of waste, in the form of the final conflict between the student and his mirror image, only seem to result in the student's death. In other words, following Baudrillard, it could be argued that waste is a substance of meaning rather than simply materiality in that it has to be produced and cannot be eliminated. In a sense, as indicated in Chapter 1, the problematic with recycling and waste policies so far is that it seems to have peaked and is starting to level off.

Calvino and Baumann: Waste as Forgotten and Remembered

While Baudrillard's approach discussed in the previous section could be seen as describing circular waste patterns or the city's circular economy, Italo Calvino's approach differed in that the environment is regarded as a convenient blind spot. Waste can thus be placed in the environment and occasionally make itself known to the city. In a sense, the zero waste economy for Calvino would be the physical removal of waste from the city. Zygmunt Baumann developed Calvino's approach so as to take a broader view of waste as anything or anyone that is not regarded as having value and so can be ignored. In the city of Leonia, as described by Calvino's Marco Polo, the constant need to consummate in order to consume, as a sign of wealth, is taken to ridiculous extremes. Every day, the people of Leonia woke up 'between fresh sheets',

washed 'with just-unwrapped cakes of soap', wore 'brand-new clothing', took 'unopened tins' of food from 'the latest model refrigerator' and listened to 'the last-minute jingles from the most up-to-date radio', while what's left of yesterday's Leonia waits on the pavements outside, wrapped up in clean plastic bags, to be collected by the street cleaners, who are 'welcomed like angels'.⁵⁸ Calvino's Polo surmised that that the religious-like nature of the task of taking away the waste was because, once they had thrown "stuff" away, they did not really want to have to think about it. In a sense, the sins of consumption of the Leonians are cleansed – yet all the people were interested in was carrying on with consuming more without repenting and changing their waste-producing lifestyles:

'Nobody wonders where, each day, they carry their load of waste. Outside the city, surely; but each time the city expands, and the street cleaners have to fall further back. The bulk of the outflow increases and the piles rise higher, becomes stratified and extends over a wider perimeter. Besides, the more Leonia's talent for making new materials excels, the more the rubbish improves in quality, resists time, the elements, fermentations, combustions. A fortress of indestructible leftovers surrounds Leonia, dominating it on every side, like a chain of mountains...the greater its height grows, the more the danger of a landslide looms: a tin can, an old tire, an unravelled wine flask, if it rolls

⁵⁸ Calvino, 1974, 114

towards Leonia is enough to bring with it an avalanche of unmated shoes, calendars of bygone years, withered flowers, submerging the city in its own past, which it had tried in vain to reject, mingling with the past of neighbouring cities, finally clean.⁵⁹

According to Calvino, the more the people of Leonia try to forget about their daily waste, to let someone else – the street cleaners, the environmental movement, the city administrators, even those who live outside - worry about it, the more likely it is to come back to bite them. The same sentiment is captured in *The Simpsons* episode, “Trash of the Titans”, in which Homer Simpson, fed up with taking out the waste, decided to contest the election for Springfield’s sanitation commissioner under a slogan of “Can’t someone else do it?”. (That is, it’s not my responsibility, someone else is to blame.) When he won, he implemented a round-the-clock waste collection service, which of course means he uses up his entire budget within a month. The solution seems obvious: to pay for the benefit of getting rid of all its waste, other towns can pay to dump their own waste in Springfield’s landfill. At some point, the land around Springfield really did become full up and the buried waste starts coming up from the ground all over the streets, as Calvino’s Marco Polo envisaged happening in Leonia. In Springfield, the only thing left to do was to physically move the town; but in Leonia, there’s not much that can be done other than carry on with what they have

⁵⁹ Calvino, 1974, 115-116

been doing and wait for Judgment Day. Bauman asked whether the Leonians ever see the mountains of waste:

‘Sometimes they might, particularly when a freak gust of wind wafts into their spick’n’span homes a stench reminiscent of a rubbish heap rather than of the all-fresh, all-glittering, all-fragrant innards of novelty shops. Once that has happened, it is hard for them to avert their eyes; they would have to look worried, with fear and trembling, at the mountains – and be horrified by what they saw....They would hate the leftovers of their yesterday’s reveries as passionately as they loved their brand-new dresses and up-to-the-minute toys. They would wish the mountains away, would want them to disappear...Even more than the leftovers themselves, the Leonians would abhor the idea of their indestructibility...’⁶⁰

According to Bauman, if the Leonians became aware of the negative effect of the heaps of rubbish that they can see and smell, they would want it to go away and would be horrified that the heaps will not degrade over time. They would not realise that the only way to make them disappear is not to just keep disposing of waste in the first place. While Baudrillard looked at the continuous need to consume and produce as a problem of spirituality and identity (giving up real meaning for a manufactured one),

⁶⁰ Calvino, 1974, 115-116

Bauman saw it as an ecological and social problem. To say that “the planet is full” in a sociological sense is to signal that, as a result of technological and economic progress, there are no ‘no man’s lands’ that can be treated as unfit for human habitation: ‘Such territories, now largely absent, for a great part of modern history played the crucial role of dumping grounds for the human waste turned in ever rising volumes in the parts of the globe affected by the processes of “modernisation”’.⁶¹ That does not mean that those former dumping grounds are not still used as dumping grounds. Shawn Cassiman has highlighted the phenomenon of “out of sight – out of mind”, otherwise known as “not in my backyard” (NIMBY) – clearly present in Calvino’s description of Leonia and implied in the pact with the Devil described by Baudrillard:

‘...in which the majority of folks, once the “waste” is wheeled to the curb, give it no more thought. It goes somewhere. It goes away. As a result we need to think of it no more. However, our waste does intrude upon our consciousness, as when a new landfill is scheduled for our community, sanitation workers go on strike, or perhaps a facility that burns waste, we are then acutely aware that it must go “somewhere”...As a result, waste is often located in communities or countries, that have contributed the least to the waste stream through consumption, and yet, these same communities bear the disproportionate

⁶¹ Calvino, 1974, 115-116

burden of the environmental devastation associated with consumption and the resultant waste disposal.⁶²

According to Cassiman, those most affected by consequences of waste disposal are those who have contributed the least to them and who have the least power or control over where it ends up. Thus, according to Bauman, waste no longer refers only to unwanted products seen as unusable but also to those people whose are seen as excessive, redundant, in the way and whose presence is inconvenient.⁶³ This may not just be a matter of the dumping of waste where these people live. As Cassiman observed, the ultimate goal of capitalism is 'the commodification of all life' in which human beings are treated just like any other commodity: 'People, just like the planet, are to not only be used, but to be consumed, in the process of accumulation, and then thrown onto the waste pile when no longer contributing to the "efficiency" of the market.'⁶⁴ Thus, following Baudrillard, not only solid waste but also human beings become our mirror image. One wonders, for example, whether the sanitation workers in Leonia were really welcomed like angels carrying out God's work or simply people whose presence was tolerated for as long as they took away our waste. Then there are those whom the media and politicians tended to refer as "those people" - single mothers, deadbeat dads, and welfare claimants – and, in the current climate of

⁶² Cassiman, 2013, 26

⁶³ Bauman, 2004

⁶⁴ Cassiman, 2013, 26

austerity, the unemployed and public sector workers to name a few.⁶⁵ One might even add migrants to the list - in essence the “collateral damage” of a particular policy or action. But this goes even further than the “market” or “government”; it comes down to individual interactions that everyone has the capacity to produce. For example, when we pop into a coffee shop or supermarket, what is the extent of our interactions with those who work there? Do we limit our interaction to what is needed for the fulfilment of our purchase or do we actually produce “waste” in terms of unnecessary interactions. One might even posit that the cycle of consumption and production is present in society’s view of relationships, the disposal of babies/foetuses before birth and desires to die by assisted suicide for being burdensome or not being fully human. That is not to criticise any of the aforementioned acts. To reframe what I argued earlier in this section, waste is an inevitable and unavoidable part of living on an individual level; it only becomes problematic when, in totality, too much waste is produced.

In this section, I have outlined waste as a consequence of the throwaway society. From Calvino, the essence of society is that people’s desire for the “new” has meant that literally everything is thrown away at the end of day so that they can be replaced the following day. In Leonia, the refuse collectors who take away the disposed waste are like angels, a more positive force than Baudrillard’s Devil, yet the unintended consequence is the ever-increasing manmade mountains in the environment. This

⁶⁵ Cassiman, 2013, 26

seems to take a more materialistic view of waste. However, following Baumann and Cassiman, the problem of waste could be said to be a global, not local, problem and is not just about unwanted or unusable “stuff”. Any entity, including human beings, that is regarded as not making a contribution to society, in particular a (post)capitalist society, could be mistaken for waste. Following Baudrillard, anything that had no economic value was in the domain of the Devil, something outside the economy. Following Calvino, waste is placed outside of society. However, following Baumann, what is outside of society is not somewhere that is absent of human activity. In this respect, wherever waste is placed, whether the city or the environment, it is somewhere that is accessible to humans. Everywhere is a commons made up of smaller commons. Following Cassiman, it is the aim of capitalism to eliminate waste by making everything valuable or useful, in other words, to achieve the zero waste economy. Thus, in Chapter 4, I take forward Cassiman’s suggestion that what is required is a reformulation of the commons as a possible description of a pathway to a circular economy within the capitalist context.

Slavoj Zizek: Waste as Imperfect and Beautiful

Appearing in Astra Taylor's short film, *Examined Life*,⁶⁶ Slavoj Zizek, the philosopher and psychoanalyst, combined the idea of waste as something thrown away with something that has value. It is not every day that one sees a philosopher actually standing in a rubbish dump, surrounded by waste that has ended up there and dressed in the bright jacket of a waste management worker. Of course, following Bauman and Cassiman, it is arguable that we are all standing and walking through rubbish dumps every day, picking up something to use from time and time and then throwing it away. Indeed, Zizek started his piece saying that 'this [the rubbish dump] is where we should start feeling at home'.⁶⁷ At one point during the video, Zizek stumbled upon a domestic fridge that has been discarded with food still inside: 'You can have half of a hamburger, or rather some cheese sandwich, then you can have a muffin and some juice.'⁶⁸ It highlights the problem of the reusability of food waste that I examine in Chapter 6. Whether or not the food is edible at the time of making the video, one wonders whether the person who threw away the fridge actually thought the same about the food. He put it down to our experiential understanding of what he called the 'ideology of ecology', which he differentiates from the science of ecology:⁶⁹

⁶⁶Taylor, 2008

⁶⁷ibid

⁶⁸ibid

⁶⁹ibid

'It is really the implicit premise of ecology that the existing world is the best possible world in the sense of it's a balanced world which is disturbed through human hubris. So why do I think this is problematic? Because I think this notion of nature, nature as harmonious, organic, balanced, reproducing, almost living organism, which is then disturbed, perturbed, derailed by human hubris, technological exploitation and so on is I think a secular version of the religious story of the Fall. And the answer should be not that there is no Fall, that we are part of nature, but on the contrary that there is no nature. Nature is not a balanced totality that the humans disturb, nature is a big series of unimaginable catastrophes...Another myth that is popular about ecology...is the idea that we Western people in our artificial, technological environment are alienated from immediate natural environments. We should not forget that we humans are part of the living Earth, we should not forget that we are not abstract, engineers, theorists, who exploit nature, that we are a part of nature, that nature is our unfathomable, impenetrable background...What we should do to confront properly the threat of ecological catastrophe is not all this New Age stuff to break out of this technological, manipulative world and to found our roots in nature but on the contrary to cut off even more these roots in nature. We need even more alienation from our life world; we should become even more artificial.'⁷⁰

⁷⁰ Taylor, 2008

According to Žižek, the ecological problem is not a consequence of our alienation from nature, per se, but that we are not alienated enough from the idealisation of nature as something that needs to be protected from us. In other words, according to Arthur Vafin, Žižek referred to nature as a social construct;⁷¹ when we use the word “nature”, we are often referring to something that has been identified as being outside or different from society, the place where the (artificial) life created by human beings take place. Žižek was arguing we should protect nature not because it is different to the home of human beings but *because* it is our home. This can be taken from the etymology of the word “ecology”, from the Greek *eco-* (“home”) and *-logos* (“reason”, “word”), which we determine through the science of ecology; how we deal with nature is the realm of economics, from *eco-* and *-nomos* (“convention”, “law”). It could be argued that the separation of nature and society as being dealt with by ecology and economics respectively creates the distinction between nature as somehow originary, out of which human beings came, and society as artificial. The social distinction drawn between human beings and nature is one of convenience. Thus, following Baudrillard, one can argue that humans and non-humans are a part of a larger cycle of consumption and production – they consume and produce and are consumed and are produced. Ironically, the joining of *nature and society* means, depending on the

⁷¹Vafin, 2012,5

perspective, that either both are natural and always existing or both are artificial and created by something else that went on before.

Waste, therefore, is not just what is produced following the consumption of products or human beings, but nature itself after its divorce from society. Following Baudrillard, the real nature is the mirror image of society and it becomes waste when we seek to deny the connection, but society cannot exist without being connected to nature; indeed, it is not surprising that nature is not seen as waste when it can be economically valued. According to Žižek, protecting nature must involve loving an imperfect environment: 'Love is not idealisation. Every true lover knows that if you really love a woman or a man, that you don't idealise him or her. Love means that you accept a person with all their failures. Stupidities, ugly points, nonetheless the person is absolute for you. Everything makes life worth living, but you see perfection in imperfection itself. That's how we should learn to love the world.'⁷²In another short film, *Living in the End Times*, named after his book of the same name, Žižek argued that what is required is an openness to and a patience to work within 'a much more stronger social discipline', not a 'state terror' but 'a new mode of living together as humans which will involve a much greater sense of solidarity and social discipline'.⁷³ Instead of trying to preserve the nature that we could like to exist, the one that we saw in the beginning on the first date, we should be engaging with the one that

⁷²Taylor, 2008

⁷³VPRO International, 2010

actually exists, the one that we wake up next to and actually does produce waste. This nature is not something else out there but neither is society a part of nature; the distinction between society and nature is artificial. It is arguable then that, just as the ideology of ecology represents a secular version of the Fall, there is something religious about the joining of nature and society, a marriage that God has brought together and which no man should separate – ‘no longer two but one flesh’.⁷⁴ On the one hand, if the ideology of ecology is a secularised version of the Fall that separates nature from society, then the real ecology is a secularised creation undertaken by human beings, setting themselves up in the place of God and performing the marriage (and the divorce).⁷⁵ On the other hand, if humans are themselves made in the image of God in the form of male and female, it could be posited that humans are not distinct entities from nature or society. Some humans are part of nature – they are idealised and treated as waste – and other humans are part of society. At the same time, some non-human entities are treated as a part of society, as human, and other non-human entities are treated as part of nature. Indeed, if one follows the Christian narrative adopted by Žižek, it could be posited that one should love what it is separated as waste because God first loved us who were separated from him, by bridging the divide.

⁷⁴*The Bible*, Matthew 19: 4-6, <https://www.biblegateway.com/>

⁷⁵ In an article in the *New Statesman* (Žižek, 2010), as well as in the short films *Examined Life* and the book and short film *Living at the End Times*, Žižek surmised that the Anthropocene is a geological age in ‘humankind is becoming a geological agent on earth’, as opposed to just one species amongst many. As an example, he referred to the unexpected strength of the earthquake in China in 2008 which was exacerbated by the pressure that the Three Gorges Dam has placed on the surface.

The fundamental argument of Žižek's theory of waste is that it is a consequence of the separation of the idea of nature and society. The problematic that Žižek identified is that nature is traditionally seen as ideal, perfect, beautiful and what existed in the beginning, whilst society is the ugly and imperfect and created by sinful man following the Fall. Society is the place where waste is produced, thus in order to clean up society, waste has to be removed; the problem is that the removal of waste from society means the transfer of waste from society to nature, thereby despoiling nature. Thus there seems to be an inherent paradox in trying to make an imperfect society more like a perfect nature. Indeed, if the aim of a zero waste or circular economy is not simply about the elimination of waste from society but the reusability of waste within society, then the separation between nature and society is problematic. Žižek offered a way of overcoming that paradox by pointing out the artificiality of the distinction between nature and society. Waste is produced and consumption takes place not only in society but also in nature. Thus, following Žižek, the circular economy could be seen as one part of a wider *ecosociety* – or even the economic system's understanding of the ecological society.

Jane Bennett: Waste as Alive and Actant

Political ecologist Jane Bennett could be said to be taking a similar approach to Žižek in that nature and society are connected; however, she goes a step further and actually

focuses on the relationship, rather than that they might be related. She described ‘the habit of parsing the world into dull matter (it, things) and vibrant life (us, beings) is a “partition of the sensible”.⁷⁶ By separating them, it is easier to ignore the ‘vitality of matter and the lively powers of material formations, such as the way omega-3 fatty acids can alter human moods or the way our trash is not “away” in landfills but generating lively streams of chemicals and volatile winds of methane as we speak’.⁷⁷ By vitality, Bennett meant ‘the capacity of things – edibles, commodities, storms, metals – not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities or tendencies of their own.’⁷⁸ She referred to this capacity as ‘thing power’, a force of a thing that provokes “affects” in another person or something else,⁷⁹ for example the repulsion felt at the sight of a dead rat and dismay over discarded litter. She wanted to express a vibrant materiality that runs alongside and inside humans to see how analyses of political events might change if we give the force of things more due’. Rather than waste, for example, being the output of a process of consumption, or the input to a process of production, consumption and production, are interactions between entities (which can be differentiated as human or non-human). So, I “consume” food, the food “fills” me up or “satisfies” me, the waste “irritates” me; I “throw away” the waste and so on. In a nutshell, I “affect” the waste and the waste “affects” me. Thus, the food, the waste,

⁷⁶Bennett, 2010, vii

⁷⁷ Ibid, vii

⁷⁸ Ibid, viii

⁷⁹ Ibid, 4

and I are all what Bennett referred to, with reference to Bruno Latour,⁸⁰ as ‘actants’ or sources of action. On a personal level, the idea of vibrant matter as actants makes intuitive sense to me, as it is an accepted practice within Indian culture and rooted in Vedic tradition that food should generally be eaten by hand (as opposed to fork and knife). There is a saying that eating with the hands not only feeds the body but also the mind and the spirit. The idea is that the hands (and feet) are regarded as conduits of the five elements – each finger and toe representing one element. The fingers are said to “transform” the food to aid digestion. In a sense, eating with the hands is an affective interaction between the consumer and the consumed. The washing of the hands before eating perhaps signifies the importance of the relationship with the food, just as one washes before interactions with God or other people. Of course, touch is an important method of communication between people across cultures and communities and conscious eating, as opposed to eating fast without chewing properly or while moving, is considered to be healthy. Bennett obviously went further than Vedic tradition in suggesting that even traditional artificial things, such as forks and knives, can also be actants, but this makes sense if nature and society are made of one flesh, as argued with Zizek above. Bennett differs from Zizek however in that, instead of nature and society both being artificial, everything is natural:

⁸⁰ Latour, 1996, 369: According to Latour, an actant is a human, non-human, individual or non-individual entity ‘that acts or to which activity is granted by others’. It can be anything as long as it is the ‘source of action’.

‘Why advocate the vitality of matter? Because my hunch is that the image of dead or thoroughly instrumentalised matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting (seeing, hearing, smelling, tasting, feeling) a fuller range of the nonhuman powers circulating around and within human bodies. These material powers, which can aid or destroy, enrich or disable, ennoble or degrade us, in any case call for our attentiveness, or even “respect”...The figure of an intrinsically inanimate matter may be one of the impediments to the emergence of more ecological and more materially sustainable modes of production and consumption.’⁸¹

According to Bennett, the view that some entities are dead or instrumentalised and other entities, notably human beings, are alive, make it difficult to detect the life in the non-human, thereby imposing limits on our ability to develop more sustainable modes of living. Bennett’s focus on “thing power” points to an affective relationship between living entities, between non-living entities and between living and non-living entities. The difference is that, for Bennett, all entities are living or have a degree of life or vitality. In this regards, there is reciprocity between Bennett’s approach and the Baumann’s blurring between human waste and wasted humans. Similarly, one can also draw a parallel with Zizek’s blurring of nature and society into what I refer to as an

⁸¹Bennett, 2010, ix

ecosociety in which waste is produced and thrown away, with a view to it being recycled, recovered or reused. Yet according to Bennett, thing power is the force that is given off by something material and which leads to a response by something else, such as repulsion or pleasure. Following Zizek and Bennett, thing power can cause to either love something valuable or hate something as waste, and the aim of the waste hierarchy is to enable us to love waste.

Conclusion

In this section, I have sought to review various perspectives on waste, namely Baudrillard, Calvino, Bauman, Zizek and Bennett, not as alternative theories but equally valid that describes different aspects of the waste management process. The aim has thus been to understand how these different approaches are situated in relation to each other.

- From Baudrillard, I take that the production of waste is the dominant function and a sign of affluence and economic growth and I argue that the continuation of the city as an economic system is dependent on the removal of waste and its eventual reuse or recycling, as a result of an external force. In this regard, Baudrillard's theory describes the operation of the circular economy, subject to

the environment. As far as the city as an economic block is concerned, waste crosses the boundary between the economy and the environment.

- From Calvino, I take that, in order to keep obtaining new things in the city, waste has to keep being produced. Every day, it is taken away and placed outside the city, where it can be forgotten about but does not disappear. From time to time, the waste outside the city is made noticeable. From Baumann, I take that people are horrified at the realisation that waste does not actually go away and that “the planet is full” in that there is nowhere left that can be treated as unfit for human habitation in order to place waste. In other words, waste is not necessarily something that exists separately from humans; instead wasted humans can become human waste. Thus, from Cassiman, I take that it is those who do have the least amount of power over the production and relocation of waste who are the most affected by it. It is regarded as being sent elsewhere because it is not economically useful in the capitalist system, yet Cassiman pointed out that the goal of the capitalist system is to make everything, including waste, economically useful. So when waste is sent into the environment, it means that the environment of the capitalist system.
- From Zizek, I take that it is the idealisation of nature and the artificial distinction of nature and society that causes the problem of waste pollution.

Thus, the problematic with the notion of physically removing waste from society and placing it in the natural environment is twofold. On the one hand, the natural environment becomes corrupted. On the other hand, the natural environment is not separate from society but the home in which society exists, thus forming an ecosociety. The divide between society and nature can only be bridged by a “stronger social discipline” and greater sense of solidarity in order to love the imperfections of waste.

- What Bennett brings is the idea that all material things are actants with the capacity to affect other things through thing power. Thus consumption and production are interactions between entities. Whether something is treated as waste or as something useful depends on the emotional response.

According to Baudrillard, the production of waste is the main function of society and it ensures the continued existence of society as an economic system. The problematic identified by Calvino was that a society of human beings wanted to removed waste from view, so that it could continue to consume the “new”, yet every now and again the waste in the environment would make itself known. Thus, as Bauman pointed out, in a globalised modern society, there is nowhere on the planet from where waste can be removed from human society to a place where there are no humans. In a sense, as I argue in Chapter 4, everywhere is a commons in that everywhere is accessible by

human beings, including for the disposal of waste. Indeed, Žižek argued that the problem of waste pollution is the distinction that made between an artificial, imperfect society where humans live and a natural, perfect space called nature; it is not possible to remove waste from society to because nature is the “home” where humans live and in which they create society. In this respect, human can exist without society but society cannot exist without humans. Thus, in chapter 3, I turn to Luhmann’s theory, which departs from other sociological approaches in that society is not a collection of human beings but the interactions between human beings. Since human beings are placed outside society in the environment, I argue in Chapter 3, following Bauman, that all human beings are waste from the perspective of society, as opposed to waste being the thing that a society of human beings throw away into the environment. In other words, in Chapter 3, I argue that communication represents the transfer of waste between human beings. But it is not just that waste is transferred between human beings; it also affects human beings and vice versa. Bennett argued that, like human beings, waste is matter with thing power that results in an emotional reaction. Thus I argue in Chapter 3 that communication is what takes place between the thing power of and the emotional response in material entities. In chapter 1, I argued that the dematerialisation of waste intended by the concepts of the waste hierarchy and the zero waste economy is not about the physical removal of waste from society but about giving value to something material. Thus, to take the Christian narrative employed by Žižek, if the alienation of a perfect nature from society echoes the Fall,

then communication enables us to love the imperfections of waste. If the world is made from nothing and human beings from dirt, then the thing that represents love of something without value is communication. In this respect, in Chapter 4, following Cassiman, Luhmann's theory enables a reformulation of the commons in which communication is the resource shared between human beings that create value.

Chapter 3: The Waste Hierarchy and the Dematerialisation of Waste

In Chapter 1, drawing from the policy literature, I highlighted that there seemed to be a levelling off of the household recycling rate since 2012, despite a fast rise prior to 2009. This had led to various stakeholders in the waste management sector raising concerns that the U.K. would not meet its EU 2020 obligations to increase the recycling rate by 50%, especially in light of Defra's decision to "step back" from certain areas of waste policy. I also pointed out that the legal definition of the waste hierarchy as a priority order of activities was somewhat limited as a way of representing the shift from a throwaway society to a zero waste or circular economy. I indicated that, with reference to Van Ewijk and Stegemann and Hultmann and Corvellec, the waste hierarchy reflected the communication or ranking of desirability of waste management options. However, it was difficult to see from the policy and academic literature how it could achieve the idea of zero waste. I posited that the use of zero waste was not so much the non-production of material waste but the production of waste material that was not regarded as waste. I argued that the purpose of the waste hierarchy was not to reduce waste production in a physical sense but to reduce the likelihood that material produced was understood as waste. In other words, the waste hierarchy was meant to dematerialise waste, not by necessarily reducing material tonnage but by transforming waste into an immaterial substance attached to something material. In

this respect, as mentioned in Chapter 1, the waste hierarchy can be seen as a legal mechanism to transform an economy from capitalist to what has been referred to as post-capitalist, that is from one based on the transfer of material to one based on the communication of information about the environment. Thus in this chapter, following Van Ewijk and Stegemann and Hultmann and Corvellec, I take forward the idea of the waste hierarchy as a method to communicate the desirability of waste management options. In Chapter 2, I sought to describe the theoretical environment of Luhmann's theory with regard to perspectives of waste, by engaging with the work of Baudrillard, Calvino, Baumann, Zizek and Bennett. I found that, in general, each of the theorists did see waste as something both material and immaterial – whether Baudrillard's mirror image, Zizek's idealisation of nature, Bennett's thing power and Baumann's blurring of the boundary between "human waste" and "wasted humans". The perspectives, both individual and in relation to each other, was helpful in identifying particular aspects of waste and the operation of the waste hierarchy, zero waste economy and circular economy. I concluded that:

- Waste comprises material and immaterial aspects;
- The quality of being waste, that is unwanted or unusable, is found in the immaterial aspect;
- Waste can be transformed into a resource through the operation of something in the immaterial environment;

- The immaterial is situated in an in-between space between the thing power and the resultant emotional response that is produced by the material.

Thus, in light of my conclusion to Chapter 2, the premise of this chapter is that the immaterial space in-between the thing power of an entity and the emotional response of another entity is society, which produces communication. Luhmann's aim was to develop a sociological theory that described the operation and development of the modern global society, which he saw as being characterised by differentiation on the basis of the functions of society (functional differentiation) instead of on the basis of hierarchy (stratification). In a sense, society is the space that is outside the control or boundary of individual entities. What is interesting from his theory is that the process of functional differentiation was not a particularly modern phenomenon that started in the post-war era or even since the Industrial Revolution; he suggested its origin could probably be traced back to the medieval period. But it did not begin with a big bang, or with the divine pronouncement: 'Let there be a functionally differentiated society'. Instead, it was a logical development of a society that had already developed hierarchical structures. For this reason, talking about society as having an origin did not mean anything as whenever the origin was going to be set, there would always be something that happened before. Functional differentiation has not completely replaced stratification; instead, it seems that, from Luhmann's theory, society always had to comprise differentiation and if it was not going to be primarily on the basis of

hierarchy, which seemed to be the desire of humanity, then it has to be primarily on the basis of societal functions. In a sense, society is in transition from stratified to functional differentiation. Thus, Luhmann described differentiation on the basis of stratification as the 'useless byproduct' of functional differentiation.⁸² In other words, as I argue in this chapter, differentiation on the basis of stratification is essentially waste in a society differentiated on the basis of social function. That is, each social function creates its own hierarchy by prioritising what it can understand and does not prioritise what it cannot understand.

What differentiates Luhmann's theory of society from traditional sociological approaches is that he did not view human beings as a part of society. Individual human beings can only be differentiated from other human beings, as well as from society and other material entities, because they each have something that the other human beings do not have – their own mind and body. According to Luhmann, the only thing that a human being has that other human beings do not have is consciousness: 'What another has perceived can neither be confirmed nor repudiated, neither questioned nor answered. It remains within consciousness and opaque for the communication system as well for another consciousness.'⁸³ In the eyes of autopoiesis, human beings are called psychic systems that produce individualised meaning or cognition about what takes place in the environment, in the form of consciousness. By contrast, social

⁸²Luhmann, 1997a, 70

⁸³Luhmann, 1992, 253

systems, which refer to the actual functions of society, produce shared meaning about the environment in the form of communication;⁸⁴ according to Luhmann, communication is ‘synthesis of information, utterance and understanding’.⁸⁵ Thus, human beings are unable to communicate.⁸⁶ Each human being can only develop their own view of the world and views, beliefs, etc. about the world can only be shared through communication. Can there ever be a single view in society about the world? As I indicated in Chapter 1, Luhmann thought that consensus between human beings was not possible. Human beings can think but, like the metaphorical tree falling in the forest, unless another human being recognises it as a thinking human being, it only exists as such in one’s own perception. Indeed, according to Luhmann’s theory, even the second human being would still only perceive the environment within its own mind. In this regard, I would argue that Luhmann’s claim that he is an heir to Hegel is convincing.⁸⁷ Hegelian Recognition – or Re-cognition – as a human process that unified

⁸⁴ Luhmann has provided his most exhaustive list of social systems in *Ecological Communication* (1989); this thesis focuses primarily on the legal and the economic systems although the list includes political systems, scientific systems and religious systems.

⁸⁵ In English, the German word used by Luhmann, *Mitteilung*, is sometimes translated “utterance” (Luhmann, 1986, 174; Luhmann, 1995) but Hans-Georg Moeller preferred “announcement”: ‘I hesitate to use “expression” because it is associated with the expression of “thoughts” or “intentions”. Similarly, “utterance” hints at the existence of something beyond communication, which is then uttered in communication. The term “announcement” is a bit more technical and does not necessarily imply a realm outside of communication coming to bear within it.’ (Moeller, 2006, 203-4, ff 7). I do not agree with Moeller as to the distinction – announcements still presuppose an announcer - and I do not think it is of importance as communication is a method of observation or description about the environment. Furthermore, as Luhmann has argued, psychic systems do have some involvement in communication even if not directly (Luhmann, 1988, 379).

⁸⁶ ‘Humans cannot communicate; not even their brains can communicate; not even their conscious minds can communicate. Only communication can communicate’ (Luhmann, 1988, 371; Moeller, 2012, 23)

⁸⁷ Gumbrecht and Hediger (tr), 2012, 9; Lee, 2000, 321

consciousness and a secondary form of consciousness that enabled the mutual recognition between two self-conscious entities and could be described in Luhmannian terms as the process that transforms consciousness into communication.⁸⁸In other words, Recognition could be seen as the process for a structural coupling between psychic and social systems.⁸⁹ The problematic with Hegel's theory of Recognition is that it does not explain how consciousness is transformed in a secondary consciousness (communication). As I indicate in this chapter, according to Luhmann, the structural coupling between psychic systems and social systems was enabled by language, but it is not what is ordinarily expected. Where Luhmann departed from Hegel was in the decentring of the human and the shift of focus to the process of communication, which Hegel referred to as mutual recognition. Furthermore, whilst Hegel's philosophy is often cited as describing the formation of a "synthesis" between a "thesis" and an "antithesis", words that Hegel himself never used, I would posit that Luhmann's theory leaves out the two antitheses and describes the actual process of

⁸⁸ According to Hegel, 'self-consciousness exists in itself and for itself, in that, and by the fact that it exists for another self-consciousness; that is to say, it *is* only by being acknowledged or "recognised"' (Hegel, 2003, 104). In other words, the self-consciousness can be certain its own existence only when another self-consciousness is aware of their existence. Hegel described 'the process of self-consciousness in relation to another self-consciousness' as being the actions of two independent and distinct individuals (Hegel, 2003, 105). The consequence was that self's recognition of the other never quite matched the other's recognition of the self; what he referred to mutual recognition in this respect was the unity of two independent processes of recognition.

⁸⁹Luhmann, 1992a, 74-5: 'The concept of a structural coupling was introduced by Humberto Maturana to designate how the operatively closed autopoietic systems can maintain themselves in an environment, which on the one hand is the precondition of the autopoiesis of the system but on the other does not intervene in the autopoiesis...As Maturana puts it, structural coupling stands in an orthogonal relation to the autopoiesis of the system. They contribute no operations with the capacity to reproduce the system itself, that is to say in our case: no communications. They stimulate the system, however, to irritate, they disturb the system in a manner which is then given an internal form with which the system can work.'

synthesis. Therefore, I would argue that, by being uttered and understood, communication in social systems is what takes place in between the moments of individual recognition, after information has been separated or detached from the mind of a human being and before it connects with another mind. Recognition is the process by which human beings perceive other human beings as different. But recognition presupposes there is social communication, outside the human and in the space between human beings. On the one hand, communication could be regarded as the thing that connects difference. On the other hand, since human beings are different and interact in different ways, communication could be regarded as fragmented. Whilst Luhmann did not seem to see much of a consensus that developed through rational discourse, as indicated in Chapter 1, I argue in this chapter that consensus does develop in society through communication but not between human beings in themselves; instead, it is the role of organisations to develop a consensus between different ways of understanding the environment so that decisions can be made.

Since human beings are outside of society, then there is no reason why non-human material entities cannot participate in communication. In this chapter, I argue that, from society's perspective, waste is not a material entity but a form of communication in that it is the act of "throwing away" or the thought that something can be thrown away that makes something waste. As indicated above, it is the marking of something

as waste that is a by-product of functional differentiation; since hierarchy is a consequence of human beings, then waste as communication is what Baumann referred to as human waste and thus also wasted humans. In law, this is referred to as “discard” or “intention to discard”. Using the above understanding of waste as comprising an immaterial element, this chapter is concerned with reconceptualising the waste hierarchy, with a view to going beyond the policy literature: the waste hierarchy is not simply “consistent” with the circular economy but actually describes how its implementation achieves the circular economy. The “waste hierarchy” as a priority order is the human understanding of the process to implement the circular economy. In addition, in Luhmann’s theory, human beings also had a different understand of waste, and therefore the path to a zero waste economy is not so obvious and it can seem to be like taking one step forward and two steps back (or vice versa). I take Luhmann’s understanding of society as something nebulous without clearly defined boundaries, but nevertheless existing. In Chapter 4, I argue that, by applying the theoretical framework outlined in this chapter to the literature on the commons, this nebulous entity can only be managed from within its functions, its social systems. Thus, the management of waste depends on independent processes dealing with law, economics, and politics and so on, with the waste hierarchy referring to a process of autopoiesis in each system. In this respect, I argue in this chapter that, contrary to the literature discussed in Chapter 1, the circular economy is not the

economic system alone but the relationship between all systems in the waste management process.

Language as Structural Coupling

Structural coupling is Luhmann's way of describing the mechanism for the system's relationship with the environment. In Luhmann's theory, as a social system, the system observes the environment, by being irritated by it and producing communication. As indicated above, communication is the selection of information about the environment through utterance (presentation) and understanding (interpretation). But the system must then categorise its communications using its own *binary coding*,⁹⁰ which is carried out in accordance with its own programming.⁹¹ However, the system's binary coding sits on top of a more fundamental process of binary coding, acceptance/rejection;⁹² a communication is accepted by the system if it can be coded

⁹⁰Luhmann, 1989, 36: 'The most important function systems structure their communication through a binary or dual-valued code that, from the viewpoint of its specific function, claims universal validity and excludes further possibilities. The classical example of this is the binary code of logic used by science. Analogously, the legal system operates with a code of legal and illegal. The economy uses property and money to distinguish clearly between possession and non-possession so that the long-term possibilities of the transfer of commodities and money can be organised and calculated, and politics is guided by the questions of power that accompany governmental authority and which are put to the vote using ideological conservative versus progressive or restrictive versus expansive.'

⁹¹ Programs are conditional statements that enable a system to determine whether an operation is suitable for selection to be coded (Luhmann, 1989, 45). In the legal system, programs are 'found in laws or ordinances, statutes or procedural rules, in judicial rulings or contractual agreements', that is existing laws. (Luhmann, 1989, 64). The scientific system's programs are found in as the existing theories (Luhmann, 1989, 76).

⁹²Luhmann, 1995, 147-8

as one of two values, based on the program, otherwise it is rejected if it is not relevant and left as a matter for the environment to deal with. Philippopoulos-Mihalopoulos referred to this fundamental binarism as usable/waste;⁹³ communication is accepted because it can be used by the system to produce more communication in future, otherwise it is rejected as waste. In other words, the system can develop its own understanding of how its environment operates whilst at the same time changing its understanding when something new takes place. But waste in this instance means systemic waste and not material waste that is physically thrown away into the environment. The latter is something rejected in reality while the former refers to something not really rejected but given a 'rejection value' by the social system that indicates "'a space of absence" within the system...that irritates the system from within, occupying its systemic "margins" and constantly reminding it of its limitations'.⁹⁴ This space of absence is the system's own construction of the environment. It contains all the communications that the system does not consider relevant to its own autopoiesis but has to place somewhere. The system cannot discard rejected communications into the environment, because it cannot see the environment; it is only irritated by it. The system becomes structurally coupled to other systems through its own internal environment.

⁹³Philippopoulos-Mihalopoulos, 2007, 196

⁹⁴Philippopoulos-Mihalopoulos, 2010, 125

The structural coupling between systems, therefore, can be described using paradigms. Etymologically, from Latin and Greek, a paradigm is a pattern or example, its purpose being to illustrate, rather than prove, similar occurrences. In his 1966 essay, *The Structure of Scientific Revolutions*, Thomas Kuhn understood “paradigms” to be ‘universally recognised scientific achievements that for a time provide model problems and solutions to a community of practitioners’;⁹⁵ the thesis of his essay was that science does not progress by the gradual accumulation of knowledge but as a result of paradigm shifts that occur because the progress of research to solve a real-life problem has highlighted too many contradictions with an accepted paradigm or model problem. For him, paradigms seemed to be particular theoretical frameworks.⁹⁶ The essence of paradigms, however, is their acceptance by a group of people. It is not the same as programming or programs in Luhmann’s theory which are conditional statements by which a social system knows that communication can be coded. The closest phenomenon in Luhmann’s theory to what Kuhn called a paradigm shift is thus a reversal in the way certain communications are coded - for example, from lawful to unlawful or scientifically true to false – that leads to the rejection of a number of accepted communications as unusable and the acceptance of rejected communications as usable. I would argue that a paradigm is an environmental observation - that is, recognition by human beings in the environment -of the

⁹⁵ Kuhn, 1966, vii

⁹⁶ As a physicist, he identified geocentrism, heliocentrism, Newton’s laws of motion and Einstein’s theory of relativity (although one could add quantum theory).

relationship between social systems operating independently; it can be considered a pattern of understanding, with a paradigm shift indicating a change in the external observation. Later in this chapter, I argue that a paradigm is the result of decision-making within a particular organisational context and it is through paradigms that organisations build a consensus between different social systems. In Chapter 5, I argue that environmental law – or environmental legal system - is guided by a form of paradigm that are called principles in the environmental law literature. Paradigms or principles describe the relationship between social systems. It is organisations that enable the much more fundamental paradigm shift to which Luhmann referred: from a society that was made up of human beings to a society that was made up of communications and where human beings as psychic systems were excluded to the environment. In other words, this fundamental paradigm shift was from a human understanding of society to a more social understanding in that society existed in the space apart from human beings.

Language is the symbolic medium of the structural coupling that enabled the fundamental paradigm shift in Luhmann's theory. By language, Luhmann was not referring to a particular system but to something that provided a boundary to consciousness and communication.⁹⁷ In her Foreword to Luhmann's *Social Systems*, Eva Knott described language as 'a medium' in that it enables the generation of signs

⁹⁷Luhmann, 1989, 16

or symbols, both verbal and non-verbal, that 'facilitate the formation of social systems' and 'serve as an interface between conscious systems and social systems and permit their structural coupling by encoding the difference between information and utterance in ways that stabilise the co-ordination between the two and in so doing increase their internal complexity'.⁹⁸ In other words, the existence of language is indicated not only by words but also by other forms of representing information including physical action and the senses. Thus, communication takes place as a result of not only hearing, speaking and seeing but also smelling and touching as well as other movements. As I argue below, language is a part of the material environment, through which psychic systems and social systems interpenetrate each other:

"Interpenetration" does not refer to a comprehensive system of coordination or to an operative process of exchange... "Interpenetration" can only mean: the unity and complexity...of the one is given a function within the system of the other'. The way in which this occurs can be demonstrated only in the structures and operations of each individual system; it could not occur otherwise. Interpenetration therefore takes a different form in systems of the mind than in systems of communication.'⁹⁹

⁹⁸Luhmann, 1995, xxxii

⁹⁹Luhmann, 1988, 386.

According to Luhmann, systems may view something that has happened in different, system-specific ways and interpenetration indicates that what goes on in one system shapes the other. Christian Borch has highlighted where Luhmann compared interpenetration to biological penetration, where one system makes its own complexity available to another system but not vice versa and this was how social systems presuppose “life”,¹⁰⁰ as produced by biological systems. In his own interpretation of Luhmann’s text, Borch argued that the notion of ‘penetration points to the materiality continuum which is needed for systems to exist, while interpenetration describes occasions where this materiality continuum is reciprocally constituted, and where the systems rely on the complexity they make available for one another’.¹⁰¹ Cells and immune systems – and other biological systems such as organs, bodies and ecosystems – will work without the complexity of social systems but both social and psychic systems can only develop with the complexity made available by each other as well as life. Consciousness cannot be produced in the psychic system without the brain or the body, and communication cannot be produced without at least the mouth, the ears, and the hands. However, Luhmann observed that life is just one part of the material continuum:

‘Remarkable is the fact that communication can only be stimulated by the mind and not by physical, chemical, or neurophysiological operations as such.

¹⁰⁰Borch, 2011, 39

¹⁰¹ Ibid, 39

Radioactivity, smog and diseases of all sorts may increase or decrease. Such a fact can have no effect on communication if it is not perceived, measured and made conscious; only then can the fact stimulate the attempt to communicate about it according to the rules of communication. Even in an airplane that is about to crash, it becomes possible to communicate about the impending crash only if it is perceived. The crash itself cannot influence communication; it can only end it.¹⁰²

According to Luhmann, there are aspects of the material continuum that are neither living systems nor non-living systems such as psychic and social systems that do not have an effect on social systems because communication can only be produced in the social system about something material if it is first perceived in the psychic system. But, in order for perception to be “transformed” into communication, or vice versa, something has to happen in the material continuum. At the very least, sound or light waves must reverberate through the air and be detected by the sense organs. How it is then perceived or understood may well depend on its journey through the material continuum, for example, the reflecting (rebounding) of surfaces, the refracting through substances, the movement of sound and light sources and so on. Furthermore, the materiality of a situation may well be relevant to how it is understood, for example, whether something has been thrown away into a bin (“waste”) or placed into a letter

¹⁰² Borch, 2011, 40

box (“letter”) – indeed, pushing waste into a letter box or a postman throwing away undelivered letters into the bin may well affect the way the legal system codes such acts. As I indicate later in this chapter, the material continuum in the form of the ecosystem does have an impact on whether and how much waste is produced. Borch has suggested that the terms “penetration” and “interpenetration” are not particularly ‘well-chosen’ in light of ‘Luhmann’s insistence that autopoietic systems do not have the capacity to penetrate one another in the sense of infiltrating each other with their operations’.¹⁰³ However, I do not think that Luhmann meant “penetrate” or “interpenetrate” in the sense of entering. More likely, “penetration” and “interpenetration” are how Luhmann as a human being conceived of the irritation of psychic, social and the material continuum – that is, the social system referring to something outside. With the acceptance of Luhmann’s work by others, “penetration” and “interpenetration” have become paradigms for irritation by the environment. Through autopoiesis, as indicated in Chapter 1, systems reverberate in this material continuum until they *resonate* with other entities; one system produces resonance in response to irritation by the environment as a partial result of the autopoiesis of other systems. Not all of the material continuum will necessarily consist of autopoietic systems,¹⁰⁴ but that does not mean they do not have an effect on life, consciousness or communication.¹⁰⁵

¹⁰³ Borch, 2011, 40

¹⁰⁴The autopoiesis of biological systems has been already established by Humberto Maturana and Francisco Varela. Luhmann subsequently adopted the concept of autopoiesis to describe psychic and

In this section, I have sought to describe the operation of social systems in general, and hence of society, and its relationship to human beings and the material environment. Perhaps the best way to summarise this section, would be to picture a social system as a metaphorical filing system, with three compartments, for organising shared or communicated information about what goes on in the environment. Each social system uses its own form of binary coding to categorise communication, placing it in one of the first two compartments. So, the legal system codes as lawful or unlawful, the economic system as payment/non-payment, the political system as government or opposition (that is, a political action is either in government or in opposition) and so on. The system knows it can code communication based on its own programming- its own systemic memory of how communications have been coded previously. The way a system codes a specific communicative event is meant to maintain its own autopoiesis by reproducing the capacity to produce further communication. So, in Luhmann's theory, communication is acceptable or useful if it can be coded in accordance with its own programming. Patterns of understanding can be recognised from the

social systems, as non-living systems which produced their own cognition in the form of consciousness and communication respectively. He argued that simply restricting autopoiesis to the creation of life prevents it from becoming a theory for systems in general, which includes the brain and machines, psychic systems and social systems, societies and short-term interactions (Luhmann, 1986, 172). Hans-Georg Moeller has suggested that autopoiesis is not limited to minds, bodies and social systems and has cited Luhmann's speculative references to the possibility of the emergence of autopoietic computing technology, but as technology has not reached that stage Moeller regarded the global climate system as a more suitable candidate (Moeller, 2012, 58).

¹⁰⁵ Francis Halsall has argued that Luhmann needed 'the concepts of irritation and interpenetration to save his theory from extreme abstraction in the light of the claim that bodies are not only in society but are also part of its environment' (Halsall, 2012, 18-19).

environment of the social system in the form of paradigms. I argue later in this chapter, with reference to Luhmann's organisational theory, that paradigms are a part of the organisational habits or culture in which the relationships between social systems are contextualised. Thus, if a system cannot code specific communication in accordance with its programming, the communication is unusable and places in the third compartment, labelled "rejection" or "waste". Rejected communication can only be understood (made usable) by reference to other social systems. Social systems change the way that it codes communication about the environment in response to changes in the organisational culture – a paradigm shift. As I argue in the next section, all communications, whether useful or not, contribute to the social system's programming. In this respect, each social system has its own waste bin or rubbish dump – not so much a landfill as such but a "communication-fill" for want of a better word. Whilst waste in the material environment is something that is thrown away, waste in the social system (rejected communications) are acts of throwing away that cannot be coded. In Chapter 1, I mentioned that waste is legally defined as a substance or object discarded by the holder (a natural or legal person), but this only relates to the law's understanding of anything thrown away by the holder. But, from the legal system's perspective, what is being thrown away by the human being outside the legal system is communication, the act of throwing away, a reference to the transfer of matter between human beings. But what the legal system considers waste is uncodeable communication – that is, acts of throwing away that cannot be categorised

as lawful or unlawful. This is what I refer to as systemic waste. The political system and the economic system distinguish between waste as communication and systemic waste as rejected communication in a similar way, using their own forms of binary coding. Thus, waste management in Luhmannian terms is not concerned with the actual physical treatment of matter but with whether society has mechanisms for dealing with the handling of physical matter by human beings. Can the law deal with it? Can the market (the economic system) deal with it? Can the political system deal with it? But an autopoietic social system cannot understand waste management purely through its own operations and binary coding. The problematic is that a social system cannot understand what it cannot understand, except to the extent that it cannot understand it. In other words, it knows that there is something outside of its limits of understanding; it just does not have the internal capacity to understand what that something is. It can only respond to irritation by the environment by changing the way it codes communication and, in so doing, changing its programming.

Continuing with the metaphor of the filing system, it could be said that human beings in the material environment select the information for filing away and it is filed in the social system according to the binary code and programming. The process of filing away is enabled through Luhmann's fundamental paradigm, language, which transforms consciousness in the psychic system into communication in the social

system. One might liken it to a comparison between one's own understanding and the labelling on the filing system and interpenetration could be thought of as the physical placing or removing from the filing system. Anything that cannot be coded in the social system can only be understood as a result of the human being as someone outside the social system developing an overall, internal understanding of social systems. This understanding is then shared with other human beings through communication in social systems. In other words, as I indicate in Chapter 6 in relation to the development of waste policy in England, it is the operation of psychic systems that ultimately cause resonance within social systems, through the development of paradigms, principles or theories as environmental observations of relationships between social systems. However, what Luhmann theory does is to make distinct the operation of the system from its environment and also to make distinct society from the material environment and psychic systems. Society has an undefined boundary and its own systems that are both operationally closed and cognitively open. These are: social systems, as well as interaction systems and organisations. In society, social systems are irritated by the environment, which comprises other social systems. But, as I argue in this section, the interpenetration of social systems and psychic systems and the penetration of the material environment in social systems are paradigms for the irritation of social systems by the environment. This suggests that the environment of the social system comprises other social systems, psychic systems and the material environment. At the same time, while the operation of social systems may result in resonance in other

social systems, language transforms communication into consciousness and vice versa. But language, according to Luhmann, is the material environment. Thus, it could be argued that social systems and psychic systems are both irritated by the material environment, which is what Philippopoulos-Mihalopoulos referred to as the “open ecology”, etymologically *oikos* (Greek, “home”) and *logos* (Greek, “language” or “rationality”), the combination of ‘the natural, the human, the artificial, the legal, the scientific, the political, the economic and so on, all of which co-existing [sic] on a plane of contingency and fluid boundaries’.¹⁰⁶ Yet, social systems’ external reference to other social systems, which enables coding of waste, do not take place within psychic systems but are affected by the operation of psychic systems in the environment. As I indicated above and argue later in this chapter, external reference occurs as a result of decision-making in organisations. In this respect, therefore, it could be argued that, if waste is that which a social system cannot code about the environment, then a social system steers its own waste management process in response to irritation by its environment. But by steering its waste management process, resonance is produced in the environment. I would thus postulate that, since the circular or zero economy is an economy in which all waste is usable and the aim of the waste hierarchy is to provide a mechanism by which the circular economy is achieved. As I argue in the following section, the waste hierarchy in Luhmannian terms is not specifically a legal concept, as

¹⁰⁶Philippopoulos-Mihalopoulos, In: Philippopoulos-Mihalopoulos, 2011, 2

suggested by the secondary literature cited in Chapter 1, but a paradigm for the operation of social systems in general.

Waste Hierarchy as a Paradigm for Autopoiesis

Since systems respond to the irritation by an environment that comprises other systems, the production of waste in the open ecology can therefore be conceptualised as an entropic process. According to the laws of thermodynamics, entropy is the loss of energy from an area of higher temperature to an area of lower temperature to achieve an equilibrium temperature and avoid “heat death”.¹⁰⁷ In chapter 2, I referred to Walters who observed how Baudrillard’s process of consumption and consummation was entropic,¹⁰⁸ in that products are received and used and the unusable excess produced had to be released rather than stored. Reformulated through the first law of thermodynamics, energy is neither created nor destroyed, just transformed from one form to another. As more energy is produced by what Luhmann referred to as the biological system’s operations, the excess energy builds up and is lost from the

¹⁰⁷ According to the laws of thermodynamics, biological systems are entropic in that, if the system produces more energy than their environment, or vice versa, heat is lost to bring the difference in energy between system and environment to a state of equilibrium. (Luhmann, 2006, 37-8).

¹⁰⁸ See page 57, footnote 57

biological system and produced in other systems,¹⁰⁹ through resonance and irritation, although structural couplings between social systems indicate a more established relationship through human beings and the material environment. Language in this regard is the unity of the transformation from the components of one system to the components of another – in the open ecology, it is not simply the transformation between consciousness and communication but includes the transformation between consciousness and communication and the material environment. Contrary to Gunther Teubner’s view that communication is a metaphor,¹¹⁰ Luhmann insisted that communication was not the transmission of information itself,¹¹¹ but a social reference to a transmission of “substances”¹¹² that took place in the open ecology. Instead, language could thus be seen as Luhmann’s metaphor for what Miyuko Naruso and Takashi Iba, in their reading of Luhmann’s theory, called ‘substantial transference’.¹¹³ Naruso and Iba specifically described substantial transference as the transfer of

¹⁰⁹ As per the first law of thermodynamics (otherwise known as the law of the conservation of energy), the energy is neither created nor destroyed but simply transformed from one form of energy (biochemical) to other forms of energy (consciousness or communication).

¹¹⁰ Gunther Teubner has argued that applying the idea of autopoiesis to social systems theory was metaphorical. This seems to make sense given that autopoiesis was originally a biological process as discovered by Maturana and Vareli. However, when arguing that the legal system could not rely entirely on forms, he noted that forms, like metaphors and jokes, only worked when they were unquestioned (Luhmann, In: Teubner, 1987, 23). Richard Lempert argued that a metaphorical autopoiesis would raise the criticism of Luhmann’s theory being potentially misleading given that social systems are not the same as biological system; Luhmann was ‘offering something more than a metaphor’ – how social systems actually work: Luhmann saw that there was a resemblance between social systems and biological systems but it was not their similarity or difference that social systems theory makes valid or invalid (Lempert In: Teubner (ed), 1987, 156). A metaphor in this regards was not necessarily a construct of the social system.

¹¹¹ Luhmann, 1995, 137

¹¹² I have used the word “substances” as a generic word for things that are transmitted in the open ecology because it forms the basis of the definition of waste adopted by the European Union that I have used in this thesis.

¹¹³ Naruso and Iba, 2008

substances that take place in the ecosystem, which is 'the wholeness of the certain part which including [sic] the animals and the environment'.¹¹⁴ In Chapter 1, I defined substances as that which exists outside in the system in the environment, and includes matter as well as the immaterial. In this regard, the ecosystem is equivalent to Philippopoulos-Mihalopoulos' wider ecology, defined in the previous section and thus communication in the system refers to substantial transference outside the system. Some of the excess substances produced by the autopoiesis of systems are reused and the rest is considered waste produced. Of course, not every substance that is transferred in the open ecology will be waste; that depends on how it is perceived in the psychic system or understood in the social system. Following Baudrillard's observation that waste has become the essential function of society, I argue that waste is a form of communication in that it is the meaning attached by the social system to certain substances that are transferred. So, for example, the legal definition of waste, as indicated in Chapter 1, is 'any substance or object which the holder discards or intends or is required to discard'; in the environment, substances are transferred and in the social system, this is sometimes understood as the discarding of waste. But, as I argue in the previous section, all communication is waste in that it is "discarded" by human beings. So from the legal system's perspective, waste is legal communication that cannot be coded as lawful or unlawful. Thus, in this thesis, I slightly depart from the terminology used by Philippopoulos-Mihalopoulos' application

¹¹⁴ Naruso and Iba, 2008, 3

of Luhmann's theory to the management of waste in which the waste discarded (that is, disposed) by the urban system is not the same as the waste in the social system,¹¹⁵ but those communications that cannot be coded and are thus rejected as unusable.¹¹⁶ As I discuss in Chapter 5, it is a point of contention in the secondary literature on the legal definition of waste that the fundamental act, discarding, is not explicitly defined in any versions of the Waste Framework Directive and the subsequent approach of the European Court of Justice and the domestic courts has been not to interpret it in the ordinary sense of "getting rid of" but to attach a special meaning, which includes reuse, recycling and other forms of recovery and disposal. It is my argument in Chapter 5 that the "special meaning" given to discarding by the courts is not the same as the ordinary meaning of "throw away" from the human perspective; instead, it refers to the various distinctions made by the legal system in its autopoiesis. In this sense, discarding is a paradigm developed by the court system as an organisation. As indicated in Chapter 6, what the human being throws away is differentiated by the social system between communication that can be coded and

¹¹⁵ Philippopoulos-Mihalopoulos, 2007, 196: 'Urban waste is what is not usable by the urban system; hence it is discarded. The city assigns its waste to its hinterlands, pushes it out of its geography and denies any intimacy with it – or, at least, this is what it tries to do. Urban waste is not assigned to urban memory, for memory is present and waste is by definition past. The city tries to forget its waste and carry on becoming only by retaining a small portion of it as an *aide mémoire*. This urban waste converts waste immediately from past to present, from memory to being: in other words, the memory of the system crosses the binary border and converts waste into usable, through processes such as reusing and recycling. What has not been selected by the system as usable, is discarded geographically and denied any memory – that is, any possible to be present and within our cognitive domain, for, according to Maturana, "[t]he physical space defined as the space in which living systems exist...is epistemologically singular because it defines the operational boundaries of our cognitive domain" (Maturana, 1999, 162). Spatialised dislocation is a certain way of denuding something of any memory it may carry...'

¹¹⁶ Philippopoulos-Mihalopoulos, 2007, 196

communication that cannot be coded. As legal communication in the legal system, it is usable if it can be coded lawful or unlawful, not recovered or disposed, in accordance with its programming, otherwise it is waste but, in the reference to other social systems through human beings in the material environment, the waste is made usable. For the sake of clarity, I shall refer to communications that are rejected by the social system as systemic waste.

Since social systems can differentiate between acts of discarding waste by human beings as either coded or uncoded communication, social systems are able to construct their own constructions of human beings. As discussed above, the fundamental paradigm in Luhmann's theory is language, which transforms consciousness in psychic systems into communication in social systems through the material environment. Thus, as argued above, the paradigm shift from individual, human understanding to shared, social understanding – because shared understanding cannot exist in a human-centred understanding - involves the interpenetration of psychic systems and social systems; this is the production of communication within social systems about the environment. Thus, as I argued above, a social system understands the a selected fragment of the understanding of the human being in the communications produced and remembered,¹¹⁷ through the combination of its binary

¹¹⁷Philippopoulos-Mihalopoulos described *memory* as an example of the relationship between becoming and being – from human beings to human becoming - connecting what happened in the past to how it is

coding and its programs. That is, a social system can code part of its understanding of human understanding, but not all of it. David Seidl observed that a human being in Luhmann's theory ought to be understood as a conglomerate of a psychic system and organic system (mind and body),¹¹⁸ but, following the previous section, I would posit that a human being could be understood as the combination of a mind and body in a material environment that includes other human beings and how they interact; the psychic system would develop an understanding of what's outside. In this respect, it is perhaps too simplistic that not only human beings but also the posthuman as something "beyond the human" are outside society.¹¹⁹ According to N Katherine Hayles, the posthuman represented 'a shift from presence/absence to pattern/randomness', indicating that the human is not a static, unchanging concept, where everything else is non-human, but a dynamic concept that any moment is 'the realisation of a certain set of possibilities' among 'the much, much larger set of everything else, from phenomena that cannot be rendered by a given system's organisation to those that the systems cannot perceive at all'.¹²⁰ That is, from a Luhmannian perspective, there was no shift from a human world to a posthuman world,¹²¹ because "the posthuman" was the paradigm shift from a society of distinct

remembered in the present; it provides a 'bridge between cognitive openness ("learn from experience") and operational closure ("learning from *my* experience")' (Philippopoulos-Mihalopoulos, 2007, 192-3).

¹¹⁸Seidl, 2010, 9

¹¹⁹Hayles, 1999, 283

¹²⁰Hayles, 1999, 286

¹²¹ Moeller, 2012, 21: 'Luhmann did not conceive of social systems theory, to put it in McLuhan's terms, as a theory that deals with the "extensions of man". He did not aim at a new understanding of what it means to be human in the wake of a technological revolution. Luhmann could be considered a "strong

human beings to a society of communication in which human understanding was identifiable from the pattern of communications. Thus, the posthuman exists because of language as the medium for all interactions: the interpenetration of psychic systems and social systems, the penetration of the material environment into psychic and social systems and the structural coupling of social systems. In a sense, the posthuman is the diversity of actants, indicative of Bennett's perspective in Chapter 2 that matter is just as vibrant as human beings because of its thing power that affects and is affected by the other. Following Bennett and Luhmann, I argue that thing power leads to the production of communication in the space between actants. Thus, anything triggers communications in the social system, which can either code it as an action between human beings or regards it as wasteful or irrelevant action. In this respect, the posthuman was what Luhmann referred to as the 'blind spot of observation'.¹²² Philippopoulos-Mihalopoulos explained: 'This is not merely a thing that eludes observation. Rather, it is *the thing itself, the body as a whole, that eludes observation* [sic].'¹²³In other words, the posthuman is the open ecology, comprising psychic systems, social systems, and the material environment. In this regard, through autopoiesis, each social system develops its own constructions of the human, in terms

posthumanist" (unlike McLuhan and his followers) insofar as he does not support that society has somehow stretched itself beyond its human limitations. Instead, he thinks that the value of conceiving of society in human and subject-centred terms has become limited. Luhmann does not discuss modifications of *being human* in a technological age; rather, he discusses the social modifications that went along with technological change. He characterised himself as a radical antihumanist because he thinks that the humanist self-description of society has been fundamentally flawed from the start. The world has never been human, and thus there has never been a shift from a human to posthuman world.'

¹²²Luhmann, 2002, 86, cited in: Philippopoulos-Mihalopoulos, 2015, 60

¹²³ Philippopoulos-Mihalopoulos, 2015, 60 [italics in original text cited]

of communication, as distinct from the non-human environment, whether that is the legal person in the legal system or *Homo sapiens* in the scientific system or *homo economicus* in the economic system and so on. (These are not the only constructions of the human in these systems.) This all adds up to what is becoming society's understanding of the human, but what is happening is that it is increasingly being understood that what was previously thought to be important in defining the human is not sufficient and something more is needed.

The posthuman as the paradigm shift from a human-centred society to a communication-centred society is arguably described in Luhmann's theory by the remembrance of systemic waste. As indicated earlier in this chapter, systemic waste is rejected communication that, in Philippopoulos-Mihalopoulos' words, the system can forget about. Unlike entropy in the material environment, however, systemic waste is not actually separated from the system but placed in a cognitively inaccessible part of the system. So, forgetting, like remembering, could be seen as a function of the system's memory in that it remains within the boundaries of the system.¹²⁴ In a psychoanalytic sense, forgetting is unconscious remembering. Forgetting about waste, from the social system's perspective, is not in itself an undesirable act but, following Baudrillard, an essential function of the social system; it has to be able to forget about

¹²⁴ Certainly, scientific research indicates, in the context of individual memory, that forgetting – the inhibition of the retrieval of irrelevant information that distracts from a problem in hand – enables the retrieval of relevant information in order to solve the problems. (Storm, 2011, 294)

what it cannot code otherwise the system becomes paralysed with information overload. After all, why should the system “worry” about what it does not yet know? The point is not that waste was forgotten but that it is available for remembering in the future in response to environmental irritation. The starting point of the paradigm shift was always the traditional idea of the human, depending on how far back one went, and that came with a host of hierarchical baggage. What was understood as human by society depended on what was understood by the human. Anything that did not correspond with the existing paradigm was forgotten as waste – whether it is, as Bennett described, non-living matter that is not usable or, as Baumann argued, “wasted humans”. The forgetting of waste has always been an act of hierarchy, the maintenance of which was what Luhmann referred to as stratification. Thus, in the modern global society, the primary form of differentiation was functional differentiation through the coding of communication using binary coding and programs; as argued above, stratification is the ‘useless by-product’ of functional differentiation.¹²⁵ Luhmann’s theory could be said to build on Jacques Derrida’s deconstruction. According to Luhmann, a deconstruction of the distinction of usable/waste or remembered/forgotten would ‘destroy the presupposition of the “hierarchical opposition”’, thereby making visible ‘what Louis Dumont would call *l’englobement du contraire* – that is, the inclusion of hierarchical structure of preferred

¹²⁵Luhmann, 1997, 70

lifestyles'.¹²⁶ The purpose of deconstruction was to highlight how differences were just distinctions that changed their use value when used at different times and in different contexts; Derrida referred to this difference of distinctions as *différance*. For Luhmann, society could only self-create itself by first deconstructing the world outside into what society could use for its autopoiesis and what it could not (usable/waste). Thus, there was hierarchy amongst the different components of the world – communication - and stratification became the primary form of differentiation. But, Luhmann's theory went further; having deconstructed the world, at some point – in Luhmann's view, this was the Middle Ages - society could rearrange communication according to its function and thereby begin reconstruct the world in terms of functional differentiation. In this regard, hierarchy became the thing to throw away. Thus, the "goal" of the autopoiesis of society is to communicate about the world in such a way that the entire world can be understood as usable communication, with a function, and nothing is understood as waste. Thus, Baudrillard's observation that the production of waste is "the essential function of society"¹²⁷ is not the end of the story because it only pointed to deconstruction. If communication could be thought of as waste discarded by human beings but in social systems some communication is (re)usable and the rest unusable but can be recycled or recovered by external reference, then the waste hierarchy can be considered a paradigm for the autopoiesis of social systems. The hierarchy exists in the distinctions usable/waste and system/environment. As social systems learn how to

¹²⁶Luhmann, 1993, 763

¹²⁷ See notes 49-50

code communication and recategorise waste, there is a reduction in the amount of waste in relation to understanding about the environment. As indicated in chapter 1, waste indicates a difference between the system and the environment. The aim of the “waste hierarchy” as such is to reduce the difference between the legal system and its environment. This is arguably the point of the waste hierarchy – it does not change the actual ontology of substances that are referred to as waste, it changes the epistemology of waste from something material to communication, from something unusable by society to something usable. To put it another way, it changes the way the environment is understood. But since the environment by which the social system is irritated comprises psychic systems in the material environment, which partially enables the structural couplings with other social system, then, as argued above, the social system steers its own waste management process in response to irritation by its environment and produces resonance in the environment. Thus, it can be said that the legal system steers the wider waste management process by steering itself through the relationship with its environment. Therefore, since the waste hierarchy is the mechanism by which the circular economy is achieved, it could be argued that the circular or zero waste economy is not a reference to the economic system specifically, as the production and reduction of waste is a response to the environment. Instead, the circular economy, etymologically from Greek *oikos* (“home”) and *nomia* (“management”) is another way of thinking about the open ecology. The zero waste economy could be considered the transformation of systemic waste to something

usable. On the one hand, the idea of a circle or zero waste suggests a closed ecology. On the other hand, as the circular economy does not mean the elimination of waste as a throwaway material, the closure of ecology is somewhat artificial (as indicated by Zizek). Mathematically speaking, a circle is really a shape with an infinite number of sides; the circular economy is achieved through the plethora of interactions between human beings.

Organisations and Nudge

So far, I have argued in this chapter that the categorisation of acts as useful to human beings or wasteful and the recategorisation of wasteful acts as useful is handled by the operation of different social systems, such as the legal system, economic system and the economic system, in response to irritation by the environment. Social systems are structurally coupled to each other through the operation of psychic systems in a material environment, which transforms individual consciousness into shared communication and vice versa. In this way, social systems steer the waste management process by steering itself through its relationship with the environment. The waste hierarchy is thus a paradigm for the autopoiesis of social systems in general, which enable the accomplishment of the circular economy as the open ecology. However, since the operation of social systems depends on the operation of psychic systems in the material environment, even though social systems cannot observe what

is outside beyond a sense of irritation, it can be argued that only taking social systems into account provides a limited perspective. The problematic, however, with trying to take the perspective of human beings into account is the *raison d'être* of Luhmann's theory: the consciousness of human beings cannot be known unless it is shared or communicated, through language or the material environment. At the same time, since psychic systems produce consciousness not communication and is separated from social systems by the material environment, social systems may not be always perceived. When it comes to the law, Robert Ellickson, a property lawyer, has claimed to be 'relatively sceptical about how much people look to the law when shaping their ordinary affairs'.¹²⁸ At the same time, as Philippopoulos-Mihalopoulos has pointed out that the law can be visible or perceptible by humans, as in a no-smoking sign in a public space, or it can be invisible, as in the arrangement of the open space as a result of planning law or health and safety.¹²⁹ I would argue that the same could be said of other social systems – that one may participate in the economic system or the political system, influenced more by one's own thoughts, emotions, habits or environment, without giving much thought to the fact that one is participating in those social systems. Earlier in this chapter, I argued that social systems construct their understanding of the environment in accordance with their programming, enabling the development of organisational habits, including paradigms. In this section, I argue that

¹²⁸ Ellickson, 2008, xi

¹²⁹ Philippopoulos-Mihalopoulos, 2015, 4

the organisational habits are the result of the operation of organisations in the environment – that is, the way the environment is organised.

The difference between social systems and organisations is in the way that they understand the environment. As argued above, social systems understand the environment in the form of communication and this can only be categorised as useful or not useful through a fixed binary coding; so, for example, the legal system can only understand what goes on in the environment as lawful, unlawful or of no concern. Organisations, on the other hand, are systems that understand the environment in terms of decisions; that is, they select from a number of alternatives.¹³⁰ David Seidl explained that, in Luhmann's theory, 'decisions are communication';¹³¹ while communications only indicate that a particular interaction between human beings has taken place, a decision indicates both that a particular interaction has taken place and that there were other alternatives that could have taken place instead. In this respect, an organisation is able to have a more flexible approach to the environment than social systems; while social systems reduce the complexity of the environment to one type of communication (legal, economic, political, etc.), organisations are better suited to describing the diversity or complexity of possible interactions in the environment

¹³⁰As Luhmann's work on organisational theory has not been translated from German to English, I shall rely on a selection of secondary literature.

¹³¹ Seidl, 2010, 12

(reuse, recycling, disposal, for example). However, Seidl has pointed out that there is an inherent paradox to decisions or 'decision communications':¹³²

'...the more they communicate that there are *real* alternatives to the one that has been selected, the less the selected alternative will appear as justified and thus the less the decision will appear as "decided"; and the more the selected alternative is being justified as the right selection the less the other options will appear as alternatives and thus the less the decision will appear as "decision".'¹³³

According to Seidl, the more that a certain decision to act in a particular way is taken, the less the alternatives do not seem like alternatives and thus the decision seems less like a decision and more like the only course of action. Whether a certain decision is taken depends on the 'decision premise', the existing situation that is the 'the result of earlier decisions'.¹³⁴ The decision premise is the organisational equivalent of programming in social systems. But the more certain decisions are taken and thus seem less like decisions, the more likely there are what Luhmann has referred to as the 'undecidable decision premise', the decision premise or situation for which it is not possible to make a decision— because the decision that is always produced has become

¹³² Seidl, 2010, 12

¹³³ *ibid*, 12

¹³⁴ *ibid*, 13

a *fait accompli* and the alternatives do not seem like alternatives; Seidl likened the undecidable decision premise to 'organisational culture' and characterised it as the 'unintended by-product of decision-making'.¹³⁵ Thus, to use the language of Luhmann in relation to social systems, as discussed above, organisational culture or undecidable decision premises could be said to be the rejected situations for decision-making or the waste of the organisation that is placed in a cognitively inaccessible part of the system – the environment of the organisation. In other words, a decision premise is undecidable if it is a concern for other organisations or social systems or psychic system in its environment. The organisational culture is the organisation's construction of what's outside. But if there are too many undecidable decision premises within the organisation, it cannot produce decisions, or at least it produces decisions that appear to be ordinary communications instead of decisions. Thus, an organisation can potentially lose its capacity to be distinguished from the social systems in its environment. Anna Maria Theis-Berglmair has argued that, while social systems only produce its own form of communication, 'organisations cannot afford to concentrate on this code when making decisions'; whilst they may assign themselves 'through the process of self-description' to a social system, they have to take into account the communication of other social systems as well.¹³⁶ A court or the court system, for example, is not part of the legal system in that it does not only categorise communication as lawful or unlawful; it is an organisation that does have to be

¹³⁵ Seidl, 2010, 14

¹³⁶Theis-Berglmair, 2005, 7-8

concerned with what is lawful or unlawful, but may also take other factors into account when producing a judgment – economics, politics, the specific facts or context and so on. Similarly, a household system – this could be one household, a neighbourhood or beyond - will take various factors as categorised by other organisations as well as social systems into account. Therefore, the organisation can only continue to exist as an organisation by responding to irritation by the environment and changing its organisational culture by changing the decidability of an undecidable decision premise. In this respect, it could be argued that a social system steers the waste management process by steering its own understanding of the waste management process in response to irritation by the environment, but steering is mediated through the decisions produced within organisational contexts.

Since steering by social systems is mediated by the decisions produced by organisations, the relationship between organisational decisions and the choices made by human beings can be described through an encounter between Luhmann's theory and Cass Sunstein and Richard Thaler's libertarian paternalism. For Sunstein and Thaler,¹³⁷ libertarian paternalism combines two apparently contradictory concepts – libertarianism and paternalism; a policy is libertarian if it leaves people with the

¹³⁷Sunstein, a lawyer, was working in constitutional law, administrative law, environmental law and law and behavioural economics in the University of Chicago Law School for 27 years, until 2009 when he was appointed by Barack Obama as the Head of the Office of Information and Regulatory Affairs (OIRA) in the White House. Thaler, an economist, is the Professor of Behavioural Science and Economics and best known as a theorist in behavioural finance in the University of Chicago Booth School of Business.

“freedom to choose” and a policy is paternalist if it ‘tries to influence choices in a way that will make choosers better off, *as judged by themselves*’.¹³⁸ I would posit that the importance of an encounter between libertarian paternalism and Luhmann’s theory is indicated by its influence on both Barack Obama’s and David Cameron’s respective administrations in the U.S. and U.K,¹³⁹ including, as I indicate in Chapter 6, within household waste policy. Libertarian paternalism is based on the premise that human beings are not the same as *econs*, short for *homo economicus* or economic man, which would always make rational choices that lead to them being better off (presumably the rational choice is the economic choice).¹⁴⁰ The decision maker is only able merely to *nudge* human beings towards certain behaviour, as indicated in their best-selling book *Nudge*, rather than actually changing behaviour.¹⁴¹ This echoes the distinction between the operation of psychic systems and the economic system’s construction of psychic systems in Luhmann’s theory, where systems are irritated by the environment and produce an internal response. However, Luhmann brings a wider social perspective to libertarian paternalism (Nudge theory) in that human beings are also distinct from other social systems, which all have their own systemic understanding of

¹³⁸Sunstein and Thaler, 2009, 5

¹³⁹ *ibid*, 14; The Conservative Party, 2009; Osborne and Thaler, 2010; McSmith, 2010; Subramanian, 2013

¹⁴⁰Sunstein and Thaler, 2009, 7; Thaler, 2000, 136: According to Thaler, economists in the first half of the 20th Century, such as John Maynard Keynes and Irving Fisher, explained economic behaviour with reference to psychology, with economic man a relatively new development as a result of attempts to formalise the micro foundations of Keynes work; he predicted that economics would go back to ‘an approach in which the degree of rationality bestowed to the agents depends on the context being studied’.

¹⁴¹ Sunstein and Thaler, 2009

human beings. Where Luhmann's theory slightly departs from libertarian paternalism is that, for Luhmann, as argued above, decisions are produced by organisations; Sunstein and Thaler do not explicitly state the organisation as the decision maker but it can be extrapolated from the examples they use in *Nudge* by way of illustration. As argued above, the environment of organisations comprises undecidable decision premises, because they are of concern to social systems or psychic systems, but a premise becomes undecidable because the same decision has been repeated so that there do not appear to be alternative options. In this regard, the organisation is the *choice architect*, with 'responsibility for organising the context in which people make decisions'.¹⁴² On the one hand, they take relevant legal, economic, political, etc. issues into account and make decisions that resonate with human beings. On the other hand, the organisation makes decisions in response to the choices produced within the consciousness of human beings, enabling social systems to code communication. Hence, human beings can be considered "free to choose" because choices are made in a space (consciousness) beyond the boundaries of social systems and organisations, but are nevertheless important for organisational decision making. In this regard, the environment of organisations is what Sunstein and Thaler have referred to as the *choice architecture*:

¹⁴² Sunstein and Thaler, 2009, 4

‘There are many parallels between choice architecture and more traditional forms of architecture. A crucial parallel is that there is no such thing as a “neutral” design. Consider the job of designing a new academic building. The architect is given some requirements. There must be room for 120 offices, 18 classrooms, 12 student meeting rooms and so forth. The building must sit on a specified site. Hundreds of other constraints will be imposed – some legal, some aesthetic, some practical. In the end, the architect must come up with an actual building with doors, stairs, windows and hallways. As good architects know, seemingly arbitrary decisions, such as where to locate the bathroom, will have subtle influences on how people who use the building interact. Every trip to the bathroom creates an opportunity to run into colleagues (for better or for worse). A good building is not merely attractive; it also “works”.¹⁴³

According to Sunstein and Thaler, a choice architecture is like a physical architecture in that it affects the choices that people make within it. Indeed, following its inquiry into behaviour change, the House of Lords Science and Technology Committee described choice architecture as ‘the environment in which an individual makes choices’.¹⁴⁴ The choice architecture can in the first instance be folded onto the material environment in Luhmann’s theory. However, the problematic with Nudge theory is that there is no

¹⁴³ Sunstein and Thaler, 2009, 3

¹⁴⁴ House of Lords, 2011, para 2.7

clear explanation as to what constitutes a nudge. At first, in *Nudge*, Sunstein and Thaler rule out legal and economic instruments from being nudges:

‘...any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any option or significantly changing their economic incentives. To count as a nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not.’¹⁴⁵

According to Sunstein and Thaler, as has been argued above, nudges are not meant to eliminate choice and thus do not indicate mandatory behaviour. According to its analysis of the evidence presented to its inquiry into behaviour change, the House of Lords Select Committee on Science and Technology described nudges as incorporating the provision of information (for example, of one’s performance), changes in the physical environment, changes in the default policy (for example, as with auto-enrolment into workplace pensions) and use of social norms and salience (providing information of what others are doing); nudges can be thus differentiated from persuasion, fiscal and non-fiscal incentives and disincentives and restrictions or elimination of choice.¹⁴⁶ Yet, later on in *Nudge*, Sunstein and Thaler do consider incentives as nudges and politicians have talked about the use of incentives as

¹⁴⁵ Sunstein and Thaler, 2009, 6

¹⁴⁶ House of Lords, 2011, 10 (Table 1)

examples of nudges.¹⁴⁷ It is not clear why legal instruments are not considered nudges and, indeed, government ministers have been criticised for misrepresenting nudging as being in opposition to regulation and legislation.¹⁴⁸ It could be argued that this interpretation of nudges as an alternative to regulation may be based on an ideological motivation of withdrawal or – as suggested in Chapter 1 – “stepping back” of the state, in this case as a lawmaker. This interpretation is probably not discouraged by the involvement of Thaler, who was well-established within the Chicago School of Economics, regarded as a school of neoclassical or neoliberal economics. However, it is difficult to argue that, from Sunstein’s establishment in the Chicago School of Law, that nudges were intended as alternatives to law. The whole rationale behind nudges was as a mechanism for more effective decision-making to change behaviour and sometimes this means governments have to pass laws. Whilst the aim of law is to change behaviour by either making it mandatory or prohibited, I would argue that laws do not eliminate choice as such because there is always “freedom of choice” as to whether to obey or not. It could be argued that an encounter between Luhmann’s theory and nudge theory makes clear that the human being’s freedom of choice is not only influenced by the material environment but also by the mediation of the legal or other social system’s steering through organisations. On the one hand, human beings are nudged by the choice architecture, which is constructed by organisations that produce decisions by taking into account social systems. On the other hand,

¹⁴⁷Sunstein and Thaler, 2009, 106-109; Osborne, 2008; Osborne and Thaler, 2010; Pickles, 2010

¹⁴⁸Bonell, McKee and Fletcher, 2011, 2158

organisational decisions depend on human choices. Therefore, the choice architecture encompasses social systems, organisations and psychic systems. Thus, thinking about the research question in Chapter 1, it could be said that the extent to which the law is able to change – or at least have an effect – on human behaviour depends on the way the common environment is organised.

Since the effect of social systems on the behaviour of human beings is limited by the organisational limits of the environment, it could be argued that the undecidable premises in the environment of organisations are norms. According to Luhmann, a norm is a form of time binding in that it projects an expectation on the future.¹⁴⁹ They are not produced by systems but exist in the environment as a result of the autopoiesis of systems. Events that are in line with the expectation generated by a norm are deemed lawful, otherwise they are unlawful. Thus, as Luhmann pointed out, norms exist before the law codes. A norm is not the outcome of the self-explication of various reasons but the generation of meaning as a result of repeated iterations.¹⁵⁰ Each system thus has their own understanding of norms – undecidable decision premises, including paradigms, produced by organisations mediating the steering of social systems. In a system of norms, for example society, which comprises social systems and organisations, communication can be coded as either normal or abnormal, normal communications being usable and abnormal communications being waste. If the role

¹⁴⁹ Luhmann, 2005, 54

¹⁵⁰ *ibid*, 55

of autopoiesis of social systems and organisations is the elimination of waste, then the “goal” of the autopoiesis of society is for all events to be understood as normal by all human beings. In other words, the effect of social systems is to change human behaviour within the organisational limits of the environment – that is, to steer - so that all actions are regarded as normal. Of course, the paradox of a society in which all actions are understood as normal is that no understanding needs to change and thus autopoiesis or self-generation of systems no longer takes place. It does not take more than a cursory examination of the world to realise that that point of development has not been reached, so I shall regard it as way beyond the scope of this thesis.

In this section, I have sought to outline the role of organisations in the interpenetration of psychic and social systems. Organisations differ from social systems in that organisations produce decisions and social systems produce communications. Whilst communications are coded strictly within the limits of binary of coding, organisations are concerned with deciding between alternative actions and thus have a more diverse understanding of the environment. So, for example, the legal system differentiates between lawful and unlawful handling of waste, but organisations differentiate between reuse, recycling, recovery or disposal of waste, where a decision is made from one. The paradox, however, is that the more an option appears decided, the less the other options seem like alternatives and the more there appear to be alternatives, the less an act appears to be decided. In other words, the

more a certain decision is made in a particular situation (a decision premise), the premise appears undecidable and is thus regarded of no concern to the organisation; it becomes like waste and placed in the organisational environment or culture. The organisational culture is the organisation's understanding of social norms, which are understood by the social system as its programming. Just as social systems can only deal with its waste by being irritated by the environment, the organisation can only make the undecidable decidable by being irritated by its environment. Social systems are only able to understand what cannot be coded through the decisions produced within the organisational limits of the environment and the organisations can only made decisions about what could not be decided previously as a result of the resonance produced in response to social systems. Through an encounter between Luhmann's theory and Sunstein and Thaler's libertarian paternalism, I have argued that organisations make decisions in response to social systems and maintain the choice architecture, which nudges human beings to behave in certain ways. But where Luhmann theory adds to libertarian paternalism is in making clear that the choices of human beings or consciousness of psychic systems are not just affected by decisions made within organisational limits. Psychic systems and social systems interpenetrate each other in that psychic systems penetrate and are penetrated by social systems through the organisational environment. So, since, for Luhmann, human beings are outside society but are presupposed by it, I would argue that human beings are a part of the choice architecture that nudges human beings; they are not part of the limits

within which decisions are made but nevertheless have an effect. Thus, in the following section, I argue that Luhmann's theory offers a reflexive approach to law. In Chapter 6, I look at way in which decisions are made within a household organisational context with regard to dealing with waste: can I reuse it; do I recycle or throw it away; if I am recycling it, do I need to wash it; and so on. It may be normal to recycle it or normal to throw it away. Another organisation, a local authority, may want to change the behaviour of human beings who affect household decisions because too much is being thrown away, in response to its legal obligations or the economic cost. Some local authorities decided to use economic instruments in order to nudge human beings to change the decisions they take. A household may decide to make different decisions because it has been irritated by the economic system because it has more or less money to spend or it may be irritated by the legal system in that the local authority decides to emphasis the compulsory nature of recycling.

Organisations and a Reflexive Approach to Law

Since the steering of other social systems by the legal system is mediated through organisations, it could be argued that Luhmann's theory describes a reflexive approach to law. Max Weber identified two orientations of law: a formal orientation that described the liberal state to provide a minimal framework within which actors could develop the social (particularly economic) relationships they chose to enter into; and a

substantive or materialist orientation that described the capacity of law to be used by politicians to deal with market failures. Reflexive law was intended as a form of escape from the “vicious circle” that emerged as a consequence of the conflicting demands for even more regulation and for deregulation: according to Gunther Teubner, as summarised by John Paterson, ‘reflexive law “shares with substantive law the notion that focused intervention in social processes is within the domain of the law, but it retreats from taking full responsibility for substantive outcomes”’.¹⁵¹ That is, the law can directly intervene in other social systems but it is not completely able to respond to the operation of other social systems. In this respect, Teubner’s approach appeared to depart from Luhmann’s theory, which did not see the legal system as, in the words of Michael King and Chris Thornhill, ‘an effective vehicle for social engineering’.¹⁵² King and Thornhill argued that, as an autopoietic system, the law was limited as a tool for social engineering; lawyers must ‘reflect upon the complex interdependencies that exist between law and all other systems, instead of seeing their own professional activities as central to all that happens in society and expecting legal decisions to have a direct structural impact upon behaviour in different spheres’.¹⁵³ Given that the legal system can only code communication within the limits of its own binary coding and anything else is simply uncodeable, it is difficult to see how steering and irritation is equivalent to “focused interventions” mentioned by Teubner; they are more like firing

¹⁵¹ Paterson, In: King and Thornhill, 2006, 23

¹⁵² *ibid*, 24

¹⁵³ *ibid*, 24-5

at a target while blindfolded or pinning the tail on the donkey. That does not mean that the legal system does not have an effect on other social systems; as I have argued in this chapter, it steers the environment by steering itself in response to environmental irritation, with steering mediated through organisations. Following from the previous section, I would argue that the impact of social systems can be focused through the prism of the organisation. Indeed, this can be seen from the encounter between Luhmann's theory and Sunstein and Thaler's nudge theory discussed above in that human beings are only nudged by the environment or choice architecture, which is designed by the decisions of the organisations taking into account the understanding of social systems and decisions of other organisation. It is by mediating social systemic steering through organisations that Luhmann's theory offers a reflexive approach to law. According to Teubner, the social system in Luhmann's theory has a reflexive orientation due to the system's mediation between function and performances:

'A reflexive orientation does not ask whether there are social problems to which law must be responsive. Instead it seeks to identify opportunity structures that allow legal regulation to cope with social problems without, at the same time, irreversibly destroying valued patterns of social life.'¹⁵⁴

¹⁵⁴ Teubner, 1983, 274

According to Teubner, the aim of reflexion is to determine the mechanism by which the self-steering of the legal system (or other social systems) enables the steering of the environment, given that the blind spot in Luhmann's theory was the relationship between the system and the environment. The remainder of this section outlines how subsequent developments by Teubner of reflexive law, as well as a more recent reformulation by Paterson and Teubner suggests a number of mechanisms by which reflexion takes place: 'mutual or reciprocal observation', 'coupling through interference' or 'bifurcation and attractors', 'communication via organisation' or 'binding institutions', 'tangential response' and synchronising difference reduction.¹⁵⁵ However, I argue that Paterson and Teubner's work indicates that reflexion takes place through organisations. Since Luhmann described steering as the 'reduction of a difference' between system and environment,¹⁵⁶ Paterson has argued that the legal system is able to make "focused interventions" in other social systems through the synchronisation of the reduction of difference between different systems and their environment.¹⁵⁷ That is, as a system steers itself, it reduces the difference between what the system's construction of the environment and the environment and thus the difference reduction is synchronised as each system becomes like the environment. This mechanism for reflexion is limited, however, in that it does not really indicate a direct connection between the systems but the habitual coincidence of structural

¹⁵⁵ Paterson, In: King and Thornhill, 2006, 24

¹⁵⁶ Luhmann, 1997, 42

¹⁵⁷ Paterson, In: King and Thornhill, 2006, 29

coupling or even, in relation to psychic systems, Hegelian mutual recognition. This feels somewhat unsatisfactory as an explanation of “focused intervention”. However, it could be argued that difference reduction could be seen as a form of consensus building by the organisation between social systems that have distinct understandings of the environment, as argued in Chapter 5. I do not object to the idea of synchronised difference reduction but it is my position that the other mechanisms proposed by Teubner and by Paterson and Teubner offer greater clarity as to how this synchronisation might take place. A “tangential response” is a punctual intervention on ‘a sort of trial-and-error basis “until the regulated area has moved somewhat” in the desired direction’; it sounds like a systemic response to irritation by the environment, which comprises other social systems, but Paterson has suggested that it ‘might be an adequate way of characterising the “interventions” of central banks in currency markets and national economies’.¹⁵⁸ A “mutual or reciprocal observation” involves the legal system adopting ‘a stance of second-order observation in which it “reconstructs the self-reference of the observed system”’.¹⁵⁹ The problematic with this approach is that, in Luhmann’s theory, the legal system is only aware of something outside through environmental irritation but it cannot code communication that is produced by another social system. However, as argued above, it is the organisations who can observe different social systems from an external position and makes decisions in response and the example given by Paterson is of health and safety regulators who

¹⁵⁸ Paterson, In: King and Thornhill, 2006, 25

¹⁵⁹ *ibid*, 25

‘observe that the operation of a given technology is not driven by whether or not a given practice is “legal”, but rather by how it affects payments or non-payments’.¹⁶⁰ Teubner could be said to depart from Luhmann by seeing social systems as coupled through “interference”, which he described as ‘a bridging mechanism whereby social systems get beyond self-observation and link up with each other through one and the same communicative event’.¹⁶¹ However, if, as argued above, systems are seen as producing some form of energy and maintaining itself through entropy, then the irritation of systems by the environment could be seen as a mirror of the operation of a system resulting in resonance in other systems. That is, a system produces energy, until it resonates with another system but since neither system can observe the environment, then the system in which resonance is produced is for all intents and purposes affected by something it cannot see. Paterson has suggested one way the legal system could probe for sensitive intervention points with another social system is by having an “options policy”. But, from Luhmann’s theory, a similar mechanism already exists in organisations which make decisions by selecting from a ranging of alternatives. Paterson has also indicated that Teubner has described communication as being “channelled parallel to each other” in a formal organisation that acts as a “binding institution” with the aim of producing “systematic effects” through the need for the different subsystems to be “compatible with each other”; an example of this is “intra-organisational juridification” where “organisational processes

¹⁶⁰ Paterson, In: King and Thornhill, 2006, 26

¹⁶¹ *ibid*, 26

are legally reconstructed in such a way that they themselves become sources of law".¹⁶² In other words, as argued above, the legal system constructs its own understanding of the organisation's undecidable decision premises or organisational culture as legal norms. For all these reasons, I have not adopted reflexive law as the basis for the theoretical framework because the sort of reflexivity described by Teubner and Paterson is already incorporated into Luhmann's theory.

Valuing the Ecosystem

Referring to Naruso and Iba's definition of the ecosystem earlier in this chapter, it can be argued that the ecosystem can be considered as the payer of last resort. In the Millennium Ecosystem Assessment (MEA), a consensus-based evaluation of the scientific literature and data, an ecosystem was defined as 'a dynamic complex of plant, animal and microorganism communities and the non-living environment interacting as a functional unit', with ecosystem services being 'the benefits people obtain from ecosystems'.¹⁶³ This definition of ecosystem could be understood as based on scientific communication. In the U.K.'s own National Ecosystem Assessment (UKNEA), ecosystem services were seen as specifically comprising the air, water, land and all living things, which provide goods for the maintenance of human wellbeing, which is

¹⁶² Paterson, In: King and Thornhill, 2006, 28

¹⁶³ Millennium Ecosystem Assessment, 2005, vi

social value.¹⁶⁴ According to Markus Peterson, reframing ecosystem functions as “ecosystem services” has been ‘the most comprehensive attempt to reframe ecological concerns to enhance environmental protection’, with a view to ‘demonstrating the value of ecosystem functions for humanity and justifying improved protection of biodiversity.’¹⁶⁵ According to Marx, value is indicated by two properties: “use value”, the usability or capacity to use, and “exchange value”, which ‘presents itself as a quantifiable relation, as the proportion in which values in use of one sort are exchanged for those of another sort’.¹⁶⁶ Use value is inseparable from the thing to which it applies and thus can only be assessed by the possessor or user. Exchange value enables something to be exchanged or shared and is thus independent of the use value. However, for Marx, use value and exchange value were attached to a commodity, ‘an object outside of us, a thing that by its properties satisfies human wants of some sort or another’.¹⁶⁷ According to Peterson, ‘when ecosystem services to humanity become commodities, the biotic components of ecosystems become the workforce whose labour and energy is purchased’ - comprising ‘ecosystem workers as shorthand for the organisms that produce services in an ecosystem service

¹⁶⁴UK National Ecosystem Assessment, 2011, 15: The report actually distinguished between social value, health value and economic value, but in social systems theory, economic value and health value are seen as forms of social value.

¹⁶⁵ Peterson and others, 2010, 114

¹⁶⁶Marx, 1999, Chapter 1

¹⁶⁷ibid

marketplace'.¹⁶⁸ Thus, Peterson explained use value as the sum of raw goods, instruments and labour and exchange value is expressed in the monetary price:

'Marx argues that to sell the commodity for a profit, it must be distanced from the raw material, energy, tool, instrumentation, and labour costs so that alternative values to the exchange price cannot be readily calculated, Thence the market price for the product conceals the contribution of the labourer and other resources used to manufacture and ship the product.'¹⁶⁹

According to Marx, use value, which is the combined total of the cost of source materials, is separated from the exchange value, which is the price of selling or buying the finished product. The price in the economic system hides the complexity of the ecosystemic operations between ecosystem workers. Thus, the problematic with the concept of ecosystem services is that economic value is not necessarily the same as an understanding that something should be conserved. Peterson argued, with reference to Odum and Odum,¹⁷⁰ that, in order to 'reverse the erasure of the ecosystem worker', what was needed was an externalisation of what had already been brought inside the economic system so that the operations of the economic system could be measured

¹⁶⁸ Peterson, 2010, 116

¹⁶⁹ Peterson, 2010, 116

¹⁷⁰Odum and Odum, 2000, 21

on the same basis as the ecosystem.¹⁷¹ He proposed Luhmann's theory as an approach in which ecosystem functions and related biodiversity can be separated from but remains related to ecosystem service commodities:

'If we hope "to put the economy on the same basis as the work of the environment"...we must retain ecosystem *services* within the economic function, and simultaneously expand the importance of ecosystem functions and related biodiversity into terms recognisable by important societal systems (e.g. law, science, politics) so that the requisite social changes can occur.'¹⁷²

According to Peterson, it is not enough for only the economic system to develop an understanding of ecosystem functions in the form of ecosystem services but that other social systems must also create their own understanding of what goes on in the ecosystem. Luhmann did not use the term "ecosystem" in his text but it is arguable that he had ecosystem services in mind when he described the ecological environment, with reference to Dieter Bender's definition of environment: 'the totality of all naturally provided, non-produced goods and services that provide streams of profit to the individual participants in the process of production of consumption'.¹⁷³In a sense, according to Luhmann, the ecological environment is described as a quasi-economic

¹⁷¹ Peterson, 2010, 117

¹⁷² Peterson, 2010, 117

¹⁷³Luhmann, 1989, 58

system, a sort of reverse of the way he originally adopted Maturana and Vareli's biological autopoiesis as a model for describing social systems. The ecological environment is thus the material environment. However, as I argued earlier in this chapter, the ecosystem is not just the material environment but the substantial environment of the social system in that it produces substantial transference; communication is one form of substantial transference. In this respect, ecosystem services is substantial transference, but it is neither only something material nor is it only something economic, it is all the ways in which people benefit from ecosystems – legal, political and so on. I thus depart from Naruso and Iba in that substantial transference is not only the ingestion and digestion of food,¹⁷⁴ in response to environmental irritation. I argued above that the ecosystem is the wider ecology but it is made up of smaller enclosed ecosystems, social systems and psychic systems, all brought together through organisations. The digested food is assimilated (acceptance) if it is (re)usable by the ecosystem to produce more substances, that can be coded, as Naruso and Iba argued, as “biologically beneficial” or “not biologically beneficial”; if not, it is eliminated (rejection) as waste.¹⁷⁵ However, there are two ways of understanding waste produced by the ecosystem. On the one hand, if the ecosystem is a combination of biological systems, then waste is the consequence of an entropic

¹⁷⁴Naruso and Iba, 2008, 8-9: 'For the ingestion, creatures take something into their bodies, however they have not changed it to their body materials yet. They just take it into their body...The digestion means the change of the materials to their own body parts. So they can use those materials for energy, growth, etc.'

¹⁷⁵Naruso and Iba, 2008, 9

process, something material and not a form of consciousness or communication. On the other hand, if waste from biological systems is the consequence of entropy, then the ecosystem is defined by Naruso and Iba as the material environment. Like waste in social systems, rejection in the ecosystem does not mean separation. As can be seen with the emission of pollutants and their effect, the ecosystem can “reuse” substances regardless of whether it is beneficial or not to do so. The distinction beneficial/not beneficial is a determination from the perspective of the ecosystem, in the same way lawful/unlawful is a determination from the perspective of the legal system. What is of no use to the ecosystem is set aside as waste and placed in the ecosystem’s environment. But since everything is produced and consumed in some way there is no waste as such thing as ecosystemic waste. There is only that which is described as waste by psychic systems and social systems as a result of organisational decisions. In this respect, the wider ecology could be regarded as a systemic unit in its own right, made up of an ecosystem and a non-ecosystemic environment. The ecosystem produces substantial transference, which can be coded and used to produce more substantial transference or be placed as “waste” in the environment, comprising psychic systems and social systems. Just as waste in social systems is made usable by referring to other social systems through organisations, psychic systems and the material environment, the “waste” that is placed in the ecosystem’s or ecological environment is made usable by referring to other ecosystems through organisations, psychic systems and social systems. However, Luhmann argued that only psychic

systems can perturb social systems: ‘Everything else – say, death, fire, earthquakes, climatic shifts, technological catastrophes – can only destroy communication. Such events can, of course, be observed, that is, thematised by the social system, but to do this requires communication and, as its external condition, consciousness.’¹⁷⁶ Human beings can only be of importance to the development of society because they are distinct entities in the environment of society and enclosed in minds and bodies. In the same way, social systems can only “have an effect” on the ecosystem through its structural coupling with psychic systems; substantial transference in the ecosystem depends on consciousness as well. As Luhmann pointed out, the distinction between human beings and the ecological environment is artificial; human beings are a part of the ecosystem, but only in part. Just as psychic systems are structurally coupled with social systems through language, they are structurally coupled with the ecosystem through their bodies, and thus, in the age of the Anthropocene, they are in a privileged position and able to perturb both. Thus, when it comes to the definition of ecosystem services, human wellbeing is the value of nature to society, how nature is understood through the medium of language. Thus, in the economic system, the value of nature to society is seen in the economic system through price. If there is a price, it is codeable as payment/non-payment, if there is no price, then it is waste.

¹⁷⁶Luhmann, 1997, 73

Conclusion

In this chapter, I have sought to put forward Luhmann's theory as a methodology for understanding the management of waste in society. If society is the space in between human beings, then communication is waste from the perspective of human beings in that it is something thrown away. Communication refers to the interactions between human beings in which something material is transferred. Thus, instead of waste being thrown away, it is commonly recognised as something that affects other human beings. Each social system has its own way of communicating about the transfer of waste – it can be lawful/unlawful, a payment/non-payment, relating to government/opposition, healthy/unhealthy and so on. Language is the fundamental paradigm for a structural coupling between consciousness produced by psychic systems and communication. However, it is not only a medium of words but also of actions and it takes place not only through writing and speaking but as part of the material environment. Each social system is able to differentiate between communication that it is usable for developing its understanding of the environment and that is not usable and can be set aside as waste and of concern to the environment. In this regard, as indicated in Chapter 1, what is labelled waste by social systems is a form of communication and distinct from the uncommunicated material substance which was transferred in the environment. Each social system prioritises what is usable and does not prioritise what is waste; some communication is reusable to produce more communication, the rest is disposed.

However, the communication that is disposed can be recycled in response to being irritated by the environment. Therefore, the waste hierarchy, which is defined in Chapter 1 as a priority order of waste management activities, is a general paradigm for the autopoiesis of social systems. Thus, the legal system as a social system steers the waste management process by steering itself through its relationship with the environment, which comprises other social systems. But steering is mediated through organisations, which produce decisions by taking into account and finding consensus between the distinct understandings of social systems. Repeated decision-making by the organisation produces undecidable decision premises, which can be thought of as the organisational culture; these include the paradigms by which the organisations bring together different social systems. It is through the organisation that Luhmann's theory offers a reflexive approach to law in that the reverberations of the social system are, in Teubner's language, focused so as to produce resonance in other social systems. The interpenetration of psychic systems and social systems takes place through the organisational context produced as a result of decision-making. The decision making by organisations, in the language of Sunstein and Thaler, designs the choice architecture, which is the unity of social systems, organisations and psychic systems; it nudges, not mandates or prohibits, human beings towards choosing particular behaviour. Therefore, the choices made within human consciousness influence the decisions made within the boundaries of organisations, which are shaped by the interaction of law, economics, politics and other social systems, as described by

paradigms. In other words, human beings do not behave in a particular way just because something is lawful or unlawful but, through the mediation of organisations, they are also influenced by economic, political and other factors. Thus, I argue that the circular economy, as a circle of infinite interactions between organisations, is not, as it appears from the literature, a paradigm for describing the economic system alone but a paradigm for the mediation of social systemic steering through organisations. In this respect, as argued in Chapter 1, if the economic system in Luhmann's theory is capitalist, a circular economy is what Druckner referred to as a postcapitalist society in that it comprises many social systems whose fundamental component is communication, some which can be used to produce more communication and the rest which is discarded and is only made usable by engaging with other social systems. Therefore, the circular economy is not, as indicated in the literature, the goal that is achieved after the implementation of the waste hierarchy; it is the operation of the interactions of different views of the waste hierarchy, just as Luhmann's society is the operation of the resonance of different social systems. In Chapter 4, I apply the theoretical framework developed in this chapter to a reformulation of the commons that suggests a solution to the tragedy of the commons where the distinct shared understandings of waste management in each social system can only be effectively used through interrelations into a more consensual understanding. This is indicated in Chapters 5 and 6 by the decisions taken by particular organisations – the court system in Chapter 5 and households and local authorities in Chapter 6 – with regard to the

development of (a) environmental law principles (b) the reformulation of discarding in E.U. law as the waste hierarchy and (c) waste policy in England.

Chapter 4: Escaping from the Tragedy of the Commons

In Chapter 2, I argued that a Luhmannian view of waste could be situated next to other perspectives in that it distinguishes the uncommunicated, material aspects from the communicated, immaterial aspects. Thus, in Chapter 3, I posit that communication gives value to what a human being as previously determined to be waste and I use Luhmann's theory to describe the circular economy as a paradigm for the interrelationship between distinct, shared understandings of the waste hierarchy, which is a generic paradigm for the autopoiesis of social systems. In this respect, the premise of this chapter is that the theoretical framework developed in the last chapter can be applied to the existing literature on the commons as a space that is accessible to a group of human beings in order to hold together contradictory views of the management of the commons. As I argued in Chapter 2, following Philippopoulos-Mihalopoulos, Luhmann's theory can be used to build on the different paradoxical understandings of the commons – as a space that is open to all and as a closed space - and show how they relate to each other. Jane Holder and Tatiana Flessas have offered a tentative generic description for different forms of commons as 'the collective and local ownership of land, resources, or ideas, held in an often communal manner, sometimes in opposition to private property'.¹⁷⁷In this chapter, I argue that social systems are forms of commons in that they produce communication, etymologically

¹⁷⁷ Holden and Flessas, 2008, 300

from Latin *communicare* (“to share, divide out; communicate, impart, inform; join, unite, participate in”, literally “to make common”).¹⁷⁸ Thus, the commons could be regarded as an epistemological, rather than ontological, device for managing the environment of human beings. This chapter is important because it deals with the overriding problem of waste, the placing of waste in the environment where it cannot be perceived and because it is of no use. In the commons literature, the excessive disposal of waste in the commons beyond sustainable limits is described by Garrett Hardin as a “tragedy of the commons”.¹⁷⁹ Indeed, with reference to Paterson’s explication of the difference between Weber’s formal and the material orientations of law discussed in Chapter 3, it could be argued that generation of waste is an externality or “market” failure which leads to further demands for the law to intervene beyond its capability. In Chapter 3, I argued, using Luhmann’s theory, that society is a metaphorical landfill because it comprises communication produced in response to the decisions taken by human beings within organisational limits, but by decentring human beings and placing them outside society it can be seen that the social understanding of waste is as something that cannot yet be processed by social systems, whose autopoiesis is the development of a mechanism for reducing waste. Thus, in this chapter, I argue that by taking a Luhmannian approach to the commons, it is possible to move away from the idea of waste disposal as a “tragedy of the commons” towards

¹⁷⁸<http://www.etymonline.com/>

¹⁷⁹Hardin, 1968, 1244

waste disposal being one of a number of waste management activities and not an end in itself, as indicated in the waste hierarchy.

The Commons: Background Considerations

In a “seminal” essay,¹⁸⁰ Garret Hardin described the commons as a metaphor for ‘a pasture open to all’.¹⁸¹ In her revisiting of Hardin’s essay, Beryl Crowe observed that ‘the commons is a fundamental social institution’ in which the English common law always ‘recognised that in societies there are some environmental objects which have never been, and should never be, exclusively appropriated to any individual or group of individuals...In England the classic example of the commons is the pasturage set aside for public use.’¹⁸² In other words, the commons was juxtaposed with private property. The problematic of this understanding of the commons as open to all is that it resulted in the “tragedy of the commons” where each user is motivated by rational self-interest to keep extracting more and more resources – or, in the case of dumping pollution, putting more and more in - even if it went beyond the limits of sustainability,

¹⁸⁰ Hardin’s essay “The Tragedy of the Commons” has become one of the key texts in the commons literature and has constantly been described by “seminal” in the secondary literature. Cox has observed that Hardin’s essay deserves to be called “seminal” because it has been reprinted over fifty times and entire books have focused on exploring the meanings and implications of the phrase “the tragedy of the commons”, which itself has become part of the ‘common parlance at colleges and universities’ and also property (1985, 50). The essay is therefore seminal in the etymological sense of being a seed (from Latin *seminalis*).

¹⁸¹ Hardin, 1968, 1244

¹⁸² Crowe, 1969, 1103

because it was more beneficial to do so.¹⁸³ Hardin was not the first to identify the phenomenon of the tragedy of the commons. As Aristotle observed, ‘that which is common to the greatest number has the least care bestowed upon it’ because ‘everyone thinks chiefly of his own, hardly at all of the common interest; and only when he is himself concerned as an individual. For besides other considerations, everybody is more inclined to neglect the duty which he expects another to fulfil...’¹⁸⁴ In other words, even if something is available to all, individuals are only concerned with their own benefit or responsibility and anything else is left to others to deal with. John Locke identified an “original commons” belonging to ‘mankind in common’ by reference to the Book of Genesis;¹⁸⁵ as Holder and Flessas paraphrased, Locke’s justification for the existence of private property was that it was the only way that the earth could be productive under the dominion of mankind in common.¹⁸⁶ Indeed, the

¹⁸³ Resources within the commons were either usable or not usable and the rationality of marginal increases was calculated as the sum of the positive component of ‘utility’ – increasing the resources of the individual by +1 - and the negative component of ‘utility’ – decreasing the shared resources of others in the commons by -1 (Hardin, 1968, 1244), that is the increase in usable resources of the individual and decrease in usable resources for the rest of the herders in the commons. However, since the commons is held by all users jointly, the negative component of -1 would equate to an individual negative component of less than -1, so it would always be rational for the individual herder to make marginal increases.

¹⁸⁴ Aristotle, 350 BCE

¹⁸⁵ Locke, 1821, para 24

¹⁸⁶ Jane Holder and Tatiana Flessas summarised Locke’s position: ‘Although undeniably powerful, the idea of rights in common do not deny individualised property holding (so long as this was held in accordance with a basis matrix of rights and duties). Rather by the work of his own hands, a man can remove something out of the common state of nature, by drawing water, cutting grass, or picking fruit, and use it as his own. This is Locke’s “labour mixing theory”, which both explains and justifies the original de facto acquisition of private property...Locke starts as off on the “perpetual tug of war between the private and the public in spatial terms” while also providing a forerunner to modern environmental thought with his command that takings on the land should not involve its despoliation. Despoliation for Locke, however, meant waste or uselessness, in contrast to cultivation or profit. (Holder and Flessus, 2008, 302).’

mathematician William Forster Lloyd, in his pamphlet *Two Lectures on the Checks to Population*,¹⁸⁷ noted the poor quality of flora and fauna on the commons:

‘Why are the cattle on a common so puny and stunted? Why is the common itself so bare-worn, and cropped so differently from the adjoining inclosures [sic]?...In an enclosed pasture, there is a point of saturation...beyond which no prudent man will add to his stock. In a common, also, there is in like manner a point of saturation. But the position of the point in the two cases is obviously different.’¹⁸⁸

According to Lloyd, there are more resources for the individual with sole access to enclosed land to use than there are in commonly-accessible land. Thus, an increase in the use of resources from commonly accessible land affected many more people than an increase in the use of resources from enclosed land. However, even Hardin argued that private property was not always enough to protect the commons:

‘The rational man finds that share of the cost of the wastes he discharged into the commons is less than the cost of purifying his wastes before releasing

¹⁸⁷Hardin, 1968, 1244

¹⁸⁸Lloyd, 1832, 30-31

them...The tragedy of the commons as a food basket is averted by private property, or something formally like it. But the air and waters surrounding us cannot readily be fenced, and so this tragedy of the commons as a cesspool must be prevented by different means, by coercive laws or taxing devices that make it cheaper for the polluter to treat his pollutants than to discharge them untreated.¹⁸⁹

According to Hardin, the legal system and the economic system were alternate mechanisms of placing boundaries around the use of the commons in order to make up the weaknesses of private property. In this respect, the global commons is any natural resources that are, in theory, available to all by virtue of not being enclosed. Typically this refers to natural resources that are outside national jurisdictions, namely, the high seas, the atmosphere, Antarctica and Outer Space.¹⁹⁰ Susan J Buck has observed that the global commons has only remained 'unfettered by legal rights...because access to them has been difficult and the value of the resources they contain has not been enough to justify the effort of acquiring them'.¹⁹¹ In other words, they are outside the boundaries of the law, because they are outside the boundaries of economics, science, and politics and so on. As scientific and technological capability

¹⁸⁹Hardin, 1968, 1245

¹⁹⁰UNEP, <http://www.unep.org/delc/GlobalCommons/tabid/54404/>

¹⁹¹ Buck, 1998, 1

increases, the push towards the enclosure of the global commons is inevitable in order to protect access.

David Feeny criticised Hardin's understanding of the commons as 'an open-access system' in which there is an 'absence of well-defined property rights'. He observed that 'many of the misunderstandings found in the literature [on the commons] may be traced to the assumption that common property is the same as open access'; private property is the vesting of 'the rights to exclude others from using the resources and to regulate the use of the resources', while common property is the holding of a resource 'by an identifiable community of individual users' who can 'exclude outsiders while regulating use by members of the local community'.¹⁹² Feeny also identified state property as the vesting of rights exclusively in government who manages it for behalf of the public.¹⁹³ It could be argued that state property is a form of common property in that the public are beneficial owners. However, I would argue that state property is a hybrid of private property and common property. As I argued in Chapter 1, the government is not a singular entity but a network of different organisations; property is not held by the government as such but by a specific organisation. Furthermore, with the contradictory tendencies towards deregulation and command-and-control and the paradox between the liberal and welfare state, as mentioned by Paterson in

¹⁹² Feeny, 1990, 4-5: Feeny's use of «common property system» was the same as Elinor Ostrom's use of «common pool resources».

¹⁹³ *ibid*, 4-5

Chapter 3, the distinction between government and non-government is somewhat arbitrary, with non-government organisations often carrying out the functions of previously government organisations. Thus, as Feeny argued, it is not enough to only take the property rights regime into account but to also ‘understand a whole host of institutional arrangements governing access to and use of the resources’.¹⁹⁴ In other words, the management of the open access commons depended on not only one private property systems and common property systems but also the relationships between different institutions or organisations. Thus, Feeny argued that Hardin’s account of the tragedy of the commons is not the full story:

‘The “tragedy” may start as in Hardin. But after several years of declining yields, the herdsmen are likely to get together to seek ways to (1) control access to the pasture, and (2) agree upon a set of rules of conduct, perhaps including stinting, that effectively limits exploitation. Whether or not the intended self-regulation works depends on a number of factors. Here the simple model breaks down – no single metaphor can tell the full story. The medieval English commons usually were regulated by the community, sometimes effectively, sometimes not. The outcome was never so clear and deterministically predictable as in Hardin’s model.’¹⁹⁵

¹⁹⁴ Feeny, 1990, 5

¹⁹⁵ *ibid*, 12-13

According to Feeny, the tragedy of the commons can be resolved through the collaboration between the users in order to set up boundaries to prevent access and to create some form of local law. Elinor Ostrom has made similar point, observing that the tragedy of the commons was theorised in the literature to occur when certain assumptions about common-pool resource systems were made:

‘In such systems, it is assumed that the resource generates a highly predictable, finite supply of one type of resource – one species, for example – in each relevant time period. Appropriators are assumed to be homogenous in terms of their assets, skills, discount rates, and cultural views. They are also assumed to be short-term, profit-maximising actors who possess complete information. In this theory, anyone can enter the resource and appropriate resource units. Appropriators gain property rights only to what they harvest, which they often sell in an open, competitive market. The open access condition is a given. The appropriators make no effort to change it. Appropriators act independently and do not communicate or coordinate their activities in any way.’¹⁹⁶

According to Ostrom, the problematic with Hardin’s thesis is that it assumed all users were the same, purely selfish and economically rational, only owned what they physically possessed and did not communicate. As discussed above, Hardin’s premise

¹⁹⁶Ostrom, 2000, 30

is that human beings are on the whole individualistic and only concerned with maximising their gain. However, Ostrom argued that the idea of human beings as purely selfish are not borne out by the evidence: 'Although tragedies of the commons undoubtedly occurred, it is also obvious that for thousands of years people have self-organised to manage common-pool resources, and users often do devise long-term, sustainable institutional arrangements for governing these resources.'¹⁹⁷ Thus, Ostrom argued, Hardin's understanding of the tragedy of the commons has been 'used by many scholars and policy-makers to rationalise central government control of all common-pool resources and to paint a disempowering, pessimistic vision of the human prospect'.¹⁹⁸ That is, following Hardin, it has been held that external authorities are required in order to rescue human beings from a situation they cannot change. Whilst it is not difficult to see, following Hardin, why this position has been developed, it is worth point out that Hardin did not exclude the possibility for a role for mutual agreement:

'Every new enclosure of the commons involves the infringement of somebody's personal liberty. Infringements made in the distant past are acceptable because no contemporary complains of a loss. It is the newly proposed infringements that we vigorously oppose; cries of "rights" and "freedom" fills the air. But what does "freedom" mean? When men mutually agreed to pass laws against

¹⁹⁷ Ostrom, 1999, 278

¹⁹⁸ *ibid*, 278

robbing, mankind became more free [sic], not less so. Individuals locked into the logic of the commons are free only to bring on universal ruin; once they see the necessity of mutual coercion, they become free to pursue other goals. I believe it was Hegel who said, "Freedom of recognition of necessity".¹⁹⁹

According to Hardin, it was only through mutually agreed or mutually acceptable restrictions that human beings are free to do other things. Indeed, if, as Aristotle and Locke argued, an open access commons can only bear fruit if managed according to private property, I would argue that there would have to be some form of mechanism for enforcing the boundaries. Following Feeny and Ostrom and, to an extent, Hardin, this enforcing mechanism is institutional and communicative.

A further problematic with only regulating the open-access commons using private property is that it can result in an anticommons. According to Michael Heller, an anticommons comprises the distribution of rights of ownership of a scarce resource to many owners who can each exclude others, resulting in no-one having a privilege of use: 'When there are too many owners holding rights of exclusion, the resource is prone to underuse – a tragedy of the anticommons.'²⁰⁰ That is, if each owner can only use the part that has been allocated to them and cannot have access to what belongs to other owners, then what one owner can do is limited and not all of what they own is used.

¹⁹⁹ Hardin, 1968, 1248

²⁰⁰ Heller, 1997, 3

The anticommons differed from the commons in that, in the latter, the multiple owners of a scarce resource cannot exclude other owners. According to Heller, anticommons were a particular problem in societies that were in transition from socialism - under which everything was owned by the state - to capitalism, in which different assets or rights were owned by different entities. In a sense, Heller argued, anticommons arose when too many property rights were created, with too many decision makers being able to block use:

‘Once an anticommons has emerged, collecting rights into private property bundles can be brutal and slow. Rights-bundling entrepreneurs may try to use market transactions and intimidation to assemble private property, but holdouts by anticommons owners and high transaction costs may block this path. When anticommons owners exercise their rights through rent-seeking in political markets, governments may fail to rebundle rights sensibly. Governments may administratively and fiscally be incapable of anticommons rights and compensating owners, and they may be strategically unwilling to take rights without compensation. The difficulties in overcoming the tragedy of the anticommons suggest that property theorists might pay more attention to the *content* of property bundles, rather than focusing just on *clarity* of rights.’²⁰¹

²⁰¹ Heller, 1997, 4-5

According to Heller, there is more to property rights than simply being defined – that is, it is not just about owning property but what it brings – and thus trying to resolve tragedies of the anticommons can be hampered by resistance from owners as well as economic and political factors. In this respect, it is not possible for the owner of one right to benefit from it without interacting in some way with the owners of other rights, whether in order to buy those rights or simply to have access. Therefore, just as Ostrom observed in relation to the tragedy of the commons, the only way to prevent or to resolve a tragedy of the anticommons is through some form of communication. Both an open-access commons without privatisation and a heavily privatised commons produce waste.

In this section, I have sought to offer an overview of different, seemingly paradoxical, understandings of the commons, with a view to developing a singular view that can hold all of them. In one view, associated with Hardin, the commons has been seen as something that is open to all. But without the restrictions imposed by private property and the legal and economic system to enclose parts of the commons, it is at risk of degradation through overpopulation and overuse (the tragedy of the commons). The aim of enclosure is to reduce the number of people who can have access. In another view, put forward by Ostrom, the commons has been understood as an enclosed system in itself that allows some people to access but excludes others. Following Feeny,

the commons is a common property systems in juxtaposition with private property and state property systems. Management of the enclosed commons depends not only on the legal and economic systems but also internally-produced collaboration or communication, and this can be a solution to the tragedy of the commons. It also depends on the institutional arrangement. The problematic with the commons, however, is that if too many restrictions are imposed on what can be used by whom then the resource can be wasted without communication. This gives rise to what Heller referred to as the tragedy of the anticommons. Following Heller, the only way out of the tragedy of the anticommons is through communication or coordination. It could thus be argued that where adequate communication is not taking place within the boundaries of the commons then external organisations that take legal and economic factors into account. But since, according to Hardin, the laws that are required to enclose the commons are themselves created by mutual agreement, it could be argued, following Hardin, that the legal system itself is comprised of communication. At the same time, following Heller, economic transactions or political decisions also cannot take place without some form of communication or co-ordination between people. I would therefore argue that that the fundamental characteristic or component of the commons is communication. This is what I think Heller meant when he noted that property rights are not simply about allocation but also about content.

Since communication is the fundamental characteristic of the commons, I argue in the following section that Luhmann's theory can be used to describe the management of the commons based on the different understandings of the commons discussed in this section. Markus Peterson and Tarla Rai Peterson have provided an idea of what this process might look like, in their own application of Luhmann's theory to Hardin's essay to develop a conceptual model of society as a simplified commons relating to ranchers grazing livestock.²⁰² Each rancher individual perceives that the amount of biomass or forage has decreased to the point that it affects livestock weights. A single rancher cannot do much to change the situation but 'if enough members of this society determine that they are receiving insufficient profitability from their livestock, the group mutually agrees that a problem exists: economic strength (ability to pay) has been negatively impacted – an environmental signal was translated into terms of the economic function system.'²⁰³ In Chapter 3, I argued that what the ecosystem understood in its own terms as biologically beneficial or not biologically beneficial is understood by the economic system in terms of payment or non-payment. Peterson and Peterson argued that each social system develops its own understanding of what other social systems understood, through resonance:

'As is often the case human society reframes the economic problem as a political one, in an attempt to achieve redress by the mutually agreed upon

²⁰² Peterson and Peterson, 2001, 300-301

²⁰³ *ibid*, 300

coercion suggested by Hardin (1968). The motivation is to seek a political solution to the problem of decreased biomass resulting in decreased individual profitability may be rooted in a religious belief that the economic good of society as a whole transcends the economic good of individuals, that the good of future generations transcends the good of the small numbers of those imminently involved, or some combination of these rationales. Voting, as well as other means of influencing what groups of people are in or out of office, enable society to legislate a potential solution to the problem, in this case either a ranching subsidy or a statute requiring removal of livestock from the commons when forage becomes depleted...Not every individual voluntary, however, voluntarily abides by the law, which leads into the legal function system. Here members of society bring suit against those who choose not to abide by the law, thus coercing them to remove animals from the affected environment until the forage recovers to a previously agreed upon level.²⁰⁴

According to Peterson and Peterson, only the economic system actually responds to tragedies of the common in the environment but other social systems appear to respond to other social systems. Peterson and Peterson's model is useful as an illustration of how different social systems may engage with each other. In my view, it is problematic on terminological grounds: Peterson and Peterson conflated resonance

²⁰⁴ Peterson and Peterson, 2001, 300-301

with communication, but, as argued in Chapter 3, social systems only categorise communication as useful or waste; resonance is the mediation of steering through organisational decision-making. It is my view that what Luhmann's theory brings to the commons literature is an opportunity for greater theorising of communication as a solution for the tragedy of the commons in that "communication" in the commons literature is never just about verbal and written communication but about the shared understanding of actions that take place in the environment. It is about law, economics, politics, etc. as well as organisational decision-making. It is able to do so because it enables the distinction to be made between human beings and the material environment from social systems and organisations that describe the interactions between human beings in the material environment. By making this distinction, it is possible to develop a single approach to the commons that relates to the management of any type of shared resource, whether land, the environmental commons, public ownership, the global commons or the digital commons.

The Commons in Luhmann's Theory

Since communication is the fundamental characteristic of the commons, it could be argued it is through communication that value is attached to the world. As indicated in Chapter 3, for Marx, there were two parts to value: use value is inseparable from the thing to which it applies and thus can only be assessed by the possessor or user;

exchange value enables something to be exchanged or shared and is thus independent of the use value. Use value and exchange value were attached to a commodity, ‘an object outside of us, a thing that by its properties satisfies human wants of some sort or another’ and is produced in a society, that is one where a ‘capitalist mode of production prevails’.²⁰⁵As I argued in Chapter 3, the commodity “outside” of us (human beings) that satisfies our wants is communication, which, as discussed in the previous section, is what enable those with access to the commons to make use of it. A commodity, etymologically from Latin *commodus* (“suitable, convenient”), is a ‘convenient or useful product’;²⁰⁶ indeed, a connection could also be made to the English word “commode”, which can be regarded as a convenient or useful human invention that takes away waste (and indeed a rather convenient way of talking about the removal of waste without embarrassment). As indicated in the introduction to this chapter, communication can be understood etymologically as representing sharing, joining and making common.²⁰⁷ Thus, while a commodity is something produced and used by human processes that can be taken away by a “commode” – exchanged - communication enables humans to “join together”, to “participate in” their social environment. If a commodity is produced in a society where the capitalist mode of production is dominant, it generates revenue through exchange; otherwise it is a waste of capital. For Marx, capital is money that is used to buy something. Thus, as

²⁰⁵ Marx, 1999, Chapter 1

²⁰⁶ www.etymonline.com

²⁰⁷ www.etymonline.com

Chris Thornhill observed, Marx understood social contact between human beings as only taking place by exchanging the products of labour (commodities):

‘Because of this, the laws of human nature are replaced by “laws of commodity nature”, and the organic relations connecting people in natural society are supplanted by heteronomous laws of formal equivalence between commodities, so that relations between commodities supersede human relations and become the defining positive form of society’s self-encounter. Under capitalism, therefore, Marx proposed a functionalist model for the concrete examination of social life. He argued that under conditions of economic alienation human beings need to be viewed, not as primary agents or integral centres of cognitive or ethical autonomy, but as bearers of determinate material relations. From this perspective, he observed all social interaction as dictated, not by reflected human interests, but by causal imperatives that are insensitive to the human needs or purposes. Although often considered a theorist of revolutionist praxis, in short, the later Marx was quite expressly a theorist who was resigned to the non-revolutionary and profoundly non-spontaneous character of human society, and he viewed the complex autonomy of different interactive systems as militating against any volitional, actionistic, or total reconstruction of society...All attempts to construct society as a set of human relations, the later Marx suggested, inevitably prove

incapable of society: it is only if society is divested of its spurious image of humanity, and if it is interrogated, positively, in light of its underlying apersonal and material causes, that it can be meaningfully understood.²⁰⁸

According to Thornhill, Marx was an anti-humanist, non-revolutionary thinker who understood society not only as distinct from human beings but separated from them, with the primary motivation for economic interaction, using money, being other factors in the social environment that refer to relations between humans. Luhmann thus ‘appropriated’ the ‘anti-humanistic aspects of Marx’s thinking’ and ‘shared Marx’s view that society is profoundly *inhuman*, and cannot in its present form be rendered transparent to any original set of human emphases, interests or causes’.²⁰⁹ (Luhmann probably would have seen the “revolutionary” label as meaningless in modern society as being described as conservative or progressive.²¹⁰) Thus, as indicated in Chapter 3, society can only be understood from within. For Marx, this was through economic value. However, for Luhmann, as discussed in Chapter 3, economic value or communication is just one type of communication. But communication is the product of the autopoiesis of a social system and can be usable for producing more

²⁰⁸ Thornhill, 2013, 271

²⁰⁹ *ibid*, 271

²¹⁰ Writing about Luhmann, Christian Borch noted that the attachment, wrongly, of the word “conservative” to Luhmann’s theory was a consequence of Luhmann’s affiliation with Schelsky and Parsons, who ‘had a reputation of being conservative sociologists’ (Borch, 2011, 9). However, ‘Luhmann rejected the critique that his systems theory embodied a conservative approach’ because ‘in a rapidly changing society like the present one, it hardly makes sense anymore to distinguish sharply between conservative and progressive positions’ (Borch, 2011, 9-10).

communication or can be waste, which is stored in a part of the social system. However, wasted communication can be made usable by external reference to other social systems. In a sense, exchange value in Luhmannian terms refers to a process of external reference between social systems. As I argued in Chapter 3, the process of external reference or exchanging communicated information is mediated through organisations in the environment and in which humans are members. Thus, whereas Marx saw use value as within the remit of the human, Luhmann's theory departs from Marx in that use value and exchange value are both described by social systems that produce communication. In a sense, a commodity's exchange value is connected to its potential use value because, on the one hand, something may be exchanged because it is seen as being useful or not useful and, on the other hand, something is useful precisely because it can be exchanged. Thus, use value and exchange value as properties of a commodity can be represented, following Luhmann as argued in Chapter 1, as forms of communication. In this respect, social systems can be regarded as representing what the literature on the commons refers to as common property systems or enclosed commons in that the management of the environment is affected by the legal system, the economic system, the political system and so on. At the same time, social systems can also be regarded as representing what Heller referred to as anticommons in that the management of the environment cannot be described by one social system alone but there must be external reference to other systems so that systemic waste can be made usable. Therefore, the capitalist means of production can

be reformulated as the autopoiesis of the economic system, producing economic communication, which Luhmann refers to as capitalist to the extent that it is concerned with the production of payment or non-payment through the transfer of money as a result of organisational decisions. Since, in Marxian terms, the economic system depends on other factors in the social environment, it could be argued that the autopoiesis of Luhmannian society describes what Druckner called the post-capitalist society. As argued in Chapter 1, it is post-capitalist in it goes beyond the capitalist economy. But, as indicated in Chapter 1, Luhmann referred to postmodernity as just another stage of modernity. In Chapter 3, I argued, following Moeller, that there was no shift from human to posthuman because the human has always been posthuman in that the human exists outside society in the material environment. In this respect, a post-capitalist society goes beyond and thus comprises all social systems, where the capital or social capital is communication. Thus, the post-capitalist society is no different from a capitalist society.

Since the capitalist mode of production can be reformulated as the autopoiesis of social systems in society, it is possible to move away from the language of the tragedy of the commons. Hardin understood “tragedy” in dramatic terms, with reference to Whitehead: ‘The essence of dramatic tragedy is not unhappiness. It resides in the solemnity of the remorseless working of things’.²¹¹ Autopoiesis is remorseless in that

²¹¹ Hardin, 1968, 1244

the operation of social systems continues by producing communication. It is remorseless in the sense of merciless or without remorse because it takes place independently of other social systems or human beings; as argued in Chapter 3, human beings are only involved in the operation of social systems as members of organisations, which mediate steering between different social systems. Hardin saw the tragedy of the commons as a problem of overuse through overpopulation in that too many humans are using a scarce resource. Since social systems keep producing communication, then, as Luhmann argued, 'society does not weigh exactly as much as all human beings taken together, nor does its weight change with every birth and death'.²¹² As Moeller has illustrated, there are always more communications in social systems than there are human participants:

'Once I had lunch at a self-service restaurant in downtown San Antonio. I had just paid for my meal when the next customer approached the cashier. Coincidentally, both the customer's and the cashier's cell phones rang, more or less, at the same time, and both men started a phone conversation...The two phone conversations went on for quite a while, and both men kept talking while the dinner was paid for. So both men were simultaneously taking part in two communications...They were both *ones*[sic] who were, systematically

²¹²Luhmann, 2012, 7

speaking, *two*...They both lost their *in-dividuality* for a short time and turned into “dividuals”.²¹³

According to Moeller, what seems to be one human being can, in society, be more than one communication. In this sense, as argued above from the etymology, communication are the human unit divided into smaller parts. Thus, in a lifetime, the amount of communications that refer to the participation of the human being or other material entity with thing power will exceed the number of human beings in the environment. Too much waste in the material environment can have an adverse effect on human beings and the environment. But given that unusable communication (waste) is not separated from the social system that produces it, then, as argued in Chapter 3, too much waste enables external reference to other social systems. However, human beings are distinct from social system. There is also no point-for-point correlation between social systems as external reference is mediated through organisations. Therefore, it is difficult to argue that there is a problem of overpopulation of human beings in the commons.

In the previous section, I identified that the fundamental component of the commons is communication, co-ordination or mutual agreement, but it is not only informal interactions between users of the commons, it is also how the external factors, such as

²¹³ Moeller, 2006, 6-7

law or economics, that restricts use is developed. In this section, I have sought to outline how the commons might be described using Luhmann's theory, which regards social systems as spaces for communication between human beings. That is, Luhmann's theory offers the opportunity to examine communication between human beings independently of the human participants and the material environment, but still taking the influence of the environment into account. Marx offered an understanding of social interactions as primarily economic and concerned with the production of accumulation of capital as money. Through Luhmann's theory, it is possible to understand capital not only as money but more generally as communication in that the production of communication by social systems enables some of it to be used to produce further communication and some of it to "exchanged" through external reference with other social systems in order to be made usable. If there is no external reference, then that communication becomes waste and too much waste is what produces resonance with other social systems. The inevitability of what Hardin referred to as the "solemnity of the remorseless working of things" can be, in my view, described using Luhmann's theory as autopoiesis. Therefore, I would argue that the tragedy of the commons is a consequence of the lack of usable communication; it is not just about the environmental degradation or overexploitation or underuse of material resources, it starts with some form of social breakdown. At the point of social breakdown, human beings would be in what Thomas Hobbes called a fight for "all against all". In his 1668 book *Leviathan*, Hobbes saw this struggle only

being kept in check by a sea monster known as Leviathan,²¹⁴a metaphor for the state that may exceed its proper scope and power. Citing an article by Hardin written after *The Tragedy of the Commons*, Ostrom explained that Hardin presumed that ‘the only alternatives to the commons dilemma were what he called “a private enterprise system” on the one hand, or “socialism” on the other’, even though ““the true nature of the fundamental political systems and the effect of each on the preservation of the environment”” was ‘enveloped in a “cloud of ignorance”’.²¹⁵ The secondary literature seems to focus on Hardin’s assertion that the commons can only be managed by what Hardin referred to, following Hobbes, as a “Leviathan” figure and Ostrom observed that the Leviathan identified in the secondary literature was the centralised state, in opposition to the market. Amy Sinden subsequently observed that, ‘as academics and policyholders clamour to distance themselves from the now dowdy and stilted fashions of 1970s-style “command-and-control regulation” and to embrace the virtues of the free market, privatisation has replaced government intervention as the preferred solution to the tragedy of the commons’.²¹⁶ As argued in Chapter 3, this appears to be the “vicious circle” between more regulations and deregulation that a more reflexive approach to law is meant to move away from. Therefore, in contrast to the commons literature, I would argue it is not communication between human beings

²¹⁴The idea of Leviathan has its roots in the Jewish Tanakh or Biblical Old Testament in which it is described as, on the one hand, as a sea monster and, on the other hand, a metaphor for Satan (Job 41: 1-34; Isaiah 27:1; Psalm 74; Psalm 104).

²¹⁵Ostrom, 1990, 9

²¹⁶Sinden, 2007, 537

that enables the resolution of the tragedy of the commons but the external reference to other social systems. But, from the legal system's perspective, the economic system and political system cannot be observed, so their effects are with a cloud of ignorance, or, as Luhmann would say, "ecology of ignorance"²¹⁷- the social environment. There is no such things as a struggle for "all against all", because fighting, struggling, etc is a form of communication. The legal system steers the waste management process in the global commons by steering itself with reference to other social systems. If there is a Leviathan, it is not really a sea monster but an entity that exists in symbiosis with human beings; it refers to, as argued in Chapter 3, the organisational context – the "institutional arrangements" in the commons literature - that enable steering to take place and affect behaviour of human beings in response to the steering of social system. In other words, the tragedy of the commons is social breakdown, which causes environmental degradation, and it can only be overcome by becoming organised.

Conclusion

In this chapter, I have argued that Luhmann's theory can make a contribution to the literature on the tragedy of the commons. In the existing literature, there are contradictory understandings of the commons. In the first view, associated with Hardin, the commons is a resource that is open to all and the tragedy of the commons occurs

²¹⁷Luhmann, 2002, 78

when too many users use or produce too much. This problem has been dealt with by enclosing the commons using private property rights or societal mechanisms such as law and economics. In the second view, associated with Ostrom and Feeny, the commons is understood not as space open to all but as an enclosed shared space which is not open to everyone; the tragedy of the commons occurs when none of the users communicate or coordinate their usage. The result of communication is the creation of rules of conduct. However, I argue that this is not that different to Hardin's approach, in which restrictions were imposed through mutual agreement or mutual coercion. In the third view, following Heller, the commons can also comprise an anticommons in that the resources in a shared space is strictly divided up amongst the owners; the tragedy of the anticommons, when each owner is not able to make efficient use of their allocation because it depends on rights owned by someone else. Again, the solution to the tragedy of the anticommons is for different owners to communicate, and Heller specifically identified the capacity to use what someone else owned as a result of some form of economic transaction. I therefore argue that what Luhmann's theory adds to the commons literature is the ability to focus primarily on the communications that take place between human beings, rather than on the possession or production of material units. The global commons – the shared space that is open to all - is thus the combination of different social systems, which are each concerned with a specific type of communication and can only make sense of other types of communication by referring to other social systems through the decisions

made in the organisational context. Following Luhmann, I argue that, contrary to the prior literature on the commons, the tragedy of the commons is not the outcome of the absence of communication but a paradigm for the autopoiesis of a social system that prioritises some communication over other communication. It is both a consequence of deprioritising too much unusable communication and the trigger for recognising the limits of one social system and the important role of the environment when it comes to autopoiesis. Since a system cannot observe itself as part of the distinction system/environment, the legal system can only develop an understanding of the management of global commons through the various organisations – in the commons literature, the institutional framework - that mediates between different systems. Thus, in Chapter 5, I indicate how aspects of environmental law develop as a result of organisational decision-making, in this instance through the court system.

Chapter 5: The Consensual Nature of Environmental Law

In Chapter 2, I argued, following Philippopoulos-Mihalopoulos, that a paradox is a juxtaposition of different, contradictory positions, none of which are wrong in themselves, into a more complete whole. In Chapter 3, I argued that, in Luhmann's theory and for my purposes, this paradox is reflected in the distinction between usable communication and unusable communication that are of concern to the environment. It can only make systemic waste usable in response to irritation by the environment. That is, as argued in Chapter 3, the legal system steers the waste management process by steering itself through its relationship with the environment, with steering being mediated through organisations. Thus, in Chapter 4, I argued that, if the commons is an in-between space where human beings dispose of waste pollution, then the tragedy of the commons is the social breakdown that results when none of the commonly agreed social functions is able to code communication that refer to the transfer of material waste in the material environment. In the liberal state, this could be understood as market failure in the economic system and a failure of the rule of law in the legal system. Thus, the tragedy of the commons can only be avoided or dealt with when there are interacting organisations that are able to juxtapose the understanding of the legal system with the paradoxical understandings of other social systems and make decisions from a set of alternatives. This is the circular economy. In this chapter, through an encounter between my theoretical framework and Philippopoulos-

Mihalopoulos' own critical reading of Luhmann's theory, in which he exposed the foundational paradox of environmental law as "all-or-nothing", I argue that this paradox can be reconciled by the paradigms by organisations to show how information is selected from social systems when making decisions. First, I indicate this in the development of international environmental law principles as stated in the 1992 Rio Declaration. I then turn to the lack of a definition of discarding in the E.U.'s Waste Framework Directive and argue, contrary to the secondary literature, that this is not problematic because the definition was developed outside the legal system as a result of decisions by the European Court of Justice.

Organisations in Critical Environmental Law

Since the operation of the circular economy depends on the observation of distinct social systems by organisations, it could be argued that Luhmann's theory lends itself to a critical approach to law. According to Philippopoulos-Mihalopoulos, critique entails performing a 'distinguishing, indicating or judging'.²¹⁸ When the legal system is irritated by the environment, a critique is performed of "the current state of the law" – the remembered law – and a change is made to a "better state of the law", by remembering something that the system has, as argued in Chapter 3, forgotten or unconsciously remembered. In this respect, 'critique actualises itself in the crossing of

²¹⁸ Philippopoulos-Mihalopoulos, 2010, 13

a boundary from the unconsciousness of the system to consciousness of the system. Perhaps the limitation with Philippopoulos-Mihalopoulos' definition of critique is the idea of crossing from system to environment; since the legal system cannot observe itself as part of the distinction system/environment but as only one or the other, it is not clear how it is able to make the crossing from one to the other. I would argue that the critique of the law is performed by an organisation outside of the legal system, in order to "judge" whether the current state of the legal system is sufficient for making a decision or whether other, non-legal, environmental information is needed to make legal waste usable. Philippopoulos-Mihalopoulos observed, in accordance with Luhmann's theory, that this form of critique is a descriptive critique rather than, as is generally understood by the word, a prescriptive critique.²¹⁹ But I would argue that it is the organisation doing the describing and writing on the law. As argued in Chapter 3, the more an organisation makes particular decisions based on the understanding of social systems, the stronger the decision premise becomes until it is as if a particular decision is the only option and thus not really a decision but a *fait accompli*. That decision – made in an organisational context – becomes what Luhmann referred to as a norm. In a sense, the norm is other side of a paradigm; a norm relates to human behaviour whilst a paradigm describes the relationship between social systems. Both are the product of organisational decision making and affect how social systems code communication, but it does not exclude the possibility of abnormal communications.

²¹⁹ Philippopoulos-Mihalopoulos, 2010, 14

In a sense, the paradigm shift occurs as a result of too many communications being coded as abnormal.

Since paradigm shifts are consequences of decisions made by organisations in the environment, it could be argued that social systemic waste in the legal system are usable because they are environmental legal communications. Philippopoulos-Mihalopoulos argued: 'if we readily consign the epithet "environmental" to certain legal communications, it means that, on the one hand, these communications are encountered within a system that recognises them as such, and on the other, that these communications embody the external points of reference exactly thus: as points of external observation.'²²⁰Environmental legal communications are, by definition, legal communications but they cannot be understood as law; instead, the law understands that they are understandable by other systems in the environment, dealing with, for example 'scientific findings, ethical impediments and political issues of participation and democracy'.²²¹ Thus, on the one hand, environmental law is a 'sui generis branch of law', like criminal law, property law, housing law and so on,²²² in that there is a part of the legal system set aside for observing the environment. But on the other hand, unlike other branches of law, communications placed in the environment do not remain in the environment; they can be made usable by external reference to

²²⁰Philippopoulos-Mihalopoulos, 2007, 190

²²¹ *ibid*, 190

²²² Philippopoulos-Mihalopoulos, 2011, 19

other social systems. This is what Philippopoulos-Mihalopoulos referred to as the foundational paradox at the heart of environmental law, but I argue that it is organisations that overcome this paradox between social systems. In the next section, I indicate how organisations overcome the paradox by developing a form of consensus. In this respect, Philippopoulos-Mihalopoulos argued that a legal system is first and foremost acentric because the law is not just about the law but also the environment:

‘It specifically decentres the centre by displacing its centrality to always another centre, itself debilitated by the rupturing of the continuum between system and environment. This can be put in two ways: on the one hand, the environment of the legal systems consists of all other social systems such as politics, media, economy, science, and so on. While law sees an issue from its own legal perspective, the same issue is seen by other systems in their respective perspective...However, no one perspective is central, since all complement each other. There is no *über*perspective that can deliver the final judgement.’²²³

According to Philippopoulos-Mihalopoulos, waste as an environmental issue is not just a matter for the legal system. On the one hand, there is no one social system at the centre of society. On the other hand, since social systems are autopoietic, there is

²²³ Philippopoulos-Mihalopoulos, 2011, 29

more than one centre. At the same time, it seems the new centres of society are not social systems but organisations as mediators between social systems and producer of environmental decisions. Indeed, as argued in Chapter 3, the interpenetration between social systems and psychic systems takes place through organisations. But of course, the fundamental characteristic of Luhmann's theory is that a society producing communication and decisions exist in a space between psychic systems. Since the circular economy could be regarded as a network of interacting organisations, it could be argued that these interactions could be understood and coded by different social systems.

Environmental Legal Principles as Paradigms

The development of international environmental law is based on a mixture of rules and principles. In the *Gentini* case, the tribunal described a rule as 'essentially practical and, moreover, binding', while a principle 'expresses a general truth, which guides our actions, serves as a theoretical basis for the various acts of our life, and the application of which to reality produces a given consequence'.²²⁴ A rule could be said to state that

²²⁴*Gentini* case (Italy v Venezuela) 10 RIAA 551, In J.H. Ralston and W.T.S. Doyle, *Venezuela Arbitrations of 1903 Etc.* (1903). 720, 725 cited in B Cheng, *General Principles of Law as Applied by International Courts and Tribunals* [1953]. 376, cited in: Sands, Peel, Fabio and Mackenzie, 2012, 189. This view is echoed by Ronald Dworkin who described a rule as 'applicable in an all-or-nothing fashion' while a principle 'states a reason that argues in one direction, but does not necessitate a particular decision', only that 'officials must take it into account, if it is relevant, as a consideration inclining in one way or another'.²²⁴

a certain action is prohibited or compulsory, but a principle indicates that there may be a good reason to take a particular decision to act but it is not essential to act accordingly if there is a more relevant measure. However, as I argued in Chapter 3, the law mediated through the organisational context or choice architecture can only nudge human beings to behave in a particular way, but human beings are free to choose to disobey in response to being nudged. Since a rule gives a good reason to take a particular action (because it is compulsory or prohibited and in order to avoid sanction or negative consequences) but human beings are free to choose how to act, it could be argued that the difference between a rule and a principle is not based on a binding/non-binding distinction. Instead, rules and principles are different because a rule describes the coding of communication *within the legal system* about something that has happened in the environment, whilst a principle describes the relevance of a decision based on various factors, which are observations of different social systems. In this respect, a principle is not a norm, because a breach cannot be described as lawful or unlawful.²²⁵ If the legal system steers the environment by steering itself through the environment, a principle indicates that there are environmental legal communications produced by the legal system that rely on the environment to be made usable. Since being part of the distinction of system/environment is the legal system's blind spot, as argued above, it could be argued that the principle is, as argued in Chapter 3, a form of paradigm or decision premise developed by the organisation.

²²⁵Luhmann, 2005, 55

They are part of the organisational context of social systems, accepted by a group of people in the environment. In the context of international environmental law, principles are taken into account in the decision-making of governmental organisations within nation states. In the rest of this section, I illustrate how the organisation implements and develops specific international environmental legal principles, namely the precautionary principle, the polluter pays principle and the principle of sovereignty over natural resources, as stated in the 1992 Rio Declaration.

The Precautionary Principle

Although different versions of the precautionary principle have appeared in various forms at different levels of legal and political decision-making, the most referenced is stated in the Rio Declaration:

‘In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of *serious or irrevocable harm*, lack of full scientific certainty shall not be used as a reason for postponing *cost-effective measures* to prevent environmental degradation.’²²⁶

²²⁶ Rio Declaration, Principle 15

According to the wording of the Rio Declaration, the precautionary principle enables governments – or, as I argued chapter 1, the network of organisations involved in governing society - to implement measures to prevent serious or irrevocable harm to the environment without being absolutely certain from a scientific perspective that the harm will occur or that the measure will have any effect. As Paterson observed, ‘as innocuous as it sounds – to some extent, it says no more than common sense injunctions such as “better safe than sorry” or “prevention is better than cure”’.²²⁷In this respect, the precautionary principle is not about precaution in taking state action but in conserving the material environment. Principle 15 does not say that no scientific evidence is needed, but there is no need to have “full scientific certainty”(those where serious or irrevocable harm is possible). If wasteful acts are harmful then, in social systems, what is understood to be harmful is what is not usable for producing more communication because the social system cannot exist without producing communication. Thus, what is harmful from the legal system’s perspective is what cannot be coded as lawful or unlawful and what is harmful from the scientific system’s perspective is what cannot be coded as scientifically true or false. Serious harm is producing too much waste and it becomes irrevocable harm if the system is unable to make external reference, through organisations, to other social systems in order to make the waste usable. If it is possible to understand that an act causing pollution is lawful or unlawful, it is neither possible to allow it or to take action to punish, seek

²²⁷ Paterson, 2007, 515

redress or demand the polluter clean up the pollution. Similarly, if it is not possible to verify that the evidence does not support either that an act causes or does not cause harmful pollution, it is not possible to know whether and what action should be taken. As argued in Chapter 4, the result would be the tragedy of the commons – social breakdown – and it can only be resolved in an organisational context. This is precisely the situation that the precautionary principle is meant to overcome. Philippopoulos-Mihalopoulos has argued that there is clearly ‘a presumption in favour of environmental protection when there is scientific uncertainty and high risk’ but within the principle an assessment of the significance of scientific proof - in the absence of full scientific certainty - and that of the risk - serious or irrevocable harm - is included.²²⁸ If one took into consideration that the condition of a high level of risk is required as well, all this might suggest is that one could lower the requirement for what may normally be a high level of scientific certainty, so that one can take some form of measure to protect from a potentially serious or irrevocable harm. Principle 15 also has a third condition, that the lack of full scientific certainty does not prevent *cost-effective measures*. Whatever level of scientific certainty is required, it also has to be economically viable or affordable or value for money. Since the legal system steers the environment by steering itself through its relationship with environment, it could even be argued that the legal system is just another factor that the organisation takes into consideration besides science and economics. The precautionary principle is, as argued

²²⁸Philippopoulos-Mihalopoulos, 2007, 131

above, the organisation's observation of the legal system, scientific system and economic system steering the environment, but the organisation sees itself as doing the steering. Therefore, I argue that it is the organisation that determines the risk or carries out a risk assessment based on the scientific evidence, the cost and the law. In this respect, it could be argued that Rio Principle 15 is limited in its scope. An improved formulation of the precautionary principle is stated in Agenda 21, which recognises that society is far more complex:

‘In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right. The precautionary approach could provide a basis for policies relating to complex systems that are not fully understood and whose consequence of disturbances cannot yet be predicted.’²²⁹

From the wording of Agenda 21, it is easy to see why the precautionary principle can be reformulated using Luhmann's theory, as discussed above, with organisations deciding on policies that bring together systems of understanding, including the scientific system, even though it is neither completely known how the systems operate nor possible to predict what effect the systems could have. According to Paterson, it is easy to see why the “unscientific” charge against the precautionary principle has

²²⁹ United Nations, 1993, Para 35.5

emerged: 'there is practically an admission in Agenda 21 that, where science is lacking, something *other than science* in the form of precautionary principle may be required.'²³⁰ Echoing Principle 15, Agenda 21's version enables action when there is no *full scientific understanding*. As I argued above, the implication is that a certain level is still required and full scientific understanding comes as a result of external reference to other social systems via organisations. It is arguable then that the "unscientific" charge is unfair, as the application of scientific knowledge to practical solutions would always have to depend on economic cost, legality, political acceptability or willingness, maybe religious support or opposition, health concerns, the availability of education or training and so on. Indeed, Paterson argued that critics of the precautionary principle labelled it as unscientific, as opposed to non-scientific, because they wanted 'to convey the message that the precautionary principle is in essence irrational in the sense that it does not allow logical arguments or sound judgments to be made'.²³¹ To determine whether the precautionary principle could be used for rational decision-making, Paterson turned to the work of David Resnik in philosophy of science. According to Resnik, the precautionary principle is only relevant for 'decisions under ignorance, where it is not even possible to assign probabilities to the outcomes of different choices', not where it is certain or quantifiably probable that a decision will

²³⁰ Paterson, 2007, 518

²³¹ Paterson, 2011, 86

result in a particular outcome.²³² Paterson argued that Resnick's application of the precautionary principle is problematic:

'Indeed, if it not even possible to assign probabilities to the outcomes of different choices, then there is apparently no reason not to assign an equal probability to the best-case and the worse-case scenario. If that is true, then logically there would appear never to be a reason to discount the worse-case scenario and thus never a reason not to opt for the most precautionary approach. Critics of the precautionary principle such as [Gail]Charnley accordingly contend that it operates in effect as the principle of *inaction*. Defenders of the principle such as [Martin] Peterson point out, however, that operating the principle in this way is actually to replace it with the principle of *insufficient reason*.'²³³

According to Paterson, the logical conclusion of Resnick's approach - the precautionary principle is only relevant where it is not possible to assign probabilities to outcomes - is that there is no reason for taking any measures at all or for preferring one measure over the other. I would thus argue that Resnik's understanding does not even reflect the precautionary principle as stated in Principle 15 or Agenda 21 and discussed above. The whole point of Principle 15 or Agenda 21 is that governments do not need full

²³² Paterson, 2011, 87

²³³ *ibid*, 87

scientific certainty before taking action; precaution is not inaction before certainty but action in the face of possible risk despite limits on certainty. That is, the precautionary principle is applied precisely in those circumstances where it is known that there may be risk, with a view to lowering the risk. In this respect, I agree with Paterson and [Giandomenico] Majone that the problematic with Resnick's approach is that it depends on a flawed distinction between risk and ignorance.²³⁴ I would argue that the precautionary principle is more appropriate for what Resnick called 'decisions under risk, where even though the outcomes of different choices are not known with certainty it is nevertheless the case that probabilities can be assigned to the outcomes of different choices'.²³⁵ This thus fits with the idea of human beings, with freedom of choice, being nudged in particular directions by the organisational context or choice architecture. However, the presence of a risk is not sufficient to resort to the precautionary principle. Agenda 21 raise the bar for action even higher than Principle 15 so that the precautionary principle is considered only in cases of irreversible harm, i.e. where tragedy of the commons arises or is imminent, in response to environmental irritation. In Luhmann's words, this is referred to, euphemistically as, 'exceptional circumstances'.²³⁶ I would argue that there is reciprocity between exceptional circumstances and the boundary of Resnik's "decisions under risk" category, which,

²³⁴ Paterson, 2011, 88

²³⁵ *ibid*, 87

²³⁶ Luhmann, 1989, 70

according to Paterson, coincided with “decisions under ignorance”.²³⁷ The exceptionality of circumstances is characterised by the impossibility of calculating probabilities; circumstances are not exceptional if it is possible to calculate probabilities. An example of this could be when more rain fall than what records are able to indicate, leading to breaching of flood defences. The precautionary principle cannot therefore offer a rational approach to decision-making based on calculating probabilities, but it could be argued that taking precautions are rational precisely because it is not possible to calculate possible. The strength of Agenda 21’s version, from a Luhmannian standpoint, is that it was not meant to be a purely legal instrument but a ‘plan of action by and for the whole of the international community, designed to integrate environmental and development concerns for “the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future”’.²³⁸ In other words, it reflected the presence of what Luhmann called a global or world society (the somewhat nebulous “international community”) and, in this regard, its purpose was to enable the structural coupling (“integration”) of autopoietic social systems, as a result of organisational decision-making, in order to protect the material environment (the world, including psychic systems).Indeed, Sands has noted that Agenda 21 is based on a consensus-building approach to international law:

²³⁷ Paterson, 2011, 88

²³⁸ Sands et al, 2012, 44

‘First, as a consensus document negotiated by the international community over a period of two years, it provides the only agreed global framework for the development and application of international legal instruments, including “soft law” instruments, and the activities of international organisations. Second, limited parts of Agenda 21 might be considered to reflect “instant customary law”. Third, it reflects a consensus on principles, practices and rules that might contribute to the development of new rules of conventional and customary law.’²³⁹

Custom is not difficult to conceive of in an autopoietic legal system as the coding communications in accordance with its programming, while the international organisation develops a paradigm that is based on a consensus between human beings, ecosystems, the legal system, the scientific system, the economic system and subsystems of them. However, Luhmann’s theory would not, on the face of it, seem particularly amenable to the notion of consensus, given that its emphasis is on difference and distinction. But the mediation of steering through organisations, enabling the reduction of difference between system and environment, could be viewed as a form of consensus-building. In Chapter 4, I argued that the commons are social systems for communication between human beings and the tragedy of the commons as social breakdown can only be resolved through the external reference to

²³⁹ Sands et al, 2012, 45

other social systems; this is the consensus-building that is taking place. It does not say that the system and the environment become one; it just says the system understands the environmental position and can adapt accordingly. Similarly, there is something consensual about Philippopoulos-Mihalopoulos' repeated crossings between system and environment for the purpose of descriptive critique, as discussed above. After all, how can an agreement be formed if there is no sense of understanding of the difference between alternate positions? The important caveat, however, from a Luhmannian perspective is that, as Philippopoulos-Mihalopoulos argued in relation to critical environmental law, the "consensus" will take a long time to develop. It perhaps starts with one decision but it does not end there. The reason why it took two years to develop Agenda 21 and that subsequent international environmental summits and conferences have often been seen as disappointing is that the negotiations are not between individual human beings as such; each negotiation team is not made up of individual human beings but an organisation of members that represents a country or group of countries, which themselves comprise their own societies with legal, economic, political and other social systems and organisations.

The Polluter Pays Principle

The polluter pays principle is certainly indicative of a structural coupling between the legal system and the economic system. It was first identified by the Organisation for

Economic Co-operation and Development. As the name suggests, the purpose of the polluter pays principle is to internalise the cost of pollution in the economic system, so that a polluter 'should bear the expenses of carrying out...measures decided by public authorities to ensure that the environment is in an acceptable state'.²⁴⁰ The polluter should not receive subsidies for doing so and the measures should be those that it is 'legally bound to take to protect the environment, such as measures to reduce the pollutant emissions at source and measures to avoid pollution by collective treatment of effluent from a polluting installation and other sources of pollution'.²⁴¹ In other words, as argued above, the polluter pays principle describes that, where there is a rule describing communication that is coded as lawful within the legal system, the economic system produces a payment that does not reproduce the capacity to make future payments. This is contrary to the operation of the economic systems, which requires payments to be reproduced, but the idea is that an organisation is incentivised to make a decision to reduce pollution, such as the prevention, reuse and recycling waste and the recovery of energy from waste. The structural coupling between the legal system and the economic system can also be seen in the reaffirmation of the polluter pays principle in the 1992 Rio Declaration:

'National authorities should endeavour to promote internalisation of environmental costs and the use of economic instruments, taking into account

²⁴⁰ Organisation for Economic Co-operation and Development, 1972, Annex A, para a

²⁴¹ Organisation for Economic Co-operation and Development, 1992, 5

the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interests and, without distorting international trade and investment.²⁴²

The application of the precautionary principle by the organisation would seem to follow the E.U.'s approach where the polluter pays principle must apply to 'natural or legal persons governed by public or private law that are responsible for pollution'.²⁴³ So, an example of the polluter pays principle in relation to household waste policy, as discussed in Chapter 6, would be the imposition of fines for not putting waste in the correct receptacle or neatly or the charging of household waste collection services based on the amount of residual waste. Furthermore, as the principle is concerned with the internationalisation of the economic costs of environmental pollution, it indicates a structural coupling through the organisational context between the economic system and the ecosystem. As argued in Chapter 3, the economic system constructs its own understanding of substantial transference in the ecosystem, called ecosystem services. In this respect, the polluter pays principle is a paradigm for the organisation's observation of the legal system and economic system steering the environment and the interpenetration of the ecosystem and the economic system. (The ecosystem does not steer the environment because it is outside Luhmannian

²⁴² 1992 Rio Declaration, Principle 7

²⁴³ E.U., Council Recommendation 75/436/EURATOM, ECSC, EEC of 3 March 1975, Annex, para 2, cited in: Sands, 2012, 231

society.) This is why the production of economic payments that refer to ecosystemic operations does not seem to correspond to the production of biological beneficial or biological unbeneficial operations in the ecosystem, as if the economic system is a virtual system. At the same time, as the polluter pays principle suggests, the legal system is constrained by the public interest. In Chapter 6, I argue that the public interest could be considered as irritation by the social environment. But then it is arguable that the polluter pays principle echoes the precautionary principle in that it emphasises a relationship between particular social systems but in the context of other social systems. I would argue that that the limitation of the polluter pays principle is that it reflects Max Weber's portrayal of a legal system instrumentalised by the political system in order to deal with environmental costs of the economic system, as discussed in Chapter 3. I argue in chapter 6 that the economic system can just as easily be instrumentalised by the political system to deal with the environmental costs by providing economic benefit; this is not an application of the polluter pays principle.

Principle on Sovereignty over Natural Resources

Since the international environmental law principles indicates the importance of building a consensus between social systems through organisations, it could be argued that the principle of sovereignty over natural resources and responsibility over the environment indicates the role of consensus or communication in managing an

anticommons. This principle is stated in Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration:

‘States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign rights to exploit their own resources pursuant to their own environmental *and developmental* policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.’²⁴⁴

The essence of principles 21 and 2 is that a state can act and must make sure that its actions within the boundaries in which its law operates do not harm anything outside those boundaries. In chapter 4, I argued that social systems are common property systems, possessing communication, and the management of the commons depends on external reference between social systems. In chapter 3, I have argued that social systems steer the environment through organisations and in this chapter I have argued that environmental law principles describe the organisation’s observation of the legal system’s steering of the environment in relation to other social systems’ steering of the environment and indicate the possibility of building consensus between social systems. I would argue therefore that the state, as indicated in Principle 21 and

²⁴⁴ Italicised words inserted by Principle 2 of the Rio Declaration

Principle 2, is society in Luhmann's theory, the unity concerned with the management of waste using the relationships between different social systems and situated with a material environment, a territorial structure outside society. Following the discussion in Chapter 5, this principle is concerned with the relationship between society and the material environment. In a sense, it expands on the polluter pays principle as the interpenetration between the ecosystem and economic system, discussed above. Through the *right to exploit resources*, the legal system is able to produce usable communications or make unusable communication usable through external reference to other social systems. This right is sovereign not because the legal system is an autopoietic system but because every social system is an autopoietic system that seeks to make communication usable.

Waste and Discarding: Relevant Cases and Literature

The most recent E.U.-wide legal definition of waste, in the 2008 Waste Framework Directive (W.F.D.), is 'any substance or object which the holder discards or intends or is required to discard'; the holder is defined to be either the producer of the waste or a natural or legal person who is in possession of it.²⁴⁵ However, as argued in Chapter 3, social systems understand discarding as a form of communication that is either usable or waste; social systems do not "discard" what they regard as waste. The legal system

²⁴⁵ E.U., Directive 2008/98/EC, Article 3

differentiates between that which can be coded lawful/unlawful and that which is of no concern (systemic waste); legal waste in Luhmannian terms refers to an act that takes place in the environment that cannot be coded lawful/unlawful because, as argued above, it is really environmental legal communications and thus ultimately usable by the legal system. So, if waste is “any substance or object discarded”, then, as argued in Chapter 1, it is both communication and material waste. Thus, waste is not something discarded in legal terms if it appears in Annex 1 of the 1991 and 1975 W.F.D.,²⁴⁶ or in the much more extensive but non-exhaustive European Union’s List of Waste mentioned in Article 7 of the 2008 W.F.D. and in other directives on hazardous waste.²⁴⁷ This is why there is there is no explicit definition of “discarding” in the W.F.D - because discarding as it appears in that context is really communication about the act of “getting rid of” in the ordinary sense that takes place in the environment. As argued in Chapter 3, waste in the legal system is not separated from it, but only refers to something in the environment that the legal system cannot code. From a Luhmannian perspective, as something done by the holder, discarding is carried by the organisation or a human being in an organisational context or as a member of an organisation. Indeed since, as argued in Chapter 3, communication is the immaterial aspect between what Bennett referred to a material entity’s thing power and another’s emotional respond or it can be regarded as what Hegel referred to as mutual recognition, I would argue that what the law refers to as discarding is communication because it refers to

²⁴⁶ E.U., Directive 91/156/EEC

²⁴⁷ E.U., Commission Decision 2000/532/EC of 3 May 2000

an interactions between material entities. To be strictly correct, it could even be argued that, as argued in chapter 3, discarding is an act that results from an organisational decision. But as both organisations and human beings are in the environment of the legal system, as can be seen from nudge theory, human beings act and make decisions or choices within an environmental context. This distinction between the legal system and the ordinary sense make sense as, according to Cheyne, the understanding that seems to be implicit in the W.F.D is more than simply getting rid of; she argued that the idea of waste as being discarded for the purpose of going through disposal or recovery operations is ‘implicitly emphasised in the types of categories identified’ in Annex 1 in the 1991 W.F.D.²⁴⁸ The same could be said of the reference to the European list in Article 7 of the 2008 W.F.D. This approach differed from that of the 1975 W.F.D., in which waste was originally defined by way of disposal, not discard, and disposal was defined as collection, sorting, transport, treatment as well as storage and tipping and any transformative processes needed to recycle or reuse.²⁴⁹ Whilst it is not certain that on a reading of the W.F.D. that discard can be equated with disposal and recovery, by not explicitly defining “discard” and instead providing examples, the E.U. left the door open for the possibility of waste being disposed or recovered in a process that is not listed. It could therefore be argued, from the wording of the W.F.D., that the human beings in organisational contexts decide to discard and the act of discarding, or an interaction in which one discards and one

²⁴⁸Cheyne, 2002, 64

²⁴⁹Cheyne and Purdue, 1995, 154; E.U., Directive 75/42/EEC on waste

receives or is affected, is communication produced by the legal system in that it is separated from human being. In this respect, discarding could be regarded as a paradigm for differentiation in social systems, and in particular the waste hierarchy, as a result of decision making.

The idea of discarding as an organisation paradigm can be seen in the case law of the European Court of Justice. In *Tombesi*,²⁵⁰ which concerned the application of Italian rules for reusing residues from production processes as substitute raw materials, the European Court of Justice ruled that: 'The concept of "waste"...is not to be understood as excluding substances and objects which are capable of economic reutilisation, even if the materials in question may be the subject of a transaction or quoted on public or private commercial lists...The fact that a substance is classified as re-usable residue without its characteristics or purpose being defined is irrelevant in that regard.'²⁵¹ According to the E.C.J, waste included anything which *could* be discarded in the ordinary sense but *were not* because it could be reused. In this regard, as argued in Chapter 3, something that could be discarded as waste is not discarded because it is made usable by reference to the economic system. As indicated in this chapter, it could be argued that the reduction of waste in the environment is made possible by the organisation's implementation of environmental law principles, the consensus

²⁵⁰ European Court of Justice, Judgment of the Court (Sixth Chamber) of 25 J97, Criminal Proceedings against Euro Tombesi and Adino-Tombesi (C-304/94) and other Joined Cases.

²⁵¹Tombesi, C-304/94

building between social systems. In *Tombesi*, the court argued, there was no need to define “discard” even though it could not be interpreted in the ordinary sense and it could not be said that there was an “intention to discard”, in a sense the act of discard and a decision to discard. (I shall return to this distinction between the act and the intention to discard later in this section). In an opinion, Attorney-General (AG) Jacobs came to a similar conclusion except that he argued that “discard” has a ‘special meaning’; like Cheyne and Purdue above, he argued from the provisions of the directive that “discard” encompassed both disposal and recovery.²⁵² However, in trying to define “recovery operation”, AG Jacobs struggled to distinguish between waste that is separated from the holder for the purposes of recovery and waste that is recovered by the holder without separation for reuse as a raw material. Thus, he concluded that a substance is discarded if it is disposed of or the subject of a recovery operation. In other words, in both the judgment and the opinion, discarding does not involve separation. But, this seems to be contrary to the idea of waste being discarded by the producer or the most recent possessor. From *Tombesi*, it seems that discarding is seen as covering the process between production or coming into possession of waste and give up possession. I disagree with Cheyne that AG Jacob’s opinion ignores ‘the fact that Article 1 specifies discarding as a precondition to the existence of waste’.²⁵³ But a paradigmatic understanding would seem to follow from the inclusion of an “intention to discard” and “requirements to discard” as preconditions.

²⁵² Opinion of Mr Advocate General Jacobs, *Tombesi*, C-304/94, para 50

²⁵³ Cheyne, 2002, 66

A paradigmatic understanding of discarding in which the question of separation was irrelevant is supported by other cases. In *Inter-Environmental Wallonie*,²⁵⁴ one of the questions that the E.C.J. was asked to rule on by the Belgian Conseil D'état was whether a substance that formed part of the normal industrial process could still be considered "waste" within the parameters of Article 1 of the 1991 W.F.D. The court held that it did not matter who recovered waste or how it was recovered.²⁵⁵ As per Article 8 of the 1991 W.F.D., waste can be the disposed of or the subject of recovery operations carried out by the holder or an external undertaking. However, whether a 'substance or object' was to be discarded, i.e. to be the subject of a disposal or recovery operation, was to be determined in relation to the holder, not any recipient. This suggests, and is confirmed in *ARCO Chemie Nederland*,²⁵⁶ that the definition of waste does not take into account the intended destination of waste; whether it is disposed of or recovered in some way, it is all waste.²⁵⁷ If the holder is someone who possesses the substance or object to be discarded, then following *Inter-Environmental Wallonie*, discarding can encompass both waste that is separated and waste that is not separated. As Choongh and Grekos have commented, *Inter-Environmental Wallonie* 'brought to the fore the very question which had concerned the Advocate General in

²⁵⁴E.C.J., Judgment of the Court of 18 December 1997, *Inter-Environmental Wallonie ASBL v Regione Wallonie* C-129/96

²⁵⁵*Inter-Environmental Wallace*

²⁵⁶ *ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordeningen Milieubeheer* (C-418/97) [2000] E.C.R. I-4475 (ECJ (5th Chamber))

²⁵⁷ Samuels, 2010, 1392

the *Tombesi* case, and to which he conceded there was no satisfactory response.²⁵⁸ Waite commented that in *Palin Grant* “waste” was differentiated from “by-product”, which was something to be exploited or marketed in terms advantageous to the holder in a subsequent process without needing to be processed before being reused.²⁵⁹ Elisa De Wit commented that the difference between waste and by-product was the problem that AG Jacobs identified, as a result of the lack of an exhaustive definition of “recovery operation” as well as ‘an element of circularity’ between what constituted recovery and what constituted waste: ‘...some of the operations in Annex 2B...could refer equally to non-waste management operations. To overcome this difficulty, the advocate-general proposed as a test that an examination should be undertaken of whether the holder of the substance or object had consigned or intended to consign it as waste to one of the operations listed in Annex 2B.’²⁶⁰ It was the same view taken by the U.K. government in its written submissions to the E.C.J. in other cases, ‘that there should be a distinction between goods subject to the normal commercial cycle or chain of utility and goods consigned to specialised recovery operations.’²⁶¹ Indeed, when commenting on *Tombesi*, Geert Van Calster pointed out that AG Jacobs referred to a contemporaneous survey of O.E.C.D. members, which indicated a consensus that it is relevant to consider whether it is better for the environment to continue to use the existing raw material or to use the residual product or by-product of the production

²⁵⁸Choongh and Grekos, 2006, 469

²⁵⁹Waite, 2012, 53

²⁶⁰De Wit, 2001, 125-6

²⁶¹ *ibid*, 125-6

process as a substitute.²⁶² As a result, he concluded that if a substance does not comply with normal health or environmental requirements or standards it is waste and if it can be substituted for another material without further regulation or supervision it is not waste.²⁶³ In that respect, the E.C.J. implicitly sided with AG Jacobs in *Tombesi* in that less time should be devoted to ‘figuring out the meaning of “to discard”, focusing instead on the meaning of “disposal” and “recovery”’; in *Inter-Environmental*, it recognised the distinction between waste recovery and normal industrial processes of products which are not waste but, unlike AG Jacobs, did not set out guidelines for the distinction.²⁶⁴ It seems then the law had been taking an understanding of discarding all along, which is captured in the waste hierarchy, as argued in Chapter 3, also an organisational paradigm; it seemed that waste was the leftovers or the residue from a prior process. In a sense, then, waste was produced when a substance was discarded by the prior process. After it was produced, it could be disposed of, it could go through a recovery operation or it could be reused without the need for a recovery operation. Hence AG Jacobs’ opinion and subsequent cases were about distinguishing between “waste” and “by-product”.

A distinction was made between recycling and reuse in the U.K. case law. In *Mayer Parry Recycling*, Judge Carnwath adopted the view of AG Jacobs in *Tombesi* and

²⁶² Van Calster, 2001, 388; O.E.C.D., 1998

²⁶³ *ibid*, 388

²⁶⁴ *Ibid*, 389

distinguished between reusable material that did and did not have to go through a recovery operation.²⁶⁵ As I indicate in chapter 6, if it does need to go through a special recovery operation, it is generally known as recyclable. Elisa De Wit summarised that ‘for a substance or material to be waste it must be subject to a recovery operation’; when the recovery operation is finished the material is no longer waste.²⁶⁶ However, in *ARCO Chemie Nederland*, the E.C.J. held that whether a substance was waste within the meaning of the 1991 W.F.D. ‘had to be determined in the light of all the circumstances, regard being had to the aim of the Directive and the need to ensure that its effectiveness was not undermined’.²⁶⁷ In keeping with Article 4, a factor was whether disposal and recovery operations could be carried out without causing harm to human health and the environment. Like *Inter-Environmental Wallonie, Arco Chemie Nederland* concerned a situation where the recovery operations were undertaken by the original producer of the waste. Thus, “discarding” can be considered as the process leading to disposal or recovery, but it may not be finished at the point that it is made subject to a recovery operation. “Discarding” was not complete until the recovery operation was complete. However, *Arco Chemie Nederland* differed from the judgment in *Mayer Recycling*, which concerned a recycling processing company that would not have been the original producer of the waste. It would make sense that a recycling processing company is considered as turning waste into non-waste. In that respect, I

²⁶⁵Mayer Parry Recycling Limited v Environment Agency [1999] Env L R 489

²⁶⁶De Wit, 2001, 126

²⁶⁷ARCO Chemie Nederland Ltd, C-418/97

would argue that substantially *Mayer Parry Recycling* could still be said to be in keeping with E.C.J. thinking if one considers it as a decision based on the circumstances – not as a general rule - as someone who had come into possession of substances that have been literally thrown away (i.e. waste) and seeks to get rid of the concept of waste that had become attached to it. That is, it concerned a decision made in a particular organisational context. This pointed to waste as something objective. Nevertheless, as De Wit commented, ‘the ECJ must be regarded as overturning the distinction drawn by Judge Carnwath, as ECJ decisions are binding upon the courts of member states.’²⁶⁸ Indeed, the U.K. Court of Appeal has allowed a reference from the Attorney-General that, following *Arco Chemie Nederland*, recovery or disposal operations were not a precondition for a substance to be classed as controlled waste,²⁶⁹ i.e. waste that is within someone’s control. That is, waste does not have to be the subject of a disposal or recovery operation if it is within someone’s control but it depends on whether it can be discarded without causing harm to human health and the environment. This would of course be logical in terms of legal interpretation; the actual preamble and provisions of W.F.D. would arguably carry more weight than annexes.

It could be argued that the primary condition for whether a substance is waste or not is its risk to the human health or the environment. Certainly this is in keeping with the

²⁶⁸ De Wit, 2001, 126-7

²⁶⁹ Attorney General’s Reference (No 5 of 2000) Re [2001] EWCA Crim 1077

purpose of the W.F.D. Carnwath LJ in *OSS Group* argued in his discussion that the problematic with the previous E.C.J. case law, was that it adhered too strictly to the definition in Article 1(a) of the W.F.D even if it was not practical to do so.²⁷⁰ He argued that the subjective condition of “intention to discard” was useful when thinking about the waste while it was still within the control of the original producer but Article 1 also recognised its definition of holder that the holder at any one time may not necessarily be the original producer. This is particularly true in the municipal waste system, where the waste will become alienated from the original producer and be taken possession of, separately, by, for example, the waste collection company, the landfill operator, a recycling processing company, a freecycler or waste picker or someone wanting to use it as substitute raw materials: ‘In no ordinary sense is such person “discarding” or “getting rid of” the material. His intention is precisely the opposite.’²⁷¹ Contrary to the decision at first instance, a substance does not stop to being waste simply because the holder intends to put it to a new use but because the substance does not need to continue to be the subject of a recovery or disposal operation. Whether it needs to continue to go through a recovery or disposal operation depends on whether the aims of the W.F.D. have been met – that the harm to human health or the environment has been removed. In other words, discarding is complete when the risk is managed sufficiently. As the case law has indicated, the holder does not remain the same through the process from waste production until disposal or recovery is complete and

²⁷⁰U.K., R (on the application of OSS Group Ltd) v Environment Agency, [2007] EWCA Civ 611, para 55

²⁷¹R (on the application of OSS Group Ltd), para 55

it is arguable that not all of those holders can be said to discard in the ordinary sense. The subjective element of waste serves a purpose but, according to Carnwath LJ, the national court has to make a value judgment on the facts of the particular case in the light of certain objective indicators.²⁷² Thus the court determines the objective element of waste, based on: (1) whether, with reference to Annex 1 and the Waste Catalogue [now the European List of Waste], a substance is a material which has generally 'ceased to be required for their original purpose, normally because they are unsuitable, unwanted or surplus to requirements'; (2) whether a substance is the subject of a disposal or recovery operation mentioned in Annex 2A or B but not necessarily; (3) whether the process of "discarding" is in keeping with the purpose of the W.F.D. and Article 191(2) of Treaty of the Functioning of the European Union;²⁷³ and (4) whether the substance discarded by owners has an economic value. Samuels referred to the judgment of Carnwath L.J. as 'the most enlightened and indeed courageous statement of principle' which rebelled against the vague judicial reasoning in ARCO.²⁷⁴ In a sense, what differentiates "waste" from "by-product" is that the former poses a risk to human health and the environment and the latter does not. As mentioned above, Cheyne argued that discarding was the point at which a substance becomes a risk to

²⁷²R (on the application of OSS Group Ltd), para 56-9

²⁷³Formerly, and at the time of OSS Group case, article 174(2) of the EC Treaty: The purpose of protecting human health and the environment against harmful effects caused by collection, transport, treatment, storage and tipping of waste and complying with Community policy that incorporates the precautionary principle and principle of preventative action.

²⁷⁴ Samuels, 2010, 1392

human health and the environment.²⁷⁵ I would posit, therefore, that discarding is a risk management process and “intention to discard” is the conscious choice to enter that process. Thus, as will be discussed in chapters 6, it could be argued that the separation of residue household waste from recyclable waste, the separation of different types of recyclable waste and the cleaning out of recyclable waste are part of the discarding process are all acts of discarding; without it, waste poses a greater risk to the environment because there is a greater likelihood it will be rejected due to contamination.

In this section, I have sought to outline how the European Court of Justice and the UK courts have attempted to explain how waste is a substance that a person discards. It is clear that the court system have chosen not to interpret it as one would in the ordinary English language sense of “getting rid of”. The problem highlighted in the literature is that they have not provided an alternative definition. Nevertheless, the wording of the W.F.D. indicates that discarding is the production of waste and is the result of a decision by the holder, who is a human being or an organisation. I would argue that discarding is done by either an organisation or a human being within an organisational context or as a member of an organisation. It is the process between the original production of waste as residual material from a preceding process, or the moment it comes into possession, and when it is no longer in possession. This

²⁷⁵Cheyne, 2002, 61

discarding process can include recovery or disposal operations that may need to be carried out to make sure it is not a danger to human health and the environment, but it can also be reused without the need to go through a recovery process. Since discarding does not necessarily result immediately in the physical separation of the waste from the holder, a substance is waste until it ceases to be waste from the holder's perspective, but it does not stop being waste, until it is no longer a risk to human health and the environment. On the one hand, waste is subjectively defined. On the other hand, it does have an objective element. As argued in Chapter 1, discarding comprises the waste hierarchy and thus, as argued in Chapter 3, discarding is a paradigm for the autopoiesis of the social system. I would argue that the reason why the legal system does not explicitly define "discard" is that discarding is how the organisation described the autopoiesis of different social systems' descriptions of the handling of waste in the material environment. Thus discarding from the legal system's perspective is not discarding in the ordinary sense, it is the production of communication, reuse to produce more communication, disposal because it is not usable and recycling in response to irritation by the environment. Waste in the legal system is not discarded in the ordinary sense, but are simply communications that cannot be coded by the legal system. In other words, discarding in the legal system is environmental legal communication and discarding in the organisation is a description for how environmental legal communication is made usable.

Conclusion

In this section, I have sought to describe how organisations develop paradigms for the relationship between social systems and their effect on human behaviour, with reference to specific examples of environmental law. I first argue that environmental law principles are paradigms for the steering by different social systems of the environment. The precautionary principle describes a structural coupling between the scientific system, economic system and legal system in that coding communication as lawful/unlawful depends on the extent that it is scientifically true (certain) and an economic payment that reproduces the capacity to make payments (cost-effective). The polluter pays principle describes a structural coupling between the legal system and economic system and the interpenetration of the ecosystem and the economic system. It is limited, however, in that it can only refer to economic payments that are meant to reduce the capacity to make payments, with a view to incentivising decisions to find more cost-effective solutions. It cannot describe the adoption of positive incentives, where a waste producer benefits. The principle of sovereignty over natural resources describes the interpenetration between the legal system and the ecosystem in that the law creates a right to exploit and duty to protect natural resources. In this regard, it is possible to build consensus in society as the reduction of difference between social systems as a result of organisational decisions. I then turn to the development of the definition of discarding in E.C.J. case law. In different cases, I

showed how the court system developed a definition for discarding by taking into account various social systems - for example, the economic reutilisation or commercial benefit of waste (economic system), the need to go through a technical process to make waste usable (scientific system), the harm to human health (health system), the harm to the environment (scientific system) and the wording of directives and past judgements (decision premises). The problematic with understanding discarding in legal or other social systemic terms is that it is only communication that cannot be coded in accordance with programming within respective social systems. I argue that the legal system or other social systems cannot understand discarding as something done to material waste because that type of discarding occurs outside social systems in the environment. It is a decision (judgement) taken within an organisation context. In Chapter 6, I take this discussion forward and demonstrate the limits of social systems theory in that the autopoiesis of society is ultimately based on psychic systems which cannot be observed.

Chapter 6: Recycling, Reuse and the Limits of Law

In Chapter 5, I argued that the development of E.C.J. case law had defined discarding as a paradigm for the autopoiesis of legal system – that is the waste hierarchy - in that it is understood as communication that can either be coded as lawful or unlawful and marked usable or it is of no concern and marked as waste but can be made usable by external reference to other social systems. Thus, discarding within the legal system is the marking by the legal system of communication that cannot be coded because it is unusable. This differs from discarding as a result of a decision made by the E.C.J. as an organisation that takes different social systems into account, which applies to the separation of material waste from the waste producer. In a sense, the difference between discarding in an immaterial, legal sense and discarding in the ordinary sense of “to get rid of” is bridged by organisational decisions. A substance was defined as waste from the perspective of the current holder if it was discarded. But, once it has been discarded, then, as argued in Chapter 4, it enters the commons, the space in between holders, and is dealt with by different social functions – social systems in Luhmann’s theory. Communication in each social system refers to acts of discarding by holders in the environment as a result of decisions in an organisational context. A substance is reusable if it does not need to go through a recovery operation – that is, it is discarded by the holder to the same holder. Otherwise it is recyclable - that is, it is

discarded by the holder to another holder. (In this respect, a recyclable substance also has to be disposed first.) This distinction is reflected in the 2008 W.F.D.²⁷⁶ Reusing, disposing, recycling are, as argued in Chapter 5, acts of discarding and thus communication. Reuse is 'any operation by which products or components that are not waste are used again for the same purpose for which they were conceived'; they may have to be prepared for reuse by 'checking, cleaning or repairing recovery operations...so that they can be reused without any other pre-processing'. Recycling on the other hand is 'any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes' and 'includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations'. However, in this thesis, as argued in Chapter 1, substances are both material and immaterial, that is communication. Thus, whilst the definitions above refer to reuse and recycling of material waste, substances also include communication produced within social systems. As argued in Chapter 3, for the legal system, reusing, disposal, recycling of material waste is understood as either lawful or unlawful (reusable communication) or it is of no concern (disposable communication) but can be made to be of concern to the legal system (recyclable) by referring to other social systems. Thus, as argued in Chapter 3, the decision to discard is taken by in an

²⁷⁶ E.U., Directive 2008/98/EC, Article 3

organisation context by observing different social systems steering their own waste management processes.

The communicative aspect of reuse is reflected in the relationship between the legal system and the economic system. For example, in *Tombesi* and *Inter-Environmental Wallonie* discussed in Chapter 5, the reuse of a substance in question was described as having an immediate economic benefit, which was not relevant to the legal question of whether it was legally waste or not. It is thus economic communication. As argued in Chapter 6, the legal system is concerned with the reuse of waste only to the extent that it does not need to go through some form of recovery operation; if it does, it is not lawful to reuse it. Both *Tombesi* and *Inter-Environmental Wallonie* concerned the reuse of residue substances, one as substitute manufacturing material and the other as part of the industrial process by the waste producer. As I indicated in chapter 1, I mentioned how my own motivation for doing this study on waste was the implementation of a corporate social responsibility policy in my then place of work – this included the reuse (and the non-use) of printing paper, which to my knowledge did result in lower costs, again economic communication. There is blurring between recycling and reuse in situations where a discarded substance cannot be used straightaway by the waste producer but needs to leave their possession in order to be tested or go through some other basic operation. An example of this would be where household waste electrical and electronic equipment (WEEE) is discarded by making

use of a take-back scheme or giving unwanted goods to reuse shops for resale; in the case of the latter, reuse is described as economic communication. Recycling is more complicated to understand because, from the waste producer's perspective, it is invariably the same as disposal (or being set out for collection to be disposed of by another organisation.) In this chapter, with reference to the United Kingdom, as recycling is not mandatory – at least not now and at least not for waste producers, it can only be considered legal communication only if it is reframed as disposal of waste in the correct manner depending on the substance being disposed of. In this chapter, I argue that reusing waste can be seen as an act based on the “agency” or interpenetration of the waste producer with the economic system in that economics is used to make the waste producer more consciousness and thus more likely to decide to reuse.

But I would posit that perhaps the beauty of reuse and recycling is what appears to be a humorous, random remark that I came across in the course of researching this thesis. One of the premises of Luhmann's theory, as stated in Chapter 3, is that social systems are distinct from psychic systems but communication cannot take place without the interpenetration of psychic systems and social systems. I argue that interpenetration takes place through organisations. This is indicated in an interview given by resident Stuart Miles to a journalist about a scheme in which households in the Royal Borough

of Windsor and Maidenhead (R.B.W.M.) were given points for how much they recycled.

Miles commented on how it affected his children:

‘It’s great. I mean, they’re a tiny bit disappointed because they don’t necessarily get the washing up bottle at the end of the week to turn into a robot but then when we take them to the cinema they are obviously a bit happier.’²⁷⁷

Miles jokes that the loss of resources to make a robot was well compensated by a trip to the cinema that was made possible by points received in exchange for separating recyclable and residual waste. In a sense, how waste was reused came down to the choices of human beings and decisions in an organisational context. In my view, this is an indication that the opportunities made available through reusing and recycling waste is limited only by the capacity for human creativity by taking something that was made for one purpose and using it for the same or a completely different purpose.

In this chapter, through an application of the Luhmannian framework discussed in Chapter 3 to the relationship between the legal system and specific instances of the production of waste in the U.K., I argue that the law is limited in the extent that it can regulate the environment without the resonance of other systems. If, as Luhmann

²⁷⁷Channel 4 News, 2010

would say, the legal system steers society by steering itself, I would add that it cannot steer itself without the resonance of other self-steering systems. Thus, the function of the law is not to do everything itself but to refer to other systems. But the decisions as to how waste is managed are not taken by the law but by organisations taking different social systems into account. In particular, I focus on the following:

- The incentivisation of household recycling through positive and negative reinforcement;
- the debate around the legality of co-mingling versus separation of household waste;
- the extent to which supermarket food waste is caused by laws on date labelling;
- the legal greyness of bin diving, as part of a freegan philosophy, as a solution to the food waste problem.

Incentivisation of household recycling

There appears to be some form of correlation between household recycling and the operation of the legal system. As already indicated throughout this thesis, the essence of the legal system in Luhmann's view was that communication are usable only if they can be coded as lawful or unlawful. If not, then it is rejected as waste and placed in an internal construction of the environment to be accessed when needed. There are perhaps two key pieces of legislation that have had an impact but what is interesting is

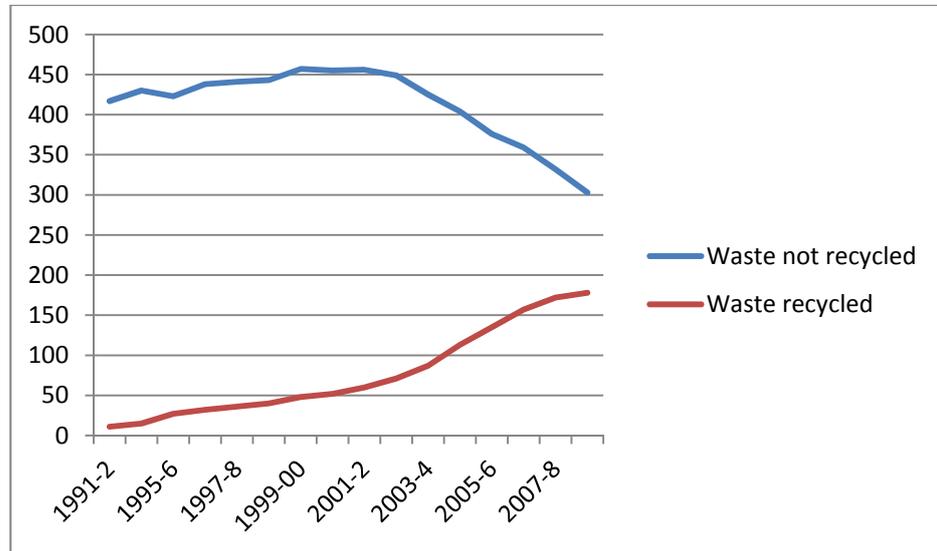
that none of them impose an obligation to recycle on households. Firstly, since 1990, local authorities must provide a household waste collection service.²⁷⁸ Secondly, from 2003, the household collection service must include collection for at least two types of recyclable waste.²⁷⁹ For the local authority as an organisation, as argued in Chapter 3, providing a waste collection service could be seen as an undecidable premise in that it is a legal obligation but it can make decisions as to the specific provision. As argued in Chapter 5, for the local authority, it is a rule that describes the coding of communication within the legal system. However, whether the household as an organisation decides to recycle does not appear to be connected to the legal system. Nevertheless, research from the Department for the Environment, Food and Rural Affairs (Defra) has indicated that, since the year 1991/2, household recycling rates have increased from an incredibly low level of 11kg per person (see Figure 1).

²⁷⁸ United Kingdom, Environment Protection Act 1990, Section 45

²⁷⁹ United Kingdom, Household Waste Recycling Act 2003, Section 1 (inserted after Section 45, Environment Protection Act 1990, as 45A)

Figure 1: Household Waste and Recycling in the UK, 1991-2009²⁸⁰

(Kilograms per person)



Between the years 1991/2 and 2008/9, the overall amount of household waste not recycled per person fell by about 27% from 417kg to 303kg and the amount recycled rose by about 16%. What I find interesting is that there was a more noticeable change in both recyclable and non-recyclable waste volumes that took place in 2002/03, when the requirement for local authorities to provide household recyclable waste collection came into force. In other words, decisions by the household were influenced by local authority decisions in response to the legal system steering itself. It is also worth noting that it was not until about 2002/03 when the amount of waste not recycled stopped increasing and began to fall; this suggests that the decision to recycle may have been influenced by the convenience. Before a household recyclable waste collection service was provided, there had to be a more conscious choice to take waste

²⁸⁰ For data, see Appendix, B1

to a collection facility. As argued in Chapter 3, following Luhmann and Sunstein and Thaler, by making the decision to change the environment, local authorities were able to nudge human beings (in households) towards more desirable behaviour. I would argue that the local authority take into account social systems and their decision-making has an effect on the environment; households make decisions in response to the environment. It could therefore be argued that the steering of the household by the legal system was mediated through, in the first instance, the local authority as an organisation. At the same time, it was mediated through the way the material environment was designed or organised. Whether a 16% increase in recycling over 20 years makes recycling a 'social norm'²⁸¹ is an interesting question, unless it is considered as a repetition of iterations. If it is a norm then, as I argued in Chapter 3, recycling is an undecidable premise of the organisation. It could be argued that household recycling is also affected by governmental and E.U. organisations as well as the economic system, but through the local authority. The U.K. Government has been under an E.U. obligation to reduce the amount of biodegradable municipal waste sent to landfill to 75% of 1995 levels by 2009, 50% of 1995 levels by 2013 and 35% of 1995 levels by 2020, with consequent increase in recycling rates to 50% of household waste by 2020. So far, the U.K. has met all of its targets,²⁸² but, as indicated in Chapter 1, there is concern in the waste management sector the final 2020 target will be missed. This is not just a potential problem for the U.K.; the European Environment Agency has

²⁸¹ Defra, 2011a, para 70

²⁸² Defra, 'Household waste: green and dry recycling'

reported that many E.U. countries will fail to meet its 2020 targets for recycling.²⁸³ In my view, given that all previous targets have always been met, I do not think that this last one will be missed. As I have observed elsewhere, the National Audit Office raised concerns in 2006 that the 2009 and 2013 targets would also be missed, but that report was not able to take into account the incentivisation of waste through the Landfill Allowance Trading Scheme (L.A.T.S.),²⁸⁴ as well the ongoing increases of the Landfill Tax. As argued in Chapter 5, the polluter pays principle is not sufficient on its own to describe the relationship between the legal system and the economic system. Organisational decisions are not only affected by negative incentives. The combined resonance of the economic and legal systems at least seems to have propelled local authorities forward.

It is arguable that households seem to regard positive incentives as rewards for past behaviour rather than an incitement to change behaviour. Etymologically, an incentive, from Late Latin, is something that incites. This would seem to be contradict to the way that the residents interviewed seemed to see incentives. In Halton Borough Council (H.B.C)'s own press release, local resident Clare Hart is quoted as saying: 'It has been really easy to recycle and it is *no different to what we were doing anyway*. The only

²⁸³ European Environment Agency, 'Highest recycling rates in Austria and Germany – but UK and Ireland show fastest increase', <http://www.eea.europa.eu/media/newsreleases/highest-recycling-rates-in-austria>

²⁸⁴ Jeyaraj, 2014, 175

difference is we are now *getting rewarded for it which is great.*²⁸⁵ This suggests that she did not need an incentive to change her behaviour, because she was already recycling, but she still appreciated the recognition. Similarly, in R.B.W.M., the importance of the incentive was also downplayed by residents who were interviewed by journalists. Stuart Miles gave the impression that the incentive was a bonus rather than the purpose for doing something: ‘I would do it because *we believe in that and we got kids so we want to teach them that recycling is good thing* but, at the end of the day, *having a reward doesn’t necessarily help me further but it obviously rewards me for being a better citizen, I suppose.*’²⁸⁶ John Eldridge told London Tonight: ‘Sometimes you don’t like being told what to do and we’ll take offense to that. But if it’s a scheme where the community can join in and is actually earning rewards for yourself or our schools in the area by putting out recycling, “*which we are being asked to do anyway*”, it’s a win-win situation.’²⁸⁷ In a news item about the Greater London Authority’s plans to encourage incentivised recycling in London, one unnamed local resident said that it would be nice, ‘even if it’s just to get a pint of milk free...*it’s something to let you know that we are doing it.* I suppose that we all *like to be praised* for what we do.’²⁸⁸ Of course, the above comments represent the views of a handful of households but it would appear that the main effect of this particular reward scheme is to offer a “slap on the back” or recognition. In chapter 3, I argued that Luhmann had a claim to be an

²⁸⁵ Jeyaraj, 2014, 175

²⁸⁶ Recyclebank, 2010a

²⁸⁷ Recyclebank, 2010b

²⁸⁸ *ibid*

heir to Hegel through the notion of re-cognition, which could be interpreted in Luhmann's theory as the structural coupling between a psychic system and social system, with communication taking place in the space between psychic systems to enable mutual recognition. In this regard, if recycling as an act of discarding is considered normal behaviour, then, as argued in Chapter 3, decision making by the local authority as an organisation nudges psychic systems. More specifically, the decision-making by those within the local authority, in response to the different social systems, would enable the development of society as choice architecture, which would nudge psychic systems. To put it another way, psychic systems are irritated by society as its environment. But, as I argued in Chapter 3 following Sunstein and Thaler, human beings are not only nudged by the choice architecture, they – as the choice architect – also shape the choice architecture. In this respect, the choice architecture as defined by Sunstein and Thaler is what Luhmann referred to as the interpretation of psychic systems and social systems through organisations. Thus, decisions of local authorities have an effect on decisions by households through the environment. Thus, recycling as an act of discarding is arguably normalised using incentives as the organisational paradigm for the resonance of the economic system with the environment. Research from local authorities has indicated that incentives have clearly had an influence on levels of recycling. According to R.B.W.M.'s own data, there was an average increase of 35% in the weight of recyclable material collected over the course of the scheme's pilot period from June 2009 to 2010. The scheme was then rolled-out in full across the

borough, with a recycling rate of 39% and a 71% opt-in rate.²⁸⁹ In H.B.C., 60% of households in the pilot area activated their Recyclebank accounts²⁹⁰ and participating households recycled 60% more waste on average than non-participating households²⁹¹, during the six-month pilot scheme. A more recent survey of H.B.C. residents in 2011 showed that 79% were recycling more frequently since the start of the programme.²⁹² Councillor Rob Polhill, the then leader of H.B.C., has said that the council's approach is 'to reward our residents for their recycling efforts',²⁹³ rather than to incite a change in behaviour. Similarly, Eric Pickles, the then Secretary of State for Communities and Local Government at the time of writing, said: 'The best way to encourage people to recycle is not to punish families, but to *encourage and reward them for going green.*' Caroline Spelman, the then Secretary of State for the Environment, Food and Rural Affairs at the time of writing: 'Windsor and Maidenhead Council have got it right by *rewarding people for voluntarily doing the right thing* not penalising them for doing the wrong thing.'²⁹⁴ Thus local authorities and government departments mediate the relationship between the political and the economic system. There seems to be somewhat of a double entendre about incentives. On the one hand, one system resonates with another system. On the other hand, the second system is irritated by its environment to respond. In that sense, something seen as a reward for a certain action

²⁸⁹IESE/WIN, 2003, 5

²⁹⁰Appendix, B2

²⁹¹ Halton Borough Council., 2010

²⁹² *ibid*

²⁹³ *ibid*

²⁹⁴Department for Communities and Local Government, 2010

can also be seen as an encouragement to act accordingly. For example, both government ministers placed recognition by rewards as a better alternative than punishing a failure to recycle, presumably because the latter denies recognition by not treating like adults²⁹⁵, yet they still emphasised the importance of the amount of waste recycled. I would posit that these are different ways of communicating about the relationship between organisations and human beings – whether one nudges the other or one is irritated by the environment. As a “re-ward”, an incentive affects us and prompts us to respond by recycling waste, which then leads to our structural coupling with society to be recycled.

As an organisational paradigm for the relationship between the economic system and other social system, it could be argued that there is a limit to the nudging or irritating effect of an incentive on human behaviour. Social systems only produce resonance in exceptional circumstances, thus any irritation by the environment is not on a point-for-point “translation” between one system and another. After all, environment irritation can be considered the sum of all resonance produced by systems in the environment – this is what results in society as choice architecture mediated through organisations. Thus, as a form of economic communication, an incentive does not result in everyone signing up. According to R.B.W.M.'s own data after its pilot, 82% of non-activated households (those who did not activate their Recyclebank accounts) presented

²⁹⁵ Pickles, 2010

recycling bins for collection, compared to 88% of activated households.²⁹⁶ The difference in the average weekly amount of recycling per household was almost 2kg.²⁹⁷ H.B.C.'s pilot saw 60% of participating households activate their accounts.²⁹⁸ However, not everyone who opted-in to receive incentives ended up recycling, whilst many people who did not opt-in to receive incentives still recycled. Defra carried out its own pilot study of local authority incentive schemes in England in 2005-2006, with a much broader range of incentives than personal rewards, comprising community league tables, pledges leading to school equipment, lottery style prize draws, cash rewards and discount vouchers.²⁹⁹ 81% of the trials saw a 'positive, attributable impact' in the increase of awareness of recycling, 17% did not record significant awareness of the incentive and thus no impact on recycling tonnage and 57% has a 'positive, attributable impact' in increasing tonnage of recycling.³⁰⁰ It is arguable that while incentives can contribute to an increase in recycling volumes, but its main impact seems to be on consciousness. Indeed, Defra made the connection between awareness and action. As argued in Chapter 3, the transformation of consciousness into communication and vice versa takes place through an environmental medium that is organised in a particular way; this organisation is based on human and social systemic understanding of the environment. Incentives as a form of economic

²⁹⁶ IESE/WIN, 2011, 6

²⁹⁷ Ibid;

²⁹⁸ Appendix, B2

²⁹⁹ AEA Technology, 2006, iii

³⁰⁰ *ibid*, iv

communication are an aid to recognition in that the economic system's resonance is just part of the total resonance of society with human beings. The offer of a reward arguably empowers the structural coupling between psychic systems and social systems. Thus, with regard to the aforementioned comments from R.B.W.M. and H.B.C. residents, psychic systems respond to irritation by a number of factors, including incentives, thus they saw it as a pat on the back for good performance. On the other hand, politicians saw it as an encouragement to perform in that the economic system, mediated through organisations, resulted in resonance within psychic systems.

Since the effect of an incentive is a matter of irritation or resonance, it could be argued that the limit of the incentive, both in terms of amount of waste presented for recycling and people actually redeeming their rewards, could be down to the size of the incentive. As a form of economic communication, it was meant to reproduce the capacity to make further payments. But this capacity can only be reproduced depending on how much is actually offered. In evidence to the Greater London Authority (G.L.A.)'s evaluation of incentive schemes, R.B.W.M. said that 'participation in the scheme has helped *inform residents of the economic value of recycling* and stimulate the local economy',³⁰¹ i.e. by producing usable communication, the autopoiesis of the economic system is maintained. Certainly, both R.B.W.M. and H.B.C. indicated to their residents that the aim of incentivisation was to increase their

³⁰¹ Greater London Assembly, 2011, para 3.10

recycling rates, divert waste from landfill and save money.³⁰² But according to behavioural research, the level of the incentive should not be too low to be ignored but not too high to have perverse consequences, such that it becomes the reason why the household responds to its environment by recycling.³⁰³ Other research indicates that people always acclimatise to financial incentives, so they have to at least keep being offered, if not increased, to keep people motivated.³⁰⁴ As argued in Chapter 3 and also earlier in this section, one can only say that the effect will be subsumed into the cumulative resonance of social systems. There were no doubt other non-economic factors that kept a limit on the effective price that was paid to household for recyclable waste. The rewards under the Recyclebank schemes are explicitly funded by the savings that the respective local authority makes from not having to pay landfill tax, rather than, say, increasing council tax.³⁰⁵ As I argue in later in this chapter, recycling is an economic communication that reproduces the capacity to produce further payments. But the limits on the economic system's ability to do this will probably be impacted by funding for council services in general. R.B.W.M. expected their scheme to be cost-neutral over two years, but as it was 'pioneering project', all financial projections were based on a sensitivity analysis using a 25% increase factor.³⁰⁶ This suggests the scheme at least early on was operating at a loss. But it does raise

³⁰² IESE/WIN, 2011, 9; Appendix B, 3; R.B.W.M., 'Recycling'; H.B.C., 'Recycling, rubbish waste'

³⁰³ Skinner, 2002, 33-4: Skinner argues that behaviour generated by positive reinforcement can have both deferred aversive conditions and consequences.

³⁰⁴ Greater London Assembly, 2011, para 4.10

³⁰⁵ IESE/WIN, 2011, 4; Appendix B, 3

³⁰⁶ *ibid*, 4

questions about the choice of a reward-only scheme. An alternative funding structure, ‘a waste reduction scheme’, was put forward by the Labour government in the Climate Change Act 2008.³⁰⁷ The legislative provisions would have eventually gave powers to local authorities to charge for waste collection, based on how much residual waste a household produced, in order to specifically fund incentives for recycling. The economic language of “charging” and “waste reduction” indicates a further development of the structural coupling between the legal system and the economic system; not only does the council pay for recyclables but the household has to pay for the removal of residual waste. It therefore distinguishes between the different waste producers in the waste and recycling system. This would be a straight application of the polluter pays principle, as discussed in Chapter 5. Waste reduction schemes had to be financially self-sustaining. However, while a waste reduction scheme may have made it easier to reproduce the capacity to make payments for local authorities, only one local authority, Bristol City Council, actually submitted a proposal to the government and they planned not to charge for residual waste collection and to fund incentives from landfill tax savings, like the Recyclebank scheme, although it recognised that this was not sufficient.³⁰⁸ Indeed, it predicted that, without central government funding, there would have been a shortfall of £30 million over three

³⁰⁷The powers were brought in under Climate Change Act 2008, sections 71-75 & Schedule 2AA and were subject to the completion of five government-approved, local authority pilots before the Secretary of State made the powers more generally available. However, the respective provisions have since been repealed under Localism Act 2011, section 237 & Schedule 25, Part 8 by the Coalition government, partly because the take-up to run pilots was low and partly because of the Conservative Party’s stance in Opposition towards “bin taxes”.

³⁰⁸ Bristol City Council, 2010, para 2.7

financial years.³⁰⁹ Since local authorities do not have endless resources, the amount of funding needed to fund an incentive scheme becomes significant when a central government is trying to implement significant reductions in spending. It is therefore difficult to argue that decision by more local authorities not to submit proposals, the decision by Bristol City Council not to run a scheme that charges for household waste and the subsequent repeal of the specific provisions in the Climate Change Act that would have given the councils the power to charge has not been without political resonance, even if it did not make sense economically. It is an indication that the economic and political systems understood the provision of waste collection differently, one on the basis of the reproduction of payments and the other on the basis of gaining or losing power.

It is perhaps not surprising that local authorities would be spanning the fissure between legal, economic and political systems, and this can be seen in the use of negative incentives to control waste production by household. Some local authorities in London seem to have opted to communicate (in the ordinary sense) as if recycling was something compulsory and thus obligated by law, warning of the issuance of fixed penalty notices under section 46 of the Environment Protection Act 1990. It should be noted that this was not a change in the law but a reaffirmation of the existing law - technically, it is not compulsory in the sense of legal binary coding; what the local

³⁰⁹ Bristol City Council, 2010, para 6

authorities were referring to was a provision that enabled fining where waste is not disposed of correctly. The local authority as an organisation was able to take the legal system and the economic system into account when making decisions. That is, if recyclable waste is not placed in the correct receptacle, it has not been disposed of correctly; the logic followed that putting recyclable waste (just as residual waste) in the correct receptacle was compulsory. Based on the local authority's own data, such a policy seems to have been just as successful as the reward-only schemes discussed earlier. London Borough of Harrow claimed that dry recycling rates increased by 50% in tonnage in the first year and London Borough of Barnet saw an increase of 28%.

What was interesting however was that much of the increase was put down to an education and public awareness campaign – that is, communications produced by the education system observing the legal system through the organisation - that mentioned that recycling was compulsory. Of course, there may well have been political reasons for this as well. According to local authorities' own data, even initial offenders came into line after being issued with the first warning.³¹⁰ Other councils, such Islington Borough Council and Lambeth Borough Council, in my view, seemed to take a tone of reassurance in their literature to residents by emphasising that only repeat offenders, who had received a number of warnings, would be fined, not those who had made an honest mistake or for whatever reason have been unable to put

³¹⁰ Letsrecycle.com, 2008

their recycling bins out a particular week. The knowledge of the possibility of punishment seems to have been an irritant; according to my own requests for information,³¹¹ most of the local authorities above had not even issued a warning letter, none had gone so far as to issue a fixed penalty notice, let alone prosecute and Harrow council said that recycling was compulsory but not enforced.³¹² Thus, as I have argued already, the local authority as an organisation took the way a legal system understands something and integrated it with economic, political and educational understanding in order to make its own decisions as to policy. Originally, under section 46 of the 1990 Act, there were different intensity levels of financial penalty, starting with a fixed penalty notice to a maximum £1000 fine and criminal conviction. The intensity was delayed by a long administrative and legal process and by the local authorities' own engagement with residents. The G.L.A., in its evaluation of compulsory schemes, noted that 'boroughs are keen to soften the apparent severity of the scheme', working with residents through communications and outreach programmes before and after introducing a scheme.³¹³ As a result, 'no-one has as yet been fined under the compulsory model and the process of prosecution remains untested'.³¹⁴ In my view, this is a positive situation to be in; after all, it is arguably better for people to recycle without too much resistance and associated costs. Yet, this means that, from the legal system's perspective, recycling as an act of disposing waste

³¹¹ See Appendix, B4-B8

³¹² *ibid*

³¹³ Greater London Assembly, 2011, para 3.16

³¹⁴ *ibid*, para 4.13

properly is waste and is only categorised as unlawful by reference to the economic and political system via the organisation of the local authority. Instead, for local authorities, it is lawful to issue a penalty notice for not disposing of waste properly. It is, in this respect, that household recycling becomes a social norm, as argued in Chapter 3, through the decisions by households in response to the environment of undecidable premises, which are formed from the history of past decisions. I do not think this process of norm forming is undermined by the resonance of the political system with the legal system with regards to the government amending the section 46 power in order to cap the maximum fine at £100 and to remove the prospect of criminal prosecution, so that a fine is only a civil dispute between two private parties, the local authority and the household. In a sense, then, just as the relationship between social systems is contextualised within organisations in the environment, the relationship between different organisations is contextualised within social systems in the environment. In Chapter 5, I referred to Philippopoulos-Mihalopoulos' position that there is no one centre in society. Following Philippopoulos-Mihalopoulos, I would argue that not only are organisations at the centre of a society of social systems but also that social systems are at the centre of a society of organisations. This can be seen in the amendment of the section 46 provision so that fines are only imposed on households who are causing 'harm to local amenity'³¹⁵, that is those who 'behave in a

³¹⁵Defra, 2012a

way which reduces the quality of their neighbours' surrounding³¹⁶ or fail to recognise their neighbours. On the one hand, organisations use the legal and economic system to shape the environment of human beings. On the other hand, with reference to Paterson's reading of Weber, as discussed in Chapter 3, it could be said that the economic system is instrumentalised by the legal system. In this respect, instrumentalisation is another form of steering in the Luhmannian sense. At the same time, given that a change in the law was due to a Conservative-led government that was predisposed to a smaller state, it could be argued that both the legal and economic system was instrumentalised by the political system. But, fundamentally, it could be argued there is a focus on shaping the material environment in the sense ensuring households do not cause inconvenience to others.

Co-mingling and Separation in the Household System

Since all households only need to put the bins out and do it without causing an inconvenience to others, it is not clear what needs to be remembered. In Chapter 3, I argued, with reference to Philippopoulos-Mihalopoulos, that social systems consciously remember communication that can be coded in according with its programming and unconsciously remember (forget) what it cannot code – or at least, it can only consciously remember what it cannot code by reference to other social

³¹⁶Defra, 2012b, 4

systems. As argued in Chapters 4, the forgetting of waste is a necessary part in the autopoiesis of social systems in that it maintains the integrity of boundaries; organisations in this sense act as filters or gatekeepers between human beings and social systems. Without the organisation, it could be argued that the psychic systems and social systems become paralysed from too much irritation by the environment. As Philippopoulos-Mihalopoulos argued in relation to the urban system, the household as an organisation must operate using a process of selective with regards to what it holds onto and what it discards. Forgetting is just as normal, i.e. a norm projecting an expectation, for the household as remembering. The discard of non-selected communication leads to cognitive evolution. 'Waste/the past is a function of the system: rather than having a meaning and a truth determined once and for all by its status as event, its meaning and its truth are constituted retroactively and repeatedly.'³¹⁷ It therefore makes sense that the household should be able to forget about the waste, once it has put it into the brown or green bin or otherwise appropriate receptacle and why recyclables are legally waste. The household will not actually be involved in the actual recycling process. On the other hand, by forgetting about waste and trusting other organisations such as the local authority to collect and deal with it appropriately, what we present for recycling in the present may still be ending up as disposed waste in the future. This non-recycling of recyclables has been documented by *The Guardian*:

³¹⁷Philippopoulos-Mihalopoulos, 2007, 197

That's very much in the lap of the gods, or, more accurately, the local authorities. Hopefully their recyclers will pick up the green box from the side of the road and place our carefully divided waste into separate compartments. Alternatively, however, they may chuck it into one big container with everyone else's rubbish and sort the whole thing out later.³¹⁸

Local authority and companies involved in the waste collection and recycling process, as part of society, have a quasi-godlike status – as Calvino put in Chapter 2, like angels - as the processing of waste is beyond the capability of the household. As organisations, they can operate in ways that households cannot operate. But, if psychic systems and social systems are structurally coupled, then the failure to make usable in society what has been categorised as waste outside society could be seen as an undermining of that coupling:

It's the ultimate eco betrayal: Camden householders painstakingly rinsing out pet-food cans and agonising over the correct receptacle for co-mingled rubbish (e.g. cardboard boxes with plasticised innards) only to discover that their carefully sorted recycling has a one-way ticket to China. This unhappy incident is not isolated. The volume of packaging waste in transit every year from the UK

³¹⁸ Robins, 2007

- most of it to Asia - will soon pass the 1.5m tonnes mark. Who knows where your rubbish goes to be recycled?...Some local authorities choose to play dumb, others simply don't know - today's paper trail, controlled by a handful of huge waste companies, is as complex as it is exotic. There are those, admittedly apocryphal, tales of UK holidaymakers finding the envelopes they sent for recycling fluttering around Indonesian landfills.³¹⁹

According to Siegle, the local authority has been cast down from its heavenly throne and knows as much as the ordinary household, laying the blame at a process of globalisation and increased distance between the household and the landfill. In other words, in a globalised society, individual systems within it know as much as about the autopoiesis of society as other systems outside it. Indeed, the *Daily Mail* has reported that, despite exporters being legally obliged to ensure waste is recycled once it reaches another country, the government department, Defra, as an organisation, has admitted that 'what happens to the 12 million tons of "green" waste shipped abroad every year is largely beyond their control'.³²⁰ Defra and the recycling industry have since challenged the *Daily Mail* story,³²¹ but it highlights what is perceived as the dominant characteristic of Luhmann's description of society: its inherent uncertainty as to what happens in the environment. In Chapter 4, I argued that communications had to be

³¹⁹Siegle, 2006

³²⁰ Doughty, 2013

³²¹ Date, 2013

enclosed within social systems as common property systems so that a society that was open to all could be managed or regulated. But if it is the case that social systems and organisations are limited in their capacity to regulate the social environment because they can only regulate themselves, then perhaps some form of privatisation of regulation was also needed to regulate society as the waste of psychic system.

As indicated in Chapter 3, in the age of the Anthropocene, psychic systems already have a position of privilege over both society and the ecosystem. They can remember to do more through their relationship with the environment. Social systems can only enable households to be more conscious about how it handles waste in accordance with their relationship with other social systems mediated through organisations. And human beings interpenetrate social systems as members of organisations or organisational contexts. Thus, as indicated by the premise of Luhmann's theory, the uncertainty of the operation of society is in the impossibility of observing human consciousness; this is the realm of what Sunstein and Thaler referred to as freedom of choice. The point that Siegle was making was that there is no point in going through the process of washing out packaging and separating recyclable waste into one or more than one receptacles only for it to be treated in the same way as residual waste, i.e. if the systems of society did not also operate accordingly.

There is thus a paradox in the waste management process in that society cannot communicate as expected without the household being enabled to operate as well.

Co-mingling, otherwise known as mixed dry recycling, where more than one type of recyclable waste is placed in the same receptacle,³²² begins to raise the question of how much consciousness to produce about recycling. On the one hand, all households already need to remember to separate recyclables from residual waste, so it is arguably more convenient to the household if all recyclables could be placed in one bin. However, an opposing argument would be that co-mingling is not as convenient as it is portrayed if one considers that the household is an organisation that is part of a larger waste system or, as I have argued in chapter 4, that society is a commons made up of common property systems that relate to each through institutional or organisational arrangements. There are organisations, namely recycling processing companies, whose own productive labour depends on the quality of the waste received. In research covering three years prior to 2009 and ‘in the light of the growing debate’, the Waste Resources Action Programme (WRAP) argued that kerbside sorting, where the recyclable waste is sorted by the dustmen at the point of collection (the kerb), produces both ‘the best quality material and, when total costs are taken into account, is cheaper for council tax payers’.³²³ However, as an executive agency of Defra, it makes

³²² It should be noted that the RecycleBank schemes involved a co-mingled collection, and this would no doubt influence the amount of waste presented for recycling.

³²³ Waste Resources Action Programme, 2009: ‘...the evidence is clear that the quality of the materials recovered for recycling is affected by the way they are collected...Kerbside sorted materials are consistently good quality with less than 1% being rejected. Co-mingled collections are subject to higher contamination rates and have higher levels of rejection. Reprocessors of recycled materials in the UK are currently struggling to find enough good quality material for their needs from UK sources despite the volumes being exported. As a result they are importing some material...the claim that co-mingled collections help boost recycling rates does not tell the whole story. What is important is not the type of

sense that WRAP would distinguish between kerbside sorting and co-mingling, because the methods are different to a degree. In my view, from the household perspective, what tends to be called kerbside sorting is still co-mingling. Kerbside sorting may be more efficient, because it changes how the waste collection company collects waste; but it still involves the same level of forgetting by the household as co-mingling. However, kerbside sorting may be a way of reminding households to recycle, by dealing with psychological concerns and loss of trust around rejected recyclables, because it takes place at the point of encounter between psychic systems and society (the kerb). Although kerbside sorting is a form of co-mingling, it is arguable that 'if materials are separated at the kerbside people are more confident that they will be recycled efficiently' and so become 'more likely to recycle their rubbish'.³²⁴ It recreates or reaffirms the relationship between the household and other parts of the waste and recycling network. On the other hand, separation at source, where recyclables are separated into separate bins by the household before being presented for collection, perhaps deals with the issues of trust between the household and the rest of the network by calling on the household to be more responsible, by being able to respond more consciously to resonance from society.³²⁵ Perhaps, there is recognition that the waste system is limited or that it is able to do more.

collection but the size of the containers householders are given for their recycling, and how often they are collected.'

³²⁴ Friends of the Earth, 2009, 6

³²⁵ *ibid*, 7: Commenting on a pilot set up by Somerset Waste Partnership, in which it was found that the annual amount of food waste per household (which was collected separately from residual waste

It is not surprising, therefore, that there seems to be quite a big divide between those who support co-mingling and those who prefer separation at source. It could be argued that the law at E.U. and national level, relating to collection methods, recognises its own limitation in regulating waste. On the one hand, the U.K. is required to 'set up separate collections of waste', primarily paper, metal, plastic and glass, in order to 'promote high quality recycling'; this is subject to what is 'practicable and appropriate to meet the necessary quality standards for the relevant sectors'.³²⁶ In a sense, the production of legal communication is constrained by environmental irritation. Furthermore, the E.U. directive sets a target for the implementation of separate collections of paper, metal, plastic and glass by 2015. Until recently, the transposed U.K. legislation specifically stated that co-mingling, where paper, metal or glass, are collected 'together with each other but separately from other waste or waste streams intended for recycling with a view to subsequent separation', counts as a 'form of separate collection'.³²⁷ In this form, the directive does not in itself prohibit co-mingling, but the emphasis on quality suggests that it is not the preferred option. In other words, as long as the recyclable waste is separated from residual waste at some point, then the point of separation is not important. I think that this interpretation of

because the latter was collected fortnightly) was halved, Friends of the Earth said that 'either...food collection is making them think more carefully about waste, or...people are composting more at home'.

³²⁶E.U., Directive 2008/98/EC; The Waste (England and Wales) Regulations 2011, Article 11

³²⁷ Waste Regulations 2011, Regulation 13(2)

the directive is linguistically consistent and in accordance with Defra's own understanding:

'During negotiation of the [Waste Framework] Directive, the U.K. understood it was not the intention of the European Commission to mandate a particular system for the collection of recycling across all Member States. The Directive expressed a preference for separate collection of recycling, as the means more likely to achieve the purpose of the directive.

The preference for separate collection does not mean that separation at subsequent point (i.e. what can generally be referred to as co-mingled collection) is not permissible under the Directive. The preference for separate collection of recycling is predicated on the basis that this will promote higher quality recycling, but other forms of collection are permissible provided they similarly deliver this purpose.'³²⁸

The problem is, however, that this understanding of the directive – in particular, the meaning of 'separate' collection - does not seem to be universally shared by all stakeholders within the waste and recycling sector and this led to a judicial

³²⁸ Defra, 2012c, paras 3.3 -3.4

review,³²⁹ which itself was not universally supported³³⁰. However, from the public announcements of the applicant, the Campaign for Real Recycling (C.R.R.),³³¹ it also seems that the case was not so much about the interpretation of the law but the imposition or abolition of a particular collection method across the country.³³² C.R.R. argued, somewhat paternalistically, that ‘it remains *our contention that the UK will ultimately benefit* much from embracing not just the *letter of this Directive, but the spirit* of it as well’.³³³ In other words, the questions about the legality of the transposition of the directive are a legal construction of a political argument; C.R.R. just did not think co-mingling is the right option. It is arguable that their argument ignores the boundaries of the legal system, and instead is coming from the more purposive approach of the political system. There is then some resonance with the economic system as well, with C.R.R. pointing to ‘a new, green industry and jobs’ and ‘an opportunity to choose a path that maximises the value of its [the U.K.’s] waste as a resource’.³³⁴ This is consistent with the wider discussion about the green economy or

³²⁹ The government’s consultation on clearer amendments to the Waste (England and Wales) Regulations 2011 followed the adjournment of the judicial review brought by The Campaign for Real Recycling.

³³⁰ Hunt, 2011; Resource, ‘Comingled controversy’

³³¹ The Campaign for Real Recycling is a group of eco-campaigners such as Friends of the Earth, waste reproprocessors and community groups, so it can be considered a representative voice of a section of society.

³³² Defra, 2012c, para 4.5: ‘It is the view of the Government of England that there are inherent difficulties in attempting to impose a one size fits all solution on local authorities, and that local authorities themselves are best placed to determine the most appropriate waste collection system to use in their local area, working with their residents. This is why the Government in England considers that decisions made at a local level to reflect the circumstances are most likely to deliver the best outcome.’

³³³ Campaign for Real Recycling, 2011

³³⁴ *ibid*

zero waste economy. The problematic is that it seems to favour a hierarchical society dominated by the political system or economic system when even they operate within boundaries.

Therefore, this “dispute” was ultimately about the resonance between the legal system and its environment. But through their autopoiesis, the legal system is able to steer itself so as to reduce the difference between itself and its environment. The amended regulation no longer explicitly refers to co-mingled collections as a form of separate collection but emphasise that there is a duty for local authorities to collect paper, glass, metals and plastic separately by 2015, unless it is not practical or necessary (as defined in the Waste Framework Directive).³³⁵ However, the directive and legislation does also allow for the general presumption to be overlooked if the appropriate quality standards can be met through a co-mingled collection. It seems that the only change in the law was in its communication and thus the way it resonates with the environment. In Luhmann’s theory, the law does not change dramatically but recognises the voice of the environment. Whether the C.R.R. were right to argue for the imposition of separation at source is not really the issue, and cannot be described from the perspective of social systems anyway. It was an indication that there was a difference between different systems which needed to be reduced, whilst still maintaining the distinctive identity of systems. Indeed, perhaps separation-at-source

³³⁵ U.K., The Waste (England and Wales) (Amendment) Regulations 2012

helps the household recognise that it is part of the waste system. Therefore, it could be argued that C.R.R. was acting in accordance with the autopoiesis of society and it was perhaps the government as an organisation engaging with the political system that was undermining the structural coupling between social systems and human beings, through its support for co-mingling.

Retail Food Waste and the Economics of Reuse

From a social systems theoretical perspective, the reuse of waste can be understood as an economic act. For the economic system, the reuse of waste is an act of non-payment that reproduces the capacity to make future payments. If one reuses an empty bottle by refilling it with water, one does not have to spend money on a new bottle of water and can thus spend it elsewhere. It seems contrary to Luhmann's economic theory for non-payments to lead to payments: 'Only someone who has a certain amount of money and can part with it is in a position to pay because payment is the transformation of having into not having. The same is true, conversely, from the receiver's point of view. The code is the condition of the system's being set in motion and keeping it going and for the constitution of the system by events, in this case – payments.'³³⁶ However, it could also be argued that an act of non-payment in one part of the economic system enables a payment to be made in another part of the system,

³³⁶Luhmann, 1989, 52-3

either by the same person on something else or by a different person on the same thing. Indeed, it could be argued further that the reuse of waste supports a capitalist economy to the extent that non-payment connects payments to the reproduction of the capacity to make future payments.³³⁷ According to the Local Government Association, there was nearly 615,000 tonnes of goods that went to landfill or was incinerated that could be repaired, resold or donated and it estimated that the goods represent about a total resale value of between £375 and £435 million.³³⁸ While the autopoiesis of the economic system depends on the production of payments as communication, without which the economic system ceases to be distinct from the environment, it is arguable that, as a commons system, an excess of payments beyond sustainable limits reduces the capacity to make future payments generally.³³⁹ Thus, reuse is a paradigm for 'capitalistic self-control'³⁴⁰ in the same way as saving (as opposed to spending) money. Thinking about recycling as delayed reuse, it could be argued that there is 'a time lapse that has to be bridged between any payments and the reproduction of the capacity to make further payments',³⁴¹ but the same could also be said about ordinary reuse in relation to use. In a sense, both reuse and

³³⁷ Luhmann, 1989, 55

³³⁸ Local Government Association, 'Routes to reuse: Maximising value from reused materials', 6;

³³⁹ In a recent working paper, *Why does financial sector growth crowd out real economic growth*, published by the Bank of International Settlements, Stephen Cecchetti and Enisse Kharroubi (2015) have argued that unsustainable growth in the financial sector prevents real growth in the economy by making more lending available to low productivity projects and competing with other sectors for high-skilled workers. This was a follow-up to a 2012 paper, *Reassessing the impact of finance on growth*, by the same authors. See also: Richard Dobbs, Susan Lund, Jonathan Woetzel and Mina Mutafchieva, *Debt and (not much) deleveraging*, McKinsey Global Institute, February 2015.

³⁴⁰ Luhmann, 1989, 55

³⁴¹ Luhmann, 1989, 55

recycling are paradigms for the bridge between payments. On the one hand, the reuse of waste disrupts the capitalist economy by not producing payment. On the other hand, it is that very disruption that maintains capitalism. Without the disruption to payments, the capacity to make future payments is not without some sort of environmental irritation. In this regard, reuse could be viewed as taking place in response to the application of the polluter pays principle, which, as argued in Chapter 5, is a paradigm for a particular relationship between the legal system and the economic system, as well as the ecosystem; where legal understanding results in the loss of money to the polluter, reusing waste is an alternative option that can be selected by the organisation. In the economic system, this is manifest in the distinction between the polluter paying for pollution or someone else having to pay through. In other words, the inability of the economic system to maintain the capacity to reproduce payments resonates with other social systems, particularly the legal system and the political system, to be responsible in that they are able to respond.

Despite the epithet “waste” attached to food, that is wasted food, it is arguable that what is called food waste can still be distinguished on the basis of payment or non-payment. The Institute of Mechanical Engineers (IMECHE) has estimated that of around four billion metric tonnes of food produced globally every year, 30-50% ‘never reaches a human stomach’.³⁴² In a developed country such as the U.K., food waste is

³⁴² Institute of Mechanical Engineers, 2013, 2

primarily created by the supermarket and consumers, as a result of consumer culture.³⁴³ In this respect, the production of food waste is a result of human choice, but this is mediated through organisations and produces resonance within social systems. Stringent product grading standards – a combination of regulation, customer demand and organisational requirement - has resulted in up to 40% of total yields in the UK being rejected by supermarkets.³⁴⁴ At the other end, the use of sales promotions not only reproduces the supermarket’s capacity to make further payments through increased sales but also reproduces the consumer’s capacity to make further payments in other parts of the economic system, at least in theory. To put a figure on it, it has been estimated that ‘collectively, 38 metric tonnes of food and drink enter U.K. homes each year, of which nearly a fifth is discarded’, which is equivalent to an approximately £12bn annual food surplus,³⁴⁵ although the House of Commons put it closer to 15 million tonnes with households responsible for 63% of it and food waste costing each household up to £400 a year.³⁴⁶ Across the E.U., 90 million tonnes of food waste is wasted each year, with 40% being lost at retail and consumer level and 60% before food reaches supermarket shelves. In this respect, food waste is not waste from the perspective of the economic system, as it has already been paid for. The seller of the

³⁴³ IMECHE identified that the creation of food waste is typically down to the supermarket’s rejection of ‘entire crops of perfectly edible fruit and vegetables at the farm because they do not meet exacting marketing standards for their physical characteristics’ as well as the disposal in the home of perishable foods as a result of sales promotions that encourage the purchase of excessive quantities, as characterised by the “weekly shop” (2013, 3).

³⁴⁴ Bond and others, 2013, 10

³⁴⁵ *ibid*, 12; House of Commons, 2015, para 32

³⁴⁶ House of Commons, 2014a

food has already received the money and has, on a simple level, used it to produce more payments. That the food that was the subject of communication was never used can be coded by the economic system – the disposal of food waste is non-economic, a non-payment, in that it is a payment that does not reproduce the capacity to make further payments. In that respect, the production of food waste is only economic waste where it cannot be understood in terms of payment or non-payment, for example whether something is lawful or unlawful.

Since food waste is represented by unproductive payments, economic communication comes with inherent risks. By risk, I mean the inability of predicting future behaviour: 'For in the case of risks we are not dealing with a future for which we can on our present determine how others are to behave in future situations.'³⁴⁷ Since future behaviour cannot be predicted, a decision that is right in the present – to buy a certain amount of food - may not necessarily be right in the future. The risk is caused by the creation of an economic norm in response to regulatory action in the legal system; as I argued in Chapter 3, the legal system steers the waste management process by steering itself. The economic norm binds time, projecting an expectation on the future, without really knowing how those it affects will respond. That became the problem with date labelling. It was always an economic and regulatory response to societal anxieties (irritation), as a result of concerns about freshness following new food

³⁴⁷Luhmann, 2005, 59

packaging and transport technologies.³⁴⁸ Richard Milne has observed that date labelling began as colour codes for the purpose of stock management and was gradually used to provide information in response to customer demand and that the food industry was concerned that uncoded and mandatory date labelling would change the way customers selected their shopping – ‘an unsought-for consequence of the exercise of informed consumer choice’; he also noted that concerns were raised in government reports ‘about wastage and consumer understanding’ and in Parliament about best before dates leading to over-cautious labelling by manufacturers out of fear of legal risks.³⁴⁹ More recently, the Waste Resources Actions Programme has found that date labels were cited as the trigger for disposal of 16% of avoidable food waste (about 660,000 tonnes), although 48% (2 million tonnes) was cited as not being used in time, but changing consumer behaviour, such as planning meals, making shopping lists, not cooking too much, freezing food and using leftovers helped to reduce waste.³⁵⁰ Currently manufacturers have to include “use by”³⁵¹ and “best before”³⁵² dates depending on the nature of the product, but as a form of legal communication about food quality and safety, it does not provide a clear description. For example, according to the Food Standards Agency, consumption after the “use by”

³⁴⁸Milne, 2013, 86

³⁴⁹ *ibid*, 90

³⁵⁰Waste Resources Action Programme, 2014

³⁵¹ A “use by” date is ‘the date up to and including which the food, if properly stored, is recommended for use’ that has to be stated on packaging for perishable goods. (Food Regulations 1996, Regulation 21).

³⁵² A “best before date” is a legal requirement to indicate the ‘minimum durability’ for which food can ‘reasonably be expected to retain its specific properties if properly stored’ (Food Regulations 1996, Regulation 20)

date poses only a risk of food poisoning,³⁵³ so to sell food past that date is not technically unlawful; but under laws relating to tort, it becomes unlawful if the food causes food poisoning. Although the general advice seems to be that one should not eat food after the “use by” date,³⁵⁴ this advice is starting to be questioned.³⁵⁵ Thus, selling food after the “use by” date becomes a problem of time binding – a decision taken to sell the food may not be unlawful at the time of sale, but since the effect of on the buyer cannot be predicted for sure, it may well come to be seen as unlawful by a court or administrative officials. If it is found to be unlawful, then it is possible that the retailer could be fined or made to pay compensation to the claimant, which would reduce the capacity to make future payments. There is no risk of legal action or health concerns with selling food after the “best before” date, which is about a product’s ‘optimum condition’.³⁵⁶ But, it may become a less economic decision to try to sell it, as the reduced marketability reduces the capacity to produce further payments.

Concerns about the environmental impact of food waste produced by retailers, particularly supermarkets, have given rise in developed countries to the phenomenon of freeganism. The majority of the literature on freeganism is concerned with the phenomenon outside of Europe. According to the activist website, freegan.info,

³⁵³ Food Standards Agency, ‘The Food Labelling Regulations 1996: Guidance Notes’, <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/Fguidnot1.pdf>

³⁵⁴ NHS Choices, ‘Food labelling terms’, <http://www.nhs.uk/Livewell/Goodfood/Pages/food-labelling-terms.aspx>; Dillner, 2012

³⁵⁵ Blythmann, 2013

³⁵⁶ Food Standards Agency, ‘The Food Labelling Regulations 1996: Guidance Notes’, supra

'freegans are people who employ alternative strategies for living based on limited participation in the conventional economy and minimum consumption of resources'.³⁵⁷ Freeganism is often characterised by the practice of dumpster or bin diving, which, as the phrase suggests, involves taking usable products out of bins; the academic literature on freeganism to which I refer in this section acknowledged that freeganism is driven largely, but not exclusively, by an anti-consumerist, maybe anti-capitalist, philosophy that also covers acts such as bartering, sharing, charity work and redistribution. In a netnographic analysis of major Freegan online discussion forums, Pentina and Amos found that there were two distinct identities: those who participated as part of a 'market-defying radical consumer resistance' and those who participated in 'market-mediated anti-consumption activities'.³⁵⁸ In a study based on participant observation and interviews in Montreal, Vinegar, Parker and McCourt found that not everyone who engaged in bin diving associated themselves with an anti-consumerist philosophy.³⁵⁹ In contrast to those who were motivated by a philosophy, who were relatively food-secure, there were those who were food insecure. Thus, whatever the reason for engaging in freegan activity, bin diving can be considered as a form of economic non-payment. I would point out that Luhmann's theory understands the economic system as capitalist to the extent that economic communications refer to either acts of payment or non-payment, so it is difficult to

³⁵⁷Freegan info, www.freegan.info

³⁵⁸Pentina and Amos, 2011, 1774

³⁵⁹ Vinegar, Parker and Mccourt, 2014

describe freeganism as anti-capitalist from a social systems theoretical perspective. Instead, I focus on bin diving in the context of freeganism. If anything, like reuse, it is an indication of capitalist self-control in that it makes unproductive payments productive. Perhaps then it is a limitation of Luhmann's theory that it cannot describe an anti-capitalist philosophy as anything but capitalist but the literature on freeganism seems to indicate the underlying fiction. Indeed, just as the medium for economic communication has shifted, according to Luhmann, from property to money, which itself has encompassed, coins, paper, plastic and even numbers on a screen, it is arguable that money is not a fixed form.

The emergence of freeganism perhaps reflects the economic system's resonance with its environment, in particular the interpenetration with the ecosystem. As argued in Chapter 3, not all economic communications that are produced can be coded payment/non-payment, but some are forgotten as waste. But when the resonance of the systemic waste goes beyond a threshold, the system remembers again. Barnard opted to frame freeganism as a "New Social Movement", a conceptualisation of post-modern, post-industrial mobilisations';³⁶⁰ he argued from an ethnographic study that freeganism as a collective behaviour by groups was a combination of new identity formation and more traditional movement-building. Similarly, Gross argued that the idea of freeganism, as well as other alternative mechanisms for obtaining food and

³⁶⁰ Barnard, 2011, 421

resources, is not a completely new phenomenon but an adaptation of a traditional method to a modern setting. Others have made *en passant* observations about the similarity between freegans and the Digger movement in England.³⁶¹ In this respect, freeganism is a development of an old economic paradigm in response to changes in the environment. In particular, I would argue that it is a response to the globalisation of society and consequent environmental problems in the world. In a sense, solutions are localised to individual systems. Edwards and Mercer carried out an ethnographic study of two groups of freegans in Australia, one of which engaged in bin diving, which contributed to the literature on food waste, alternative food networks, diverse economies and autonomy: 'Freegans add an extra dimension by accessing a controversial food source to redistribute free food (or what may be seen as "waste") both to people who follow their political beliefs, to the general community, and to people in need.'³⁶² Nguyen, Chen and Mukherjee viewed freeganism as consisting of three processes of stigma reversal – ideological reversal (from consumerist acceptance of material excess to its rejection),³⁶³ practice reversal (reclamation before purchase and consumption)³⁶⁴ and resource reversal (from rubbish to resource)³⁶⁵. In the context of Luhmann's theory, freeganism involves the rejection of the material, the reclamation of systemic waste and reusability of communication. In other words,

³⁶¹ Connections have been made between the practice of freegans and the English Digger movement (Edwards and Mercer, 2012, 65)

³⁶² Edwards and Mercer, 2012, 187

³⁶³ Nguyen, Chen and Mukherjee, 2014, 1879

³⁶⁴ *ibid*, 1880

³⁶⁵ *ibid*, 1881

whilst the dominant approach taken by the literature is within the boundaries of the economic system, it could also be understood as an emergence within other social systems too, in particular the legal system.

Whilst the fundamental characteristic of freeganism, bin diving, can be seen as an economic response to the problem of food waste, the legal system struggles to understand it. Edwards and Mercer recognise that, in Australia, despite striking a 'moral chord' with the public and receiving greater attention from the media, freeganism remains a 'legally marginal activity'.³⁶⁶ It is not entirely clear whether it is treated as lawful or unlawful or a matter of legal risk. Nguyen, Chen and Mukherjee observed from their study that there were differing perspectives in relation to the legality of dumpster diving. Some argued that, since 'dumpsters are public disposals and outside of the marketplace' it must be legal.³⁶⁷ The problematic with this view is that just being outside of the economic system does not make something legal; the essence of social systems theory is that acts can only be understood by the legal system as unlawful or lawful independently of but no place of the economic system. Furthermore, as argued above, I am not sure that freeganism can necessarily be considered as something outside the marketplace *per se*. The literature indicates that being a freegan did not necessarily mean someone was against paying for goods in principle. But one engages in such activity precisely to obtain food without having to

³⁶⁶ Edwards and Mercer, 2012, 187

³⁶⁷ Nguyen, Chen and Mukherjee, 2014, 1880

pay for it, whatever the reason. An opposing perspective was that bin diving was unlawful because dumpsters are private property that contained objects that, at one point, belonged to a corporate entity or individual.³⁶⁸ As I argued below, this perspective does carry more weight legally in the U.K., although it is problematic.

Most of the academic literature applies to non-European contexts, in particular to the United States and Australia, but there is some evidence that freegan bin diving has encountered the legal system in the U.K. In January 2014, the Crown Prosecution Service decided to discontinue a prosecution of three men who were caught and ‘charged under the 1824 Vagrancy Act [Section 4], after being discovered in “an enclosed area, namely Iceland, for an unlawful purpose, namely stealing food”’.³⁶⁹ In light of a criticism against the decision to prosecute, as well as number of online petitions, it was decided that it was not in the public interest to prosecute. What is interesting about this story is that the supermarket Iceland itself intervened to indicate to the CPS its view that it had no interest in pressing charges against men who took what it had already thrown out as waste, perhaps due to combination of decisions within the organisation and pressure from the environment.³⁷⁰ In an initial statement in response to press reports, Iceland was keen to emphasise that it had nothing to do with any arrest or charges:

³⁶⁸ Nguyen, Chen and Mukherjee, 2014, 1880

³⁶⁹ Gentleman, 2014a

³⁷⁰ Gentleman, 2014b

‘The store in question is next door to a police station. Iceland staff did not call the police, who attended on their own initiative. Nor did we instigate the resulting prosecution, of which we had no knowledge until the media reports of it appeared yesterday evening.

We are currently trying to find out from the Crown Prosecution why they believe that is in the public interest to pursue a case against these three individuals...³⁷¹

A later statement emphasised that ‘Iceland is pleased that the Crown Prosecution Service has taken note of our representations today in deciding that it would not be in the public interest to pursue the prosecution...’³⁷² It seems as if the organisations associated with the legal system decided to act in accordance with how they are supposed to operate – that is, enforce the distinction between lawful and unlawful – and it took a whole load of noise of the environment to change course. The legal system’s construction of the environment is arguably summarised as “the public interest” or, in the context of social systems theory, the interest of society.³⁷³ It is thus

³⁷¹ Iceland, 2014a

³⁷² Iceland, 2014b

³⁷³ The public interest in the context of CPS decisions is summarised as a series of questions in paragraph 4.12 of the Full Code Test of the Code for Crown Prosecutors, https://www.cps.gov.uk/publications/code_for_crown_prosecutors/codetest.html

a part of the legal system. However, this case differs from the usual way that the act of removing things from bins is dealt with both by the courts and in what exists of the legal literature on freeganism in the U.K.

The usual starting point on the subject is that bin diving is theft as defined in section 1 of Theft Act 1968, that is, the “dishonest appropriation of property belonging to another with the intention of permanently depriving the other of it”, not an act of vagrancy. Sean Thomas has observed that the argument to treat bin diving as theft comes from the idea that the disposal of waste falls within the right of ownership – alienation – and thus there is a duty imposed on others not to interfere with the disposed of waste.³⁷⁴ It is arguably the way that E.U. law defines waste, as indicated in Chapter 5, as the something that is discarded by a holder who possessed it and it would make sense from an environmental standpoint, so as to code as unlawful the emptying of the contents of one’s waste bin on the ground and the act of pollution. Indeed, if an individual’s waste bin was not treated as private property then it would be tantamount, according to the commons literature cited in Chapter 4, to a tragedy of the commons. As argued in Chapter 4, the only way to manage waste was to make sure it was enclosed. And yet, it could be argued that bin diving as part of a freegan philosophy was also for the purpose of protecting the environment, in this case reusing waste. As argued in Chapter 4, social systems as common property systems can only

³⁷⁴ Thomas, 2010, 100

make use of all communication by referring to other social systems. The key case that is often cited when discussing bin diving is *Williams v Phillips*,³⁷⁵ in which the defendants took items from bins belonging to factories and other places, in the course of their duties as refuse collectors, and sold them to onto third parties for profit; this was in violation of a union agreement with their employer, a local authority, that any proceeds from the sale of refuse would be distributed equally between the Corporation and the dustmen. They had received a number of warnings before it was made into a criminal matter. The court held that the property prior to collection still belongs to the owners of premises who had put the rubbish out and who had only left the refuse out for the purpose of collection. Since the dustmen worked for the local authority, the refuse could only be alienated into its constructive possession, not that of the dustmen, who clearly had the intention of committing larceny (*animus furendi*) since they knew of the agreement and had been warned. The defendants were convicted of larceny. So on the one hand, the dustmen engaged in economic communication but it was also an unlawful legal communication in that it was contrary to accepted organisational decisions. This case is problematic as the basis for judging cases involving freegans. Firstly, the defendants in *Williams* were clearly not freegans;³⁷⁶ they took from bins to earn a private profit. Secondly, it does not seem

³⁷⁵ (1957) 41 Cr App R 5

³⁷⁶Ormerod and Williams tried to justify the decision on the basis that it dealt with 'those who rummage through the refuse of celebrities for information to sell to tabloid newspapers, and those who appropriate confidential industrial or financial information from refuse' (2007, 2,186 fn 312). That may be true but I agree with Thomas that fishing for confidential information would have probably been unlawful anyway, through other laws, and would seem to be in opposition to freegan philosophy.

from the case report that it was bin diving itself that was unlawful; it was made unlawful because of the defendants sought to benefit financially and were apparently dishonesty in ignoring the union agreement and warnings from the employer. Without the financial benefit, the union agreement and the warnings, what is left is taking something from a bin. Surely the person they stole from was the employer not the owners of the premises where the bins were located. Furthermore, by making bin diving as theft, the environmental argument is irrelevant.

Nevertheless bin diving could satisfy much of the definition for theft. According to Thomas, it is certainly arguable that freegans engaging in bin diving will be appropriating property, with the intention of permanently depriving, because their aim is to either eat it or redistribute to it an appropriate outlet. The two questions are whether rubbish has been abandoned, and thus in the commons, and whether freegans are acting dishonestly.³⁷⁷ Whether it has been abandoned depends on the value of the goods, the owner's intention, the location of the goods and the finder's intention – and indeed the finder's intention connects abandonment to dishonesty, thereby making appropriation theft. Thomas, summarising the case law, argued that appropriation would clearly be unlawful if whoever disposed of the waste put up a notice that it has not been abandoned and only the waste collection agency may take it away; in the absence of such a notice, it is not clear. There are 'arguments in favour

³⁷⁷Thomas, 2010, 104

of criminalising bin diving' that are 'based on factors that are either not present or are irrelevant to the case of a freegan bin-diver'. If the bin is actually on the premises belonging to whoever disposed of it, then it has quite possibly not been abandoned, but as rubbish that has been left out for collection, there is an argument that there is no value to the disposer. However, according to Thomas, the strongest factor is the freegan's intention, his honest belief that the property has been abandoned: 'It seems the best approach for a freegan bin-diver is to cast doubt on his dishonesty, rather than attempt the conceptually and practically difficult task of proving the goods were actually abandoned.'³⁷⁸Honest belief can be considered an aspect of consciousness so it is the interpenetration of the psychic system itself that makes its complexity available to legal system. In this respect, then, whether bin diving is lawful or unlawful depends on the one thing that cannot be known within society. If one takes honest or dishonest belief as *mens rea*, the problematic is that the psychic system is outside society. As a social system, the legal system can only infer a level of (dis)honesty from the freegan's conduct, or the *actus Reus*, which is represented by communication, either legally or by reference to other social systems. Honest belief can be communicated within the legal system as the belief that that they had a legal right (not a moral right) to deprive the owner of the goods, a belief that the owner would consent anyway if he knew about it and its circumstances and a belief that the owner could not be discovered by reasonable steps. As an example of a belief in a legal right,

³⁷⁸ Thomas, 2010, 114

Thomas referred to a case involving Greenpeace protesters who, in September 2008, successfully argued that they had “lawful excuse” to trespass on the premises of a power station to cause criminal damage (paint on a chimney) in order to protect property from damage caused by climate change,³⁷⁹ but he pointed out that would not stretch to so-called moral rights such as an environmental rationale as might be adopted by a freegan. At any rate, the legal system would probably not be able to determine bin diving is lawful on a claim of belief of moral right to take abandoned property unless it resonated with the psychic systems (human beings) on a jury. It might be justifiable to take the waste if it could be shown there was a legal right in common that was equivalent to showing the property was abandoned (and needed reclaiming).

A freegan may have more success on the grounds of a belief that the owner would consent to the appropriation. In the case discussed earlier involving Iceland, their submission to the CPS that they had no interest in seeing the men prosecuted would have been one of the factors considered as part of the public interest. Perhaps the most relevant of the theft cases, according to Thomas, is *R v Wood*,³⁸⁰ which concerned a man who went with a friend and a van to a disused shop in a busy London shopping street. It appeared that shop had fallen silent and dilapidated over the preceding six months, but was still full of stock. The man entered the premises and

³⁷⁹Vidal, 2008

³⁸⁰[2002] EWCA Crim 832

took everything that had been left behind, because he had an honest belief that the stock had been abandoned. He even admitted to being a trespasser. It was his fourth visit; previously he had gone to the shop on his own, by foot, in broad daylight and taken stock away in a shopping trolley. He was eventually found not guilty because of his honest belief. In evidence that was submitted by the defence, it was clear that the owners of the shop had no interest in whatever was left behind, had never given the police a list of what was stolen and could not even say they remembered what was there. Thomas pointed that the defendant in *Wood* was acquitted because of the test for honest belief in *Ghosh*:³⁸¹

‘In *Feely*,³⁸² the Court of Appeal held that if the accused acted in a way which offended the sensibilities of the ordinary decent person, he would be dishonest. The test was expanded by the Court of Appeal in *Ghosh*, adding that if the accused honestly believed that his actions were not dishonest according to the standards of ordinary decent people, then there was no dishonesty...This test should only be put to the jury if the defendant himself raises the possibility that he did not consider his conduct dishonest according to the ordinary standards of reasonable and honest people.’³⁸³

³⁸¹ [1982] QB 1053

³⁸² [1973] QB 530

³⁸³ Thomas, 2010, 118-9

According to Thomas, the question of whether defendant had an honest belief that he was not acting dishonestly was a matter for the jury. The facts of *R v Wood* suggest that a freegan would be more likely to be seen as honest if he or she bin dived openly, blatantly and in the daylight, rather than when it was dark. Thomas questioned this logic because the course of the British seasons meant that hours of daylight and darkness varied throughout the year; 3 pm in the afternoon may be daylight in the middle of summer and dark in the middle of winter. But I would suggest that 3 pm is also a busier time of the day than say 9pm (depending on the area). It would seem that being “open and blatant” was more important from a freegan perspective than the time, especially as it is part of a philosophy that challenges consumerism and the production of food waste.

Conclusion

In this chapter, I have sought to describe how the legal, economic and political systems interact in the formation of waste management policies and the extent of their effect of human behaviour. I argue that the main influence on human behaviour with regard to how waste was treated was through individual consciousness and irritation by the way the environment was organised, even if this was in response to the relationship between the legal, economic and political systems. I demonstrate this below.

Household waste and Incentives

Two types of incentivised recycling schemes were considered primarily. Positive, reward-only schemes could be viewed as taking the economic system into account and were regarded by local residents as recognition for work done. However, whether it could be regarded as motivation for work done is not clear, as there was also an increase in the recycling rate amongst those who had not opted in to receive rewards. This suggested that the effect of the incentive, an economic instrument, was in irritating the consciousness or raising awareness of the value of recycling. Negative incentive schemes (fines) were also a form of legal sanction, indicating an instrumentalisation of the economic system by the legal system, but the implementation of such schemes by local authorities indicated a focus on reassurance, providing advice and using fines as an absolute last resort. As a result, there was no record of anyone being fined or prosecuted.

Household waste: Co-mingling or Separation at Source

It is a legal obligation to provide a household waste collection service. This included four types of recyclable waste, which had to be collected separately from residual waste. However, there was some debate as to different types of recyclable waste each had to be separated by households (separation at source) or whether it could be collected together and separated elsewhere (co-mingling). Whichever option was chosen was a local authority decision, but for households, it would be an undecidable

premise, as part of the organisational context or choice architecture that nudged their behaviour. Data indicated that co-mingled collections resulted in more recyclable waste, but had a higher risk of contamination of waste, whilst the quality of recyclable waste was higher when households were made to separate it into different receptacles. This indicated that convenience and availability of facilities was the main influence on recycling output.

Date labelling and food waste

Date labelling, in the form of uncoded colours, originated as an organisational decision for retailers to make sure food on sale was suitable for consumption. However, it slowly became a way to inform consumers of the freshness of the food. This development irritated the political system and legislation was proposed and passed by government and Parliament as organisations to require the stating of “use by” and “best before” dates, despite industry concerns that this would influence consumer behaviour. Through legislation, the legal system was irritated by the environment, which did have an influence on the economic system in the form of what consumers bought and how retailers sold. The unforeseen consequence was the disposal of food waste by retailers and some people choosing to bin dive in the context of freeganism.

The regulation of bin diving

English courts have tended to treat bin diving in general as a form of theft, which is committed when someone 'dishonestly appropriates property belonging to another with the intention of permanently depriving the other of it'.³⁸⁴ The problematic identified by Thomas was that none of the case law deals with bin diving in the context of freeganism, which is a relatively recent phenomenon driven either by economic need or an anti-capitalist, anti-consumerist or environmentalist philosophy. Technically, therefore, someone engaging in bin diving as part of a freegan philosophy is a thief. Bin diving, whatever the reason, can be understood by the legal system as unlawful communication and an economic non-payment. However, from tests laid out in the *Feely* and *Ghosh* cases, there is scope for freegans to be treated differently if it can be demonstrated from their actions that they had an honest belief that things placed in a bin had been abandoned. The actions were treated as taking place in an organisational context and were evaluated by the jury.

³⁸⁴ Theft Act 1988, section 1

Chapter 7: Conclusion

This thesis explores the extent to which the steers the waste management process, specifically within the U.K. and the E.U. The aim of this thesis was to employ Luhmann's theory to develop a conceptual model that encompassed the operation of a legal system and its relationship to the economic system that could describe the waste hierarchy and the zero waste economy. It is my thesis that the capacity of the legal system to steer the waste management process is limited to steering its own understanding of the process, with steering, in its turn, mediated through organisations. In Chapter 1, I described the seemingly paradoxical situation that the U.K. government was "stepping back" from certain areas of waste management just when the immediate priority was meeting the final E.U. target for waste reduction in 2020. On the one hand, it has caused concern among other organisations involved in the waste management process as government statistics suggest that the household recycling rate is slowing down. On the other hand, it could be argued that the government is stepping back because households and businesses are better suited to deal with the higher priorities of the waste hierarchy (reuse and reduction), in keeping with an aspiration towards a zero waste economy. The zero waste economy is recognised in the policy literature as one where there is long term market in "waste" materials. The waste hierarchy is recognised in the policy literature and legally defined in E.U. law as a prioritisation of waste management activities. It is also recognised in

the literature that the implementation of the waste hierarchy is consistent with the aim of a zero waste economy. The problematic I identified, however, was that, with the existing understanding of either concept in the literature, it was not clear how one lead to the other. The emphasis in the E.U. targets on waste reduction in terms of tonnage was consistent with the idea of the waste hierarchy as a dematerialisation strategy, if waste was a material substance that was discarded; but it was not consistent with the idea of the zero waste economy, which suggested that waste was more of a metaphor or description for a material substance. It was thus also not clear how the waste hierarchy helps to achieve the circular economy.

In Chapter 2, I identified the problematic with existing theoretical literature on waste as being the conception of waste as something discarded by a producer and taken away. Waste was very much seen as rooted in the material world, even though there was an undefined, immaterial aspect that referred to the moment when waste no longer affected one and affected another. It is indicative of the lack of clarity of the waste hierarchy as a dematerialisation strategy and its consistency with the zero waste economy. It is also indicative of the legal definition of waste as a discarded substance or object. Luhmann was concerned with the different types of communication – legal, economic, political, and so on - between human beings, who existed in the environment of social systems. What my reading of Luhmann's theory brings to the existing literature on waste is the possibility to move away from the idea of waste as

something material that is thrown away by human beings into the environment to waste as something that is passed in a commons from one material entity to another in some form. In this concluding chapter, I discuss the original contributions to knowledge.

Original Contributions to Knowledge

My thesis makes the following original contributions to knowledge:

- That organisations mediate the steering of social systems;
- That the waste hierarchy and zero waste economy are paradigms for the autopoiesis of social systems;
- That the legal system affects human behaviour through the mediation of an organisational context;
- That social systems can be regarded as bounded commons and the tragedy of the commons can be resolved through the external reference to organisations;

- That it is possible for the courts to treat bin diving in the context of freeganism in a different way from the traditional approach of treating bin diving as theft.

Organisations as Mediator between Social systems

I contribute to the knowledge of Luhmann's theory by making a connection between Luhmann's social system theory and his lesser known organisational theory. In my reading of Luhmann, a social system steers the environment by steering itself through the mediation by organisations. My reading of Luhmann's theory thus offers a reflexive approach to law, as described by Paterson's reading of Teubner; I argue that reflexive law does not necessarily have to be seen as an alternative to Luhmann's theory but as also providing greater clarity of Luhmann's concepts of "steering", "structural coupling", "irritation" and "resonance", which suggest some sort of connection between social systems. "Steering" is indicative of the internal guiding of a system so that it moves in a particular direction in order to adapt to the environment, just as the turning of a steering wheel of a car causes the wheels of the car to turn and the car to move in a different direction;³⁸⁵ as a result, other entities must adapt to a change in their environment. "Structural coupling" is indicative of what appears to be the simultaneous operation of two distinct systems, as if they are connected, even though neither system can observe itself as part of its environment. "Irritation" is indicative of

³⁸⁵ Luhmann, 1997, 42

an awareness of something unseen outside the system that causes the system to respond. “Resonance” is a scientific term that is indicative of the response generated in one energy-producing system as a result of the autopoiesis of another energy-producing system. All these terms could be said to be metaphors – as Luhmann might put it, via language - for describing the relationship between different social systems, but none of them really explains what that relationship is. I argue, following Paterson, that all these terms are forms of mediation through organisations, which is another type of system in Luhmann’s theory. Thus, in Chapter 5, I argue that international environmental legal principles are not produced from within the legal system but by decisions made in courts to describe a particular way in which social systems relate. In a sense, legal principles are the court’s observation of the legal system steering its environment. Similarly, I am able to contribute to the legal literature on discarding by demonstrating that the reason why the legal system was not able to provide a specific definition of discarding was because the definition, incorporating reuse, recycling, recovery of energy and disposal, was produced outside the legal system through the decision-making of the European Court of Justice as an organisation.

The waste hierarchy and zero waste economy as paradigm for the autopoiesis of social systems

I contribute to the understanding of the waste hierarchy and the zero waste economy in that I argue that they are paradigms for the autopoiesis of a social system. I indicated that, in the policy and academic literature, there is a sense that dematerialisation refers to the material or physical reduction of waste in terms of weight. However, from Van Ewijk and Hultmann and Corvellec, I take the notion of the waste hierarchy as an indication of the desirability of waste management practices, with dematerialisation not specifically about physical reduction but about the transformation from something material to an immaterial description about something material. In Luhmann's theory, this immaterial aspect is known as communication, which is produced by social systems and refers to an interaction between human beings in the environment of social systems. When waste is understood as something that passes from one human being to another, I argue that the act of discarding waste is a form of communication that can either be reused for producing more communication or is not usable and regarded as systemic waste, but systemic waste can be recycled by referring to other social systems. Systemic waste, in this regard, is not material waste but refers to interactions between human beings that cannot be understood by the social system alone as being productive or of value. In my reading of Luhmann's theory, what a social

system regards as a blind spot is observable from the environment as a paradigm developed by organisations. Paradigms, as defined by Kuhn as a pattern of understanding that is accepted by a group of people, are the organisation's observation of a social system's steering of other social systems. The external reference is mediated by organisations, which make decisions based on the understanding of different social systems. Thus, as I argued in Chapter 3, the prevention or reduction of waste is, in social systemic terms, the prevention or reduction of communications that are understood as waste. Therefore, I argue that the understanding of the waste hierarchy as a priority order of waste management activities is developed by organisations as a unity of different social systems' understanding. In this regard, the zero waste economy can also be regarded as an organisational paradigm; it refers to a long term market in "waste" materials, as indicated in Chapter 1, because there is a sharing of understanding between social systems in order to manage systemic waste. The zero waste economy does not necessarily refer to the economic system; it describes the way that each social system produces its own economy in the etymological sense of managing a household, comprising a population not of human beings but of communication that represent interactions between human beings.

The effect of the legal system on human behaviour

From the perspective of the legal system, discarding can be understood as either a lawful or unlawful act; it is not interested in acts that cannot be understood in terms of lawful or unlawful, but they can be made useful to the legal system by developing an understanding of how other social systems understand discarding. This can be seen in Chapter 6 in the way that local authorities as organisations can take the economic system into account by using incentives when the legal system does not provide sufficient understanding available to increase household recycling. Similarly, government departments as organisations can engage with the understanding of the political system to pass or amend legislation in order to rectify a flaw or undesirable aspect of legal understanding, as was done: (1) to replace the criminal liability for households not disposing of waste properly with a civil liability; (2) to limit the level of fines for not disposing of waste properly; and (3) to clarify the law in relation to separated recyclable waste collections so as to take concerns about co-mingling into account. I also make a further contribution to Luhmann's theory using an encounter with Sunstein and Thaler's nudge theory to provide greater clarity on "interpenetration" between social systems and psychic systems. As indicated in Chapter 3, "interpenetration" is a metaphor for the existence of human beings in an environment which is governed by law, economics, and politics and so on. But since Luhmann's fundamental premise is that psychic systems and social systems are distinct, "interpenetration" on its own does not explain how the co-existence of psychic

systems and social systems take place. This co-existence takes place through organisational contexts. The unity of the choice architecture, which is designed by decision-making within organisations (choice architects), nudges human beings to choose behaviour. At the same time, the decision is the organisational construct of a choice made by a human being in its consciousness. The interpenetration of psychic systems and social systems takes place as a “members” of the organisation in response to the organisation context (choice architecture). This can be seen in Chapter 6 in the way that the amount of recyclable waste generated by households depends on the extent they have to separate recyclable waste. It is also seen in the limited effect that incentives or the idea of legal compulsion has on recycling, with what local authorities did to implement a collection service as having an influence. Finally, it can also be seen in the way courts determine whether someone engaging in bin diving in the context of freeganism has an honest belief waste has been abandoned. Though I have not specifically looked at it in this thesis, I would also hypothesise from the literature that the decision of households (or household systems) to recycle are affected not only by the decisions of local authorities but also: by the decisions of other households in the neighbourhood (also known as peer pressure or “keeping up with the Joneses”); and decisions of organisations such as schools to educate children about recycling (leading to “pester power”).

Social systems as a mechanism for managing the commons

Since the zero waste economy can be regarded a paradigm for the management of waste, my thesis makes a contribution to the literature on the commons in that a commons can be regarded as being a space where human beings manage resources by communicating. In this respect, the commons in Luhmann's theory are social systems, where the resource being managed is a type of communication – legal communication, economic communication and so on. By considering a commons as a social system, it is possible to move away from the idea of the tragedy of the commons caused by overexploiting or overuse of material resources; instead, the commons depends on producing more resources as communication. At the same time, it is possible to move away from the idea of the tragedy of the anticommons caused by underexploiting or underuse of material resources; instead, the management of the commons depends on external reference to other external commons. Thus, the management of larger commons, indicative of society as a social system, depends on the decisions made by organisations that interact with each other through social systems. The distinction commons/anticommons is akin to the distinction waste hierarchy/zero waste economy and it enables the achievement of the circular economy.

The regulation of freeganism

From Chapter 6, I contribute to the literature on freeganism and bin diving. The problematic that has been identified in the existing literature, particularly by Sean Thomas, is the inability of the legal system to understand it as an act involving property and thus as a discarded waste. The U.K. courts have treated bin diving as an act of theft, because of waste as a substance discarded by a holder who possessed it can be understood as a form of property. It has only been considered lawful where there is evidence of honest belief that the waste was abandoned. I argue that, following Luhmann's theory, bin diving can be understood by the legal system as either lawful or unlawful, because the legal system refers to other social systems to make its waste usable. This means that bin diving is a decision taken by human beings within an organisational context, taking various social factors into account. In this respect, bin diving as communication indicates the handling of waste placed in a commons.

Closing

The advantage of Luhmann's theory is that it makes the distinction between human beings and communications, which draws out the functional differentiation in modern society – global, local, a commons - in which it is not so clear to draw a clear line of

hierarchy between a “suppressor” and “the suppressed”. Instead, the idea of hierarchy is present in Luhmann’s theory but it is not a hierarchy based on characteristics of human beings; in my reading, it is a hierarchy based on how useful or valuable an act is to the understanding of society as a space where people interact. Thus, acts that can be considered in terms of lawful/unlawful are more useful as far as the legal system is concerned. The corollary is that acts that cannot be considered in those terms are wasteful from the legal system’s perspective. But the distinction between system and environment has to be bridged in order for the legal system to continue to exist. The legal system only considers wasteful acts useful by reference to other social systems. However, the process of making waste usable is not done by the legal system, which only understands that there is an environment; it is done by organisations, which look at the different social systemic understandings of the environment and makes decisions based on the knowledge available. The obvious example from this thesis is the court system or government system or household system. In a sense, my reading of Luhmann’s theory develops an understanding of a modern global society by indicating that hierarchy caused by the differences between human beings is resolvable by communication between human beings. However, since human beings are separated from communication and placed in the material environment, Luhmann’s theory can only be used in a descriptive capacity. Thus, as argued in Chapter 3, the only way to connect the social understanding of the environment to how human beings think and behave is to see the interpenetration between social

systems and psychic systems as taking place in a fundamental paradigm of language, but language for Luhmann is not only verbal but also material. Since human beings are separated from social systems by a material environment, human beings respond to the way the environment is organised and how it is organised depends on the law, economics, politics as well as the decisions made by human beings in those organisational contexts. Therefore, the only way to actually deal with environmental problems, whether global or local, is to break it up into smaller chunks and for decisions to be made within those smaller contexts but then to be connected together in an overarching or common system of law, economics, and politics and so on. But this does not mean that there has to be a “one world” government so to speak. As can be seen from the Luhmannian model for a circular economy, there is already common global system of law, politics and economics but it is really lots of smaller circular economies within circular economies within circular economies and so on. In other words, the world already has the tools it needs to deal with global environmental problems. The legal system steers the waste management system by steering itself through the mediation of organisations.

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Appendix

The following are a list of other source documents cited in Chapter 6. The documents have been redacted in order to hide personal information.

Spreadsheets

B1: Household Waste and Recycling in the UK, 1991/2 to 2008/2009, Department for Environment, Food and Rural Affairs

Emails

B2: Halton Borough Council, 3 September 2010

B3: RecycleBank Rewards for Recycling Scheme Frequently Asked Questions

B4: London Borough of Barnet, 27 July 2012

B5: London Borough of Bromley, 26 July 2012

B6: London Borough of Harrow, 30 July 2012

B7: London Borough of Tower Hamlets, 24 July 2012

B8: London Borough of Islington, 15 August 2012