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Kelly, Ferus (2017) *Waste, crime and environmental harm: exploring the Scottish waste management sector and its vulnerabilities to organised crime*. [MSc].

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Dissertation submitted for part-fulfilment of the MSc Criminology
and Criminal Justice by:

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Academic year 2016/2017

*Waste, crime and environmental harm: exploring the Scottish
waste management sector and its vulnerabilities to organised
crime*

Word Count: 16, 520

Supervisor: Dr Alistair Fraser

Date of Submission: September 2017

Acknowledgements

This dissertation would not have been possible without the kind support I received from a great number of people. I would like to thank my family, particularly my parents, for the love, encouragement, and constructive criticism they provided me throughout the course of writing this paper. I would not have completed it otherwise! I would also like to thank my supervisor, Dr Alistair Fraser, for his advice, guidance and persistent efforts to keep me on track. I'd like to thank Dr Colin Atkinson, for helping me access a network of valuable colleagues at the Scottish Environmental Protection Authority, and I'd like to extend my gratitude to all of the staff at SEPA who discussed my research with me, offered themselves up for interview, gave me pointers and advice, and generally accepted me into their organisation with open arms. I'd like to thank and congratulate all of my classmates in the MSc Criminology and Criminal Justice Programme of 2016/17, whose ideas, opinions and advice encouraged my creativity and critical thinking. Lastly, I'd like to thank my friends Lily Baker and Kevin Shenckler, without whom my time spent at the University of Glasgow would have been a lot less interesting. I wish them all the best.

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Chapter 1 - Introduction

“Where there is dirt there is system” (Douglas, 1966: 36)

Addressing the issue of waste is arguably of crucial importance to the social sciences. If, as social scientists, our broad project comprises the scientific exploration of human society and social relationships, then the human production and consumption of material goods must be central to our studies. Global patterns of production and consumption without fail reflect underlying social, political, economic and cultural shifts and trends and help to reveal the nature of social life. The multi-staged processes through which goods are produced, valued, consumed, de- (or re-) valued and disposed of are intrinsically intertwined with almost all aspects of social life (Halkier et al., 2011). As Warde (2015) argues, the sociology of consumption concerns itself with “the social organisation of activities through which items are incorporated, deployed, utilised and disposed of” (2015: 118). Further, he writes: “this requires attention to a wider range of social relations, interactions and processes” (Warde, 2015: 118).

Thus it is put forward that studying the sociology of consumption does not simply involve exploring the exchanges, behaviours and habits of consumers. Rather must take into account the much broader processes and social institutions which organise the production, valuation, utilisation and disposal of goods and items (e.g. Warde, 2005, 2005; Warde, 2015).

A key, but often understudied, aspect of these broad processes of consumption is the element of disposal – the inherent, ‘dirty’ aspect of the social system through which the items, goods and things we consume are turned to waste. While we can conceptualise waste as simply the end product of consumer behaviours, it should be viewed as much more than that. One can quote Richard C Porter (2010) for an economist’s definition: “waste is stuff that we don’t

want” (2010: 2). However, a number of seminal sociological works (e.g. Douglas, 1966) have helped to reveal to us the significance of waste as a conceptual mirror which reflects the nature and structure of collective human life. Things that are thrown away don’t only tell us about the things we make and use, but also tell us about the collective values, norms and codes of ethics by which humans organise society. Waste *becomes* waste through subjective processes of devaluation and rejection –the meanings and value placed upon objects and things are intrinsically tied to the behaviours and practices through which people interact with them. As Hawkins eloquently writes, waste is “a product of culturally and historically variable human practices; what we want to get rid of tells us who we are” (2006:2). It is people, acting within the broad norms of an accepted social system, who define what is waste and what isn’t (Hawkins, 2006). Importantly, the ways in which waste is labelled and characterised are culturally, spatially and temporally dependent. Importantly, though, the meanings and uses of objects constantly shift; recycling, re-use, re-purposing and re-appropriation can revalue previously rejected goods and items, and such processes, particularly in our globalised and networked world, are constant and intractable (Warde, 2015). The subjectivity and fluidity of waste, then, has critical consequences for the ways in which we understand and manage it. If, as Mary Douglas famously argued, “dirt is matter out of place” (Douglas, 1966: 36) and a “contravention of order” (1966: 36), then the very existence of dirt is completely dependent on systems of spatial order and sets of societal rules. Viney (2014) expands Douglas’ (1966) spatial analysis of waste (or *dirt*) as ‘matter out of place’ with an exploration of the temporal elements of humans’ relationship with waste things. He critiques the “insistence on spaces of waste” (Viney, 2014: 2) and posits that “waste is also (and in both senses of the phrase) matter out of time” (2014: 2). Understanding the subjectivity of waste, and the constructed spatial and temporal narratives of *things* that become waste, will be important as we

explore the movement and management of waste across time and space, and crucially its relationship with crime and harm.

There is little doubt that a wide spectrum of human behaviour causes environmental harm; it is not simply the management of material waste which must be addressed (White, 2013). Our exploitation of natural resources through, for example, felling forests, poaching, fishing, hunting, polluting air and water, all have considerably harmful effects on the natural environment. Given the complexity of humanity's relationship with environment, the interconnectedness of our global society and its intrinsic connection with the natural world, exploring the issue of environmental harm is a truly interdisciplinary project (Atfield, 2014). Where criminology finds its place is in attempting to answer the conceptual and pragmatic questions about the particular human behaviours which cause harm – those 'environmental crimes' if you will. Mainstream criminological approaches generally define crime as acts which break the criminal law. White, however, (2013) warns that taking a strictly socio-legal perspective and defining crime as that behaviour which contravenes the law is not necessarily adequate, given the complexity and global nature of the problem. He argues: "the concept of 'harm' ought to encapsulate activities that may be legal and 'legitimate' but nonetheless have detrimental impacts on people and environments" (White, 2013: 667). So has burgeoned the relatively fledgling sub-discipline of 'green criminology,' which at its heart takes issues of environmental crime and harm and attempts to reveal their scale and nature (see, e.g. Potter, 2010; White and Heckenberg, 2014. As White and Heckenberg eloquently explain, 'green criminology' involves "critique of the actions of nation-states and transnational capitalism for fostering particular types of harm, and for failing to adequately address or regulate harmful activity" (White and Heckenberg, 2014: 1).

This research study is criminological in nature and ultimately fairly narrow in its scope; it is largely concerned with organised criminality within Scottish waste management systems, which will be viewed through the fairly technical and administrative lens of ‘crime sector vulnerabilities.’ The fundamental questions being addressed in this paper are: i) is the Scottish waste management sector vulnerable to organised crime? ii) does Scottish organised crime cause environmental harm? And iii) how can vulnerabilities be addressed to reduce crime and environmental harm?

While an exploration of organised criminality and sector vulnerabilities would ordinarily not situate itself within the field of ‘green criminology,’ this study will attempt to marry considerations about environmental justice and harm with more administrative and pragmatic methods. Criminology more broadly is critically concerned with issues of power, harm, (in)equality and justice, both in relation to humans and the natural environment (Loader and Sparks, 2012; White and Heckenberg, 2014). To fully understand the implications of waste disposal and management to social life, it is important to interrogate the dynamics of power and control inherent in the social systems which govern waste management on a global scale. The nature and characteristics of the waste management industry will be explored in depth throughout the paper. Suffice to say here, the uniqueness of waste as a product, the constant and rapid rate with which it is produced, and the vast resources required to remove it from social life and manage it effectively necessitates the existence of a huge and complex global industry within which the practices of many different actors constantly intertwine with law, governance and policy (Dorn et al., 2007; Vander Beken and Van Daele, 2008; White and Heckenberg, 2011). A great deal of evidence suggests that this complex sector is vulnerable to various types of crime and illegal activity, which in turn can cause both local and global environmental harm – it is these vulnerabilities which will be explored in depth in the course of this paper, taking a particular geographical focus on Scotland. It is hoped that this marriage of

various theoretical elements of 'green criminology,' the sociology of waste, organised crime studies, and economic sector vulnerability studies will bring some fairly unique conclusions, particularly in that it relates specifically to Scotland.

Chapter 2 - A Review of the Literature

2.1 - Waste in a global society: the 'rubbish society' and the question of value

There are some things in life that are so obvious, so glaringly, manifestly and ubiquitously essential to carrying on in the world that we fail to notice them... One clear example is the process and activity of wasting (O'Brien, 1999: 1).

The social sciences have arguably afforded relatively scant analysis to the issue of waste and the processes of wasting, in comparison to the processes of production and consumption.

There is a general acceptance that waste – or 'dirt' (Douglas, 1966) – is simply the unwanted by-product of other important social processes. From a Marxist political economy perspective, wasting is viewed as a societal manifestation and internalisation of capitalist systems of mass production; systems driven by greed and profit which disregard the unsustainable consequences of the pursuit of exponential growth (Wise and Smith, 1989). From Douglas' (1966) functionalist anthropological perspective, waste is sustained as a distinct cultural category through processes, rituals and embedded behavioural routines which serve to remove it from the mainstream of social life. Waste is unwanted and 'out of place' in daily life, and thus people collectively develop systems which conveniently allow them to have as little contact as possible with the things they no longer need (Douglas, 1966). Douglas' concept of 'dirt' as a separate social category is interesting because she paradoxically theorises that it is both unwanted and 'out of place' in our cultures, but is simultaneously essentially in allowing

us to achieve order and harmony; without dirt there can be no cleanliness, and without disorder there can be no order (Douglas, 1966). Turning to the issue of crime briefly, we can see similarities to a Foucauldian functionalist perspective on criminality, in that crime and disorder is viewed as essential in verifying and delineating our cultural, moral and legal boundaries in society, and in helping us to create order (Foucault, 1977).

Martin O'Brien (1999) takes a slightly different view to Douglas, and argues that far from being a separate cultural entity which has no place in mainstream social life, waste and wasting in fact pervade and shape our contemporary societies. He goes so far as to claim that we live in *rubbish societies*; "societies whose modes of self-understanding, whose political, social and cultural systems are infused by a relationship to waste and wasting" (O'Brien, 1999: 272). From this perspective, the ways in which we produce and manage waste are seen as being intrinsically tied to other social and cultural processes. It is suggested that collective understandings and conceptualisations of waste are in fact shaped by these other socio-cultural processes and structures; as Douglas writes: "there is no such thing as absolute dirt: it exists in the eye of the beholder" (Douglas, 1966: 5). The meanings and value we attribute to waste in its many different manifestations are mediated by variations in social, cultural and economic practices across time and space. Thus it would be remiss to discuss waste without understanding that it is, essentially, a material good, which maintains and re-assumes value in different circumstances even after it has been 'used' and deemed to be worthless (O'Brien, 1999). This is an idea of critical importance to those exploring the issue of waste from a criminological perspective. If, as O'Brien argues "where there's dirt, there's money," (O'Brien, 1999: 277) then the complex world of waste management is surely a world of endless opportunity for those entrepreneurial individuals and organisations who recognise its profitability. And, of course, where social and legal structures are developed to regulate economic activity – ostensibly in the name of justice, fairness and protection of public rights and wellbeing –

then there will be those actors who seek to circumvent such regulatory efforts to maximise their gains at the expense of others (Albanese, 2011; Kleemans, 2014).

In a world in which waste generation is increasingly becoming a challenge of critical importance, it is becoming essential to direct our global shared efforts to developing more sustainable and *circular* systems of exploitation, production and consumption (e.g. Andersen, 2006). However, one could argue that in our modern, capitalist consumer society, the issue of waste is not viewed as a particularly important consideration, with the pursuits of profit and growth instead dominating our patterns of behaviour (Andersen, 2007; Ruggiero and South, 2010). As Ruggiero and South (2010: 1) claim: “The problems of waste management and rubbish disposal are absolutely central and yet generally overlooked issues for a hyper-consumer society.” The environmental impact of our hyper-consumerism, rather than being a real consideration which modern humans take collective responsibility for, instead is viewed as an ‘inconvenient truth’ which uncomfortably challenges our routines and patterns of rapid mass consumption (Ruggiero and South, 2010). The majority of our waste products, whether industrial or municipal, end up buried in the ground in landfill sites. In our highly globalised world of constant international exchange, even waste disposal is not a local affair; various classifications of waste materials are frequently shipped all over the world, often in the pursuit of profit. The adverse effects of this practice on the natural environment and public health cannot be overstated; repeated assessments have revealed the problems it causes to biodiversity, water contamination levels, animal habitats, and human health (e.g. Flyhammar, 1995; Goudie, 2013). The rapid growth of the world population has the dual impact of increasing waste generation and reducing the space available to manage and store waste, presenting clear logistical issues even if we were not to take into account the wellbeing of the other millions of organisms which co-inhabit our planet (Goudie, 2013). Theories of sustainability and environmental ethics attempt to address issues such as these by exploring ways in

which our production and consumption issues can be redressed; to create *circular* systems by which our resources are re-pooled and re-used (Andersen, 2006; Matthews and Tan, 2011).

Douglas (1966) and O'Brien (1999) may have argued that ontologically, waste has no true objective reality, due to the ways in which social and cultural processes mediate our valuation of material goods in different circumstances. However, while waste must be seen as an economic resource in the sense that it can be revalued and re-appropriated, O'Brien (1999) also recognises that the *potential* value of waste is not always realised, and most of it ultimately must be *put* somewhere. While the management of waste often involves extensive attempts to search for re-use opportunities and re-valuations of used material goods, our current global infrastructure simply cannot sustain a fully circular economy of repeated material recycling (O'Brien, 1999; Morrissey and Browne, 2004). Furthermore, in a capitalist global society in which profit is paramount, the effort and expense required to realise the potential residual value of end-of-life material goods often outweighs the actual benefits (Baird et al., 2014). The effective 'management' of waste products is a costly business, and consideration must be made not only of the economic benefits of re-valuation, but also of the social and environmental problems caused by improper disposal. The pursuit of 'proper' and 'effective' management of waste thus involves a number of considerations, but two in particular which stand out: i) converting end-of-life material goods in order to re-value, commodify, and re-enter them into the circular economy for financial gain (value conversion), and ii) providing a service by disposing of waste materials in such a way as to maintain civic hygiene and mitigate harm to public health and the natural environment (O'Brien, 1999; Baird et al., 2014). In both senses, waste management involves commodification and profit; waste is either re-purposed and sold as re-valued raw materials, or waste management *services* are sold to those people and communities who wish to be rid of their unwanted waste (White, 2013).

2.2 - 'Green' Criminology and the issue of waste

As Antonioli and Massarutto (2011: 1) note: “The last 30 years have been characterised by an increasing quantity of waste, accompanied by a corresponding increasing difficulty to accommodate it.” A distressing effect of this global trend has been the intensification of waste – related environmental degradation and harm (White, 2002; Antonioli and Massarutto, 2011). It is the concept of ‘harm’ which attracts the attention of a subset of self-titled ‘green’ criminologists who primarily interest themselves in crimes against the environment. Within this sub-discipline in particular, the actual definition of what constitutes a *crime* is somewhat complex and ambiguous (White, 2013). There is little doubt that many human practices which cause environmental degradation and damage are broadly permitted by national and global socio-legal frameworks. In fact, one could advance the view that almost all collective human endeavours taking place within our global capitalist society are inherently harmful – as Brennan (1993: 138) writes: “in order to satisfy the demands of large-scale production, more and more of nature has to be destroyed... it gobbles what is already there, and gives nothing back but waste.” Thus the environmentally harmful behaviours which we collectively decree as *too* harmful exist on a somewhat fluid spectrum, because we as a species must decide which of these activities are beneficial or essential enough as to justify the harm they cause. As White and Heckenberg explain: “Environmental crime frequently embodies a certain ambiguity... it is judged in the context of cost-benefit analysis... this goes to the heart of why environmental crime is consistently undervalued in law” (White and Heckenberg, 2014: 8). Those environmental crimes which the law (both national and international) judges to be illegal tend to be

variations of legally permitted behaviour, for example moving hazardous waste across national boundaries, or deforestation for farming. White and Heckenberg (2014) conceptualise this type of environmental crime as *illegality* or *malum prohibitum*.

We can take, for example, the practice of transfrontier shipment of waste (TFS), which will be explored in more depth later in this paper. In brief, there are a number of national and international bodies and frameworks which regulate and monitor the movement of certain types (classifications) of waste across national boundaries. The Basel Convention (1989) is an international agreement between most of the world's nations as to how waste shipments should be regulated. The main provision of the Convention was the ban on exports of hazardous waste from developed OECD (Organisation for Economic Cooperation and Development) countries to non-OECD (developing) countries. The provisions of the Convention were officially ratified and brought into force by all members of the European Union and 170 other countries through their own national legislation. Between OECD countries (of which there are 35 including the EU-28), specific OECD regulations exist to govern the movement of waste, all of which are pursuant of the Basel Convention. A number of pieces of European legislation also exist to govern waste involving EU nations (imported into the EU, exported from the EU, or moved between EU nations), most notably Regulation (EC) No 1013/2006 on Shipments of Waste, which incorporates the provisions of the Basel Convention and the OECD regulations. In the UK, the Transfrontier Shipment of Waste Regulations (2007) is a binding piece of legislation which brings all of the above regulations and provisions into force, thus allowing UK courts to make rulings on practices within national jurisdictional boundaries.

As we can see, even from this relatively brief overview, the laws and regulations governing waste movement and management are complex. Understanding exactly which practices are permitted and which are not is not an easy task, and the number of regulations which exist by

nature means that there are almost innumerable ways in which to break them. This research paper will primarily be exploring the ways in which the Scottish waste management sector is vulnerable to specific types of crime which would be described by White and Heckenberg (2014) as *malum prohibitum*. That is to say, here we will be exploring how criminal groups, businesses and individuals are able to circumvent regulations and avoid enforcement in order to make illicit financial gains (Baird et al., 2014). We will be exploring not only *how* and *why* actors break laws governing the management of waste, but also the environmental impacts of such crimes on both local and global levels. This is an important task because the existing laws and regulations, ostensibly at least, exist to mitigate and limit the environmental and human harm caused by the disposal of waste (Basel Convention, 1989). Thus, if we are able to better understand and identify the vulnerabilities and loopholes within waste management sectors, we have a better chance of developing preventative techniques which reduce environmental harm and improve our circular economy (Van Daele et al., 2007; Baird et al., 2014).

However, it must be noted here that criminology should not singularly concern itself with crimes as defined by the state through national and international bodies of law (Loader and Sparks, 2012), even if these laws are ostensibly made in the name of public and environmental protection. Of equal importance is recognising that some of the most grievous harm to people and nature is perpetrated by powerful institutions, including nation states and multinational corporations. Criminology as an academic discipline has a hand in developing a narrative which has the power to influence social and political reactions to issues of harm and crime. In Stanley Cohen's (1988) essay collection *Against Criminology*, he derides criminology as an academic agent of the state, which serves to perpetuate social division and sustain the privilege of the powerful through creating a narrative about crime, which justifies divisive governance and political reaction. As Braithwaite argues from a somewhat Foucauldian stance, "criminology... is a creature of capitalism" (Braithwaite, 2011: 142). The concern

then, is that criminological output should take a lens to the relatively small transgressions of the people against the state, while drawing attention away from the much greater systemic harms perpetrated and perpetuated by powerful institutions (Cohen, 1988). Furthermore, there is the potential for research on crime to legitimise the expansion of crime controls. Particularly in this context, where we are exploring the gaps, loopholes and vulnerabilities in the waste sector, there is the potential that conclusions here will be seen to suggest the need for yet *more* regulation, legislation and enforcement (Hillyard et al., 2004). In the context of the environment, there is a worrying potential for green criminology to focus too closely on state-defined illegality, or *malum prohibitum*, and ignore the entrenched systemic and endemic environmental harms which arguably constitute *malum in se* – serious harms which are “inherently wrong by nature” (White and Heckenberg, 2014: 10). It is for this reason that much of ‘green’ criminological work has drawn from zemiological literature which takes social (and environmental) harms as its primary focus, recognising not only that *crimes* do not necessarily cause the greatest harm in society, but also that *criminalisation* is a harmful practice in itself (Hillyard et al., 2004).

This research has been embarked upon with the aim of adding something to the knowledge base surrounding the Scottish waste management sector, and its particular characteristics which make it vulnerable to organised crime. This research is thus concerned not with creating a narrative of problem and panic around those who are directly involved in waste crime, but more importantly with exposing the problems within the waste management systems and structures which facilitate and stimulate criminality. As will become clear, sector vulnerability studies concerns itself with understanding the procedures, structures, systems of governance and market characteristics which make particular economic sectors at risk of organised crime infiltration (Dorn et al., 2007; Baird et al., 2014). As Vander Beken and Van Daele

(2008) argue, to prevent organised crime within business sectors, we must study the ‘task environment’ rather than the actors themselves. Previous studies have demonstrated how poorly-conceived state policies and enforcement efforts have manipulated markets in such a way as to drive legitimate actors into illicit trading to maintain profit – for example, European regulations limiting the disposal of waste tyres inadvertently stimulating a large and problematic black market tyre economy (Baird et al., 2014).

2.3 - Theoretical Perspectives on Organised Crime - The 'organised criminal:' a rational entrepreneur?

A significant body of organised crime research draws from economic models and theories which have traditionally been developed to explain the nature of market processes and business activity. In fact, broadly speaking, it is widely accepted that organised crime exists for the purposes of making financial profit, and such an agreement between scholars and official bodies is rarely the site of theoretical conflict, even where other conceptual discord exists (e.g. Chambliss, 1978; Finckenauer, 2005; Albanese, 2011). Through such a lens, organised crime has been defined as: “a continuing criminal enterprise that rationally works to profit from illicit activities that are often in great public demand” (Albanese, 2011: 261). Such a perspective has been echoed by official, international public bodies. For example, the United Nations Convention Against Transnational Organised crime (UNTOC, 2000), defines an OCG as: “A group of three or more persons; existing for a period of time; acting in concert with the aim of committing at least one crime punishable by at least four years’ incarceration; in order to obtain, directly or indirectly, *financial or other material benefit*” (emphasis added) (UNTOC, 2000: article 2a). Similarly, the US State Department (2008) recognised in a special report that, although the structure and activities of organised criminal groups are changing, they still “have economic gain as their primary goal” (US State Department, 2008: 3). Official UK reports echo this sentiment; the UK Serious Organised Crime Agency (SOCA, now the National Crime Agency), published a report defining organised criminals as: “those involved, normally working with others, in continuing serious criminal activities for *substantial profit* (emphasis added)” (SOCA, 2010: 2). A significant portion of contemporary organised crime research is undertaken from the perspective that organised criminals are “rational, profit-oriented entrepreneurs, who are involved in activities that, though illegal, are driven by

the same laws of supply and demand as legal activities” (Kleemans, 2014: 2). While facing criticism as to its ignorance to social and cultural nuance, the illegal enterprise perspective can be logically supported by economic arguments making reference to fundamental supply-demand market processes (e.g. Smith 1980; Ruggiero and South; 2010). Smith’s (1980) influential theory on the ‘spectrum of enterprise’ looks to explain organised criminality as a profit-making project which exists within the same economic parameters as legitimate enterprise, but along a spectrum of legality. As Lyman and Potter (2007: 70) note: “there is a range of behaviour within which any business can be conducted. The legality of doing business is an arbitrary variable that can be changed by passing new laws.”

The ‘entrepreneur’ or ‘enterprise’ model of organised crime views criminals as logical, rational actors who engage in cost-benefit calculations when deciding to commit crime (e.g. Cohen and Felson, 1979). Rational choice theory is an essentially neo-classical perspective, which attempts to account for both micro- and macro-level decision making processes amongst individuals and groups (Hechter and Kanazawa, 1997; Bernard et al. 2010). In the field of criminology, the rational choice paradigm has been met with opposition from various critics who, for instance, argue that crime is motivated and mediated by emotion, risk and seduction (e.g. Jack Katz, 1988; Ferrell, 1997), social deprivation, labelling, power and criminalisation (e.g. Becker, 1963; Cohen, 1988), and race (e.g. Butler, 2010). Voices from these various theoretical camps deride the rational choice paradigm as overly-simplistic and culturally and sociologically ignorant. There is, further, the argument that rational choice theory, while potentially adequate at explaining overtly financially-driven crimes, cannot hope to account for crime in all of its manifestations (e.g. Bernard et al. 2010).

Rational choice theorists have attempted to refute these criticisms by expanding and clarifying their theories to account for the obvious complexities and nuances of crime across various social, cultural and political contexts (Hechter and Kanazawa, 1997). They claim that rational

choice theory within criminology remains a useful tool which accounts for the broad spectrum of diverse interests, needs and motivations which drive individual decision-making. It is argued that rational choice theory cannot predict individual decision-making without having a holistic understanding of a person and their particular individual traits and social situation. Rather the claim is that, on a macro-level, criminal decision making is predictable within the context of a large social group because commonalities in motivation and social context cancel out individual idiosyncrasies and variations in individual predilection and motivation (Hechter and Kanazawa, 1997). Much writing on rational choice thus focuses on the processes through which common values are developed, and the mechanisms through which these values then drive criminal decision making on a macro level (Hechter and Kanazawa, 1994; Chamard, 2013). As will be discussed, the rational actor paradigm is well-regarded in the field of criminal justice policy and law enforcement because it advocates a somewhat simple and evidence-based approach to crime prevention (see, e.g. Cohen and Felson, 1979; Chamard, 2013, on *routine activities*).

Adopting an ‘illegal enterprise’ model of organised crime with a rational actor basis very much fits contemporary understandings of the phenomenon, particularly within the spheres of public policy making and law enforcement. As pointed out earlier, ‘official’ definitions of organised crime amongst national and international organisations focuses on the notion that organised crime activity centres around behaviours which maximise gain (Levi, 2012). This ‘gain,’ need not necessarily be strictly financial in nature, but may also relate to the achievement of social status, political influence, or ethnic and cultural dominance, depending on the particular social milieu and environmental context (Paoli and Fijnaut, 2004; Finckenauer, Sukhareenko, and Lesneskie, 2011). It is broadly agreed, however, that enduring, organised criminal enterprises exist and flourish because of the market value of the service they provide, whether that be a strictly illicit product – e.g. drugs, prostitution, illegal gambling – or a licit

product traded illegitimately, such as security services, transport, or waste management (e.g. Morselli, 2010).

However, analysing the issue from a strictly economic perspective is quite useless unless we understand the nuances and complexities of the particular socio-economic system which any given group of organised criminals operate. History shows us that organised criminals often find footholds in a social system where traditional state power is weakened or easily subverted (e.g. Ekblom, 1999). For example, Russian and Balkan organised crime networks seized upon the power vacuums in ex-Soviet states following the fall of the Union post-Cold War (Finckenauer, Sukharenko and Lesneskie, 2011). Research indicates that political instability, poor governance, rapidly changing economic conditions and weak law enforcement and state regulation create ‘high-risk’ environments in which organised criminal enterprises are allowed to propagate and flourish (Vander Beken and Van Daele, 2008). Those writers viewing the issue through the lens of illegal enterprise theory suggest that, much like legitimate businesses operating in legal markets, organised criminals adapt and develop their enterprises in response to shifts in markets which are driven by broader social, political and economic trends (Lyman and Potter, 2007; Kleemans, 2014). As Lyman and Potter point out: “groups engaged in criminal enterprise are... flexible and highly adaptable to environmental impacts... [and] respond readily to the growth and decline of a market for a particular illicit good or service” (Lyman and Potter, 2007: 71). The characteristics of a particular social milieu thus shapes the form and nature of organised crime, often making it quite distinct across different localities (Levi, 2010).

The literature shows us that exploring organised crime through the lens of the ‘spectrum of enterprise’ (Smith, 1980) reveals similarities between the processes involved in illicit market activity at one end and legitimate enterprise on the other. The intertwinement of illegal and legal business activities should also be noted; there is a great deal of evidence to suggest that

actors and groups use legal enterprises alongside their illicit activities to facilitate other types of criminality (e.g. infiltrating the legitimate transport sector to traffic drugs) launder money through cash-rich businesses, ‘front’ for illegal operations, and provide legitimate, reportable income to reduce law enforcement suspicion (Lyman and Potter, 2007; Savona and Riccardi, 2015). Contemporary European research in fact suggests that organised crime activities across the continent are inextricably linked to legitimate business sectors; actors involved in illicit activities reportedly invest significant sums in a diverse variety of licit enterprises including construction and manufacturing, waste management, hotel, bar and casino management, transportation and logistics, private security, mining and even renewable energy (Ernesto and Michelle, 2015). The crime opportunities afforded by the prevailing market and regulatory conditions surrounding these sectors is precisely the focus of the ‘sector vulnerabilities’ approach to organised crime prevention. (Vander Beken, 2004; Vander Beken and Van Daele, 2008).

2.4 - The Sector Vulnerabilities framework and the waste management sector

Vulnerability studies is a relatively young and under-developed area of criminological research, primarily originating from North-European academic institutions in Belgium, the Netherlands, Germany, and Scandinavia. Vander Beken et al.'s (2005) influential 'Roadmap for Vulnerability Studies' sets out the conceptual basis for vulnerability studies as a means of analysing economic sectors to reveal organised crime opportunities. The approach is theoretically economic, viewing organised crime at least as a *profit-driven* enterprise in which *opportunity* for illicit gain provides the basis for most criminal decision making (Vander Beken et al., 2005; Van Duyne and Vander Beken, 2009). At its heart, sector vulnerability studies sees itself as an amalgamation of various economic and criminological theories, ultimately attempting to develop pragmatic preventative approaches to analysing legitimate business sectors and markets to understand how and why criminals operate within them (Vander Beken and Van Daele, 2008). It draws from Smith's (1980) 'spectrum of enterprise' theory as discussed above, which posits that licit and illicit business activities are driven by similar market forces, and thus criminal opportunities can be understood in the same way as traditional, licit ventures. It is somewhat unique in that it takes important theoretical pointers from research in economic science, pointing out that a genuine understanding of profit-driven organised crime activity must involve detailed analysis of economic activity in any given sector (Vander Beken et al., 2005). As discussed above, business activities are shaped by developments and shifts in the markets in which they operate, thus considerations about, for example, ease of market access, product price elasticity, governance and regulation, initial capital demands and competition should be made when attempting to understand the ways criminals infiltrate business sectors (Vander Beken et al., 2005; Van Duyne and Vander Beken, 2009).

The ‘Sector Vulnerabilities’ approach also draws quite extensively from criminological literature on ‘criminal networks.’ Within the context of organised crime, working from a sector vulnerabilities perspective, we can see how processes of globalisation have affected the ways in which criminals organise themselves to make profit. The global expansion of markets has led to new demands, new opportunities, and new competition for both legitimate and illegitimate entrepreneurs. The term ‘globalisation,’ now somewhat *en vogue* throughout many different disciplines, is often used to explain how events and processes across the world are becoming increasingly interconnected and networked (e.g. Castells, 2011). Katja Aas’ (2010) work on the globalisation of crime reveals how organised criminal activity is simultaneously global and local, relying on transnational exchanges of goods, services, capital and information which take place in various legal jurisdictions. The global nature of crime makes understanding and preventing it a complex affair, given that it challenges traditional nation-state boundaries of crime control (Aas, 2010). This spatial de-boundedness of crime leads to the dispersal of its consequences across global space in ways which previously would have been impossible (Castells, 2011). As Aas explains: “local harms are a product of a long chain of geographically often dispersed and un-bounded events and actions” (2010: 431).

Globalised contemporary markets demand greater levels of flexibility and adaptability, and such changes mean that contemporary ‘organised’ crime now must be understood in terms of a network. As Klerks explains: “the network mode of organisation between people and functional entities is far better adapted to modern modes of collaboration, trading and communication than the traditional hierarchical structures” (Klerks, 2001: 53). Different actors within market sectors, who may simultaneously be involved in both licit and illicit activities, thus make gain through sporadic and fluid interactions. These different actors may not be continuously associated with each other on any sort of formal basis, but rather ‘drift’ in and out of informal agreements in response to market demands and sector developments. This has the

dual effect of making criminal operations more clandestine, while increasing flexibility (Xu and Chen, 2005). The inter-connectivity between illicit and licit activity within market sectors such as the waste management industry often means that actors use their legitimate networks and operations to facilitate criminal operations (e.g. Lyman and Potter, 2007; Ernesto and Michelle, 2015). In fact, in the waste sector in particular, it is almost essential to have a legitimate stake within the market in order to enable criminal activity; for example a waste management company which is involved in illegal dumping of waste will still likely apply for a waste carrier licence and masquerade as a legitimate organisation to gain business, falsely advertise their intentions to manage the waste responsibly, and then dump it illegally either locally or overseas (e.g. Baird et al., 2014).

Previous academic attempts to uncover vulnerabilities in various different economic sectors have focused on categorisation of these vulnerabilities. For example, Van Daele et al.'s (2007) research in into the European waste management sector used a tool called MAVUS (Method for Assessment of Vulnerabilities of Sectors) in which they undertook a so-called 'three-tiered vulnerabilities scan,' looking at: i) the economic aspects of the market of the sector, ii) the broader environment (socio-political context) of the sector, and iii) the individual practices of businesses and criminals at the micro level (Van Daele et al., 2007). Their research thus categorises and vulnerabilities as either *product*, *regulatory*, or *business*. The research discovered that waste as a *product* is inherently vulnerable to criminality in a number of ways. Firstly, it has an inelastic price, and thus demand does not show a significant response to changes in pricing. As a result, waste services will always be required regardless of whether unscrupulous actors are involved in price-fixing or monopolisation activities, leading to the possibility of huge profits. Secondly, the physicality of waste means that it can be easily misclassified (classed as one type of waste when it is actually another), disguised or smuggled. For example, it was found that a common practice in Europe was for a waste producer

to pass hazardous waste to a carrier in good faith, only for that carrier then to change the documentation to indicate that the waste was not hazardous, thus making it cheaper and easier to dump. Once dumped in a landfill or shipped abroad, the actual quality or classification of that waste is then exceptionally difficult for regulators to detect.

Regulatory vulnerabilities were found in the European waste industry in that, while there was an underpinning regulatory framework, individual nations are able to set their own specific regulations, thus leading to national differences which are easily exploited by criminals. This often leads to differences in the priorities and activities enforcement and regulatory bodies between nations, making cross-border waste movements seriously vulnerable to organised crime (Van Daele et al., 2007). The research also found that environmental regulations, and the associated penalties for breaking those regulations, do not necessarily ‘fit’ the seriousness of the environmental crimes being committed. Some breaches of regulatory codes - for example failing to uphold the conditions of waste licences or permits - were handled by administrative bodies whose priorities were in ensuring compliance and increasing awareness in the sector rather than punitive enforcement. At times, it was found that major environmental crimes were being committed by businesses and individuals who were being dealt with through administrative controls rather than criminal law enforcement. The divide and disconnect between environmental regulators, and criminal law enforcement agencies, was revealed to be quite significant. As Van Daele et al. (2007) note: “criminal law enforcement agencies are in a difficult position. They are not designed to cope with the complexity, ideology and dynamics of environmental regulations.” (2007: 35). Baird et al.’s (2014) comprehensive vulnerability study of the waste sector came to similar conclusions. They noted that the physical nature of waste as a product, its price inelasticity, and its increasing global commodification created vulnerabilities to crime. Similarly, vulnerabilities were found in the regulatory envi-

ronment and in the general weakness of enforcement, which were seen to “stimulate criminality” (Baird et al., 2014: 98). Baird et al., (2014) argue that changes in legislation, made in the hope of increasing regulation in the waste sector and reducing crime, have actually facilitated and stimulated crime through driving up the costs of legitimate operations. As they suggest: “New legislation [leads] to higher environmental standards for treatment, leading to increased costs and therefore making illegal operations more financially attractive. In a competitive market for waste services, producers will seek the lowest price, creating the opportunity for illegal operators to undercut legitimate operators” (Baird et al., 2014).

Within certain waste streams, such as waste electronics, or WEEE (Waste Electronics and Electrical Equipment), specific vulnerabilities have been revealed by a number of European studies. WEEE, or ‘E-waste’ is regarded as a highly problematic waste stream both at local and global levels. Not only is this the most rapidly-growing waste stream in the UK and Europe (EIA, 2011), it is also one of the most globally harmful (UNEP, 2005). Van Erp and Huisman’s (2010) European research into the global trade of hazardous electronic waste demonstrates that WEEE stream-specific vulnerabilities facilitate the transfer of harm on an unprecedented global scale. Due to relatively strict regulations around the disposal and management of electronic waste, and the rapid cycle of production and consumption in the electronic goods market, developed countries produce vast quantities of end-of-life electronics which cost huge sums of money to properly treat and dispose of. Large profits can be made by offenders who take on lucrative recycling contracts and then instead send waste overseas. Often, this electronic waste is disguised and sold as second-hand, working electronics, targeting the burgeoning demand for cheap electronics in developing regions such as West Africa (Van Erp and Huisman, 2010; EIA, 2011). As Van Erp and Huisman (2010) note:

“Developing countries often lack the technology to process these wastes safely. Many electronic devices contain chemicals and heavy metals such as lead, polyvinyl chloride, or dioxins. These products often are dismantled at waste facilities or scrap yards that lack adequate protection for their employees” (Van Erp and Huisman, 2010: 579)

The detrimental consequences of such practices to human health and the natural environment cannot be overstated. It is quite clear that profit-driven enterprises in developing nations, coupled with ambiguities in legislation and ineffectual transnational law enforcement, leads to the transference of harm on a truly global scale.

2.5 - An overview of the Scottish waste management sector and its regulation

The waste management sector in Scotland is currently booming. While there is little data available on the overall economic worth of the Scottish waste industry, the UK industry is estimated to have generated £6.8 billion in 2015 – showing growth year on year since 2008 (Defra, 2015). In terms of waste generated, the Scottish Government and the Scottish Environmental Protection Agency (SEPA) collect detailed data on the amount of waste produced and how it is managed on an annual basis. The latest available data indicates that in 2015, Scotland produced a total of 11.63 million tonnes of waste from all sources (WFAS) – up 13.8% from 2014 (SEPA, 2015). In 2015, an estimated 6.26 million tonnes of this total waste was recycled (53.8%), which reflected an increase in recycling rate of more than 15% (SEPA, 2015). Due to the complexity and heterogeneity of waste management as a sector, it is difficult to provide a concise description of the different stages and practices involved (Baird et al., 2014). However, most waste streams follow a general process, from production

to treatment (e.g. landfill, incineration, recycling), which is multi-staged and involves local government and private contractors undertaking a diverse range of tasks.

In Scotland, waste is legally defined under the European Union Waste Framework Directive 2008/98/EC. It sets out the definition of waste as: “any substance or object in the categories set out in Annex I *which the holder discards or intends or is required to discard*” (SEPA, 2009). The range of possible waste materials is vastly diverse, however generally materials become waste once they serve out their initial purpose for the consumer and are then unwanted. The system of waste regulation in Scotland relies heavily on a waste classification process which determines how particular wastes must be managed and treated. Under licencing regulations, any business which intends to store, carry, sell, recycle or dispose of waste must ensure that they classify their waste properly under the European Waste Catalogue (EWC, 2002) classifications. Different types of waste are subject to different laws and regulations depending on their potential to cause pollution or harm to health or the environment. Hazardous wastes, for example construction wastes containing heavy metals, or electronic goods with dangerous components, are subject to particularly strict controls, due to their harmful potential. These strict regulations often mean that legal and safe treatment and disposal is expensive, opening opportunities for criminal operators to undermine the legitimate market.

Given that every business, individual and household produces waste of some kind, the issue of waste management and recycling has been identified as one of critical political importance in Scotland, and in the UK and Europe more broadly. The Scottish Government launched its ‘Zero-Waste Policy’ in 2010 (Scottish Government, 2010), which sets out a number of ambitious targets for Scotland over the coming years – including achieving a 70% waste-recycling

rate by 2025 - with the ultimate goal of creating more sustainable, environmentally friendly and economically profitable systems of waste management and recycling. This policy regime encompasses a broad range of developments and commitments, including promises to invest in new technologies and the recycling market, increasing awareness, adapting waste collection regimes, and strengthening and widening regulatory frameworks (Scottish Government, 2010). Included in the new strategy was the provision of extra funding to the Scottish Environmental Protection Authority to create a new enforcement team dedicated to tackling waste crime in 2014, further supported by funding from the European Union as part of an international effort to tackle the issue across the continent (Scottish Government, 2010; SEPA, 2017).

In Scotland, local authorities are responsible for collecting and managing municipal waste, and householders have a 'duty of care' under the Environmental Protection Act 1990 to ensure that their waste is disposed of properly, and that the collector of their waste is properly licenced and legitimate. 'Duty of care' regulations extend to businesses and organisations, who must ensure not only that their waste is disposed of properly and lawfully, but that it is segregated between different types of recyclate, stored safely, collected by legitimate carriers, and that controlled or hazardous waste is properly notified (Environmental Protection Act, 1990; Waste (Regulations) Scotland 2012). Local authorities and private businesses which manage, store, carry, or sell any type of waste must apply for a waste management licence through the Scottish Environmental Protection Authority (SEPA), which is granted under the provisions of the Environmental Protection Act (1990), the Control of Pollution (Amendment) Act (1989), and the Waste Management (Scotland) Regulations 2012. Only those local

authorities and businesses who hold such licences can legally take hold of, carry, dispose or recycle of waste. Importantly, holders of waste licences must stipulate exactly what type of waste they intend to carry, and are subject to assessment by SEPA at any time to ensure that they are fulfilling the terms of their licences and managing waste responsibly and legally.

Chapter 3 - Methodology

This research took the form of a small-scale qualitative study, using data collected through semi-structured, selective face-to-face (4) and telephone interviews (2) with professionals working for a Scottish Government-funded environmental protection and enforcement organisation. The total number of interviews was 6, and each lasted between 45-80 minutes, during which a semi-structured interview approach was adopted. Lines of questioning in each interview were all guided by a pre-prepared interview schedule (Appendix ii), which provided a basic structure for the data collection. All interviews were audio recorded for later analysis; audio recordings were stored confidentially as per explained on the ethics form (Appendix i), plain language statement (Appendix iii), and consent form (Appendix iv), all of which were provided to participants prior to interview. All interviewees agreed to be interviewed and audio-recorded by signing consent forms which were retained by the interviewer.

The decision was taken to use this methodology because the open and semi-structured style of interview allowed divergence from core questioning, and thus facilitated richer and deeper discussion of themes which arose in the course of the interviews (Vaismoradi et al., 2013). Such interviews allow “the respondent to talk freely around the topic [and] can produce rich grounded data” (Davies et al., 2011: 104). A highly structured, closed approach to interviewing would have precluded an in-depth exploration of emerging themes, and ultimately would have provided limited insight into the experiences of the interviewees (Braun and Clarke, 2006). Furthermore, a more structured approach may have constrained interviews to discussion around questions and themes which were not necessarily the most relevant or salient to the interviewees’ experiences of the issue being explored, particularly given that the researcher in this case is relatively inexperienced in the field (Davies et al., 2011).

Once data was collected, a thematic, inductive approach to analysis was used, during which data was reviewed and themes identified. Thematic analysis of qualitative data involves reviewing it (listening to recorded interviews and reading transcripts) and choosing elements of the data which form some kind of pattern, and which respond in an interesting and meaningful way to the interview questions (Braun and Clarke, 2006). It must be recognised, however, that themes do not exist within the data already, and do not simply ‘emerge’ passively, but must be actively chosen and constructed. Thus it is evident that there can be analytical bias on the part of the researcher here, in that themes are identified which are believed to be particularly interesting, or appear to ‘fit’ with previous ideas about the topic at hand (Braun and Clarke, 2006). While the data collection and analysis process was somewhat explorative and inductive, it must be noted that themes were identified as a result of particular interview questions which were theoretically driven, in this case focusing specifically on the *vulnerability* of the Scottish waste management sector, and *adequacy* of legislation and enforcement in tackling crime.

The general research questions were:

- What type of illegal activities take place within the waste management sector in Scotland?
- Does the waste management sector in Scotland have particular characteristics which make it vulnerable to infiltration by organised criminals? What are these characteristics?
- How are these activities investigated and prevented, and are the existing legal provisions and law enforcement systems adequate in preventing and tackling waste crime?

Beyond this, the lines of questioning broadly followed the pre-planned interview schedule (Appendix ii), however at times discussion deviated from this structure when particularly interesting themes were brought up which had not been foreseen.

Fundamentally, this research sought to explore the reality of criminality in the Scottish waste sector. While attempts were made to reach out to private operators working as waste managers, waste carriers, and recycling managers in the sector, unfortunately such efforts received no response. It is unclear why no responses were received from private operators, however it is possible that the time and effort demands of an interview (60-90 minutes) simply meant that those working in this field were too busy or not prepared to take part. It should also be considered that, given the criminological nature of this research, private operators may have been put off by what they may have perceived as a potentially pejorative or intrusive discussion about their operations in the sector. Furthermore, if any of the operators to whom I reached out were involved in some form of criminality, it is understandable that they would not be interested in taking part in criminological research, possibly due to their perception of it being linked to the criminal justice system, or fears of their clandestine activities being made known to law enforcement (e.g. King and Wincup, 2000). Gaining access to professionals working in the environmental protection and law enforcement field was easier. Access was initially brokered through a contact at the University of Glasgow, who facilitated early exchanges and vouched for the legitimacy of the researcher. Following this, various professionals working in the same government-funded organisation were reached out to via email or telephone. A range of staff were reached out to for interview based on the diversity of their job type (respondents included environmental protection officers, producer waste compliance officers, intelligence officers, intervention officers, and managers leading teams specifically exploring both domestic waste crime, and transfrontier shipments of waste).

The interviewees' expertise in the fields of waste management, environmental crime, and waste sector vulnerabilities, meant that the data collected was rich and highly specialised, allowing deep and specific information to be collected about the topic at hand. However, qualitative criminological interviews have been critiqued by some as problematic due to the fact that they are not factual accounts but essentially narrative constructs; the responses of interviewees involved in issue under investigation are not necessarily reflective of reality, but are rather stories created by people through which their perceptions, values, and feelings are expressed (Fontana and Frey, 2000; Myers and Newman, 2007). It is here of course that the reliability of qualitative research is problematic, because it is hard to define what this means in reference to data collected from interviews (Golafshani, 2003). However, *dependability*, *credibility*, and *trustworthiness* are concepts which have been used previously as indicators of 'good' quality research, and this research arguably demonstrates such characteristics (Lincoln and Guba, 1985; Golafshani, 2003). Given that this research study used interview data from professional, experienced and expert respondents in the field under study, one could argue that the data is credible and trustworthy. Furthermore, as will be discussed, the data is *consistent*, both internally (i.e. similarity in data collected from different interviews), and externally with the existing body of research, which suggests the data is of good quality. However, it must be recognised that there is a significant bias inherent in this research given that data has been collected solely from respondents who are employed by a government-funded organisation. Collecting data exclusively from governmental employees in the criminal justice system presents a danger of giving a voice to the powerful, and sustaining an existing narrative, while ignoring the lives and stories of those who experience the reality of crime (King and Wincup, 2000). This research could be improved significantly if interviews had also been undertaken with perpetrators of offending in the waste sector, and with victims of waste-re-

lated crimes. This would have allowed a comparison of perspectives and may have gone further in uncovering the nature of criminality in the waste sector, and the ways in which it affects communities. The quality of this research could have been further improved through the use of case study analysis, which has been used widely as a criminological method of exploring ‘scripts’ and vulnerabilities, particularly in relation to organised crime (e.g. Morselli, 2010). However, while attempts were made to source case study data about Scottish waste crime, much of what was publicly available was disparate and of limited detail, generally reported by media rather than official sources. Data of past waste crime cases was either held by law enforcement and restricted, or was published by periodical journals which required payment to access historical archives. While the analysis of a small number of case studies may have been possible, such analysis would not have given a comprehensive overview of the issue, instead only providing ad-hoc data where it was available or accessible, and thus not being scientifically rigorous (Yin, 2014). Previous European research into waste criminality has also found that environmental protection agencies often focus on ‘soft persuasion’ and advice, using enforcement and prosecution as a last resort, and therefore there is very little publicly-available information published about cases of waste criminality. As Vander Beken and Van Daele (2008) discovered in their research:

“Information from inspections and discussion with economic operators are not made available in detail. Even if inspectors saw and knew everything (which they cannot), still it would not be any part of their job to put detailed information into the public realm” (2008: 743).

It was thus decided that an interview-based approach to this research would be most profitable, given that themes could be drawn from discussions with various professionals working to tackle waste crime. As experts in the field who were prepared to talk about their experiences

and professional tasks, it was felt that such an approach would provide richer and more detailed data about the phenomenon of waste crime in Scotland.

Chapter 4 - Findings and Analysis

4.1 – Product vulnerabilities: the revaluation of waste as an opportunity for organised crime

One of the themes clearly identified throughout the course of data collection was the notion that certain types of waste are inherently vulnerable because of their physical characteristics and the ambiguity of classification. In Scotland, three waste streams in particular were identified as problematic by all the interviewees: mixed waste paper, waste tyres and waste electronic and electrical equipment (WEEE). A number of interviewees explained that illegal activity in these particular waste streams is high in part due to the physical nature of the waste. Two interviews with intelligence development officers focused strongly on the waste tyre industry, and a number of vulnerabilities were discussed which could be described as *product* vulnerabilities. Firstly, they noted that certain producers of waste tyres – most commonly small garages throughout Scotland – have significant difficulty in storing their waste product.

As one interviewee explained:

“there used to be a waste tyre exemption, where small garages could store up to a thousand tyres – maybe a couple of weeks’ worth - but then in September last year that was removed, and the industry is kind of split on this.” (Intelligence Officer, environmental protection)

Tyres are physically quite cumbersome objects to store, and for small businesses, space can be at a premium. However, as the interviewee explained, prior to September 2016, businesses had a regulatory exemption which allowed them to store up to a thousand tyres in their premises while they arranged for collection. This has changed following the passing of more recent regulations, meaning that small garages, even if they do have the space, are no longer

permitted to store their waste tyres before collection. As such, waste collections must be arranged on a regular basis to ensure that tyres do not build up and cause regulatory issues for the garage. This opens up opportunities for organised crime, because illicit waste collectors know that small garages will constantly need waste tyre collection services, and regular legitimate collections can be costly.

As an interviewee pointed out:

“You’ll get people going to businesses offering to take away their tyres for 50p, which obviously isn’t financially viable” (Intelligence Officer)

It is clear that such an offer would indicate some form of illegality on the part of the waste carrier – 50p per tyre would not cover the cost of legitimate disposal, and thus would not be a profitable enterprise. However, interview data suggests that such unscrupulous waste carriers simply dump the tyres somewhere and move on, walking away with the profit:

“They could be picking [tyres] up and putting them in a layby somewhere” (Intelligence Officer, environmental protection)

One official pointed to small scale cases where carriers collected tyres and then dumped them in secluded places or on other peoples’ land before moving on with the profits. The interviewee also identified much more significant cases where thousands of tyres had been found stored in warehouses and yards without any sort of permit or safety procedures in place. One case was discussed where a Scottish tyre recycling firm was found to have stored upwards of 100, 000 tyres in an illegal site adjacent to a hospital, school, and heavily populated residential areas. The tyres were stored in such a way that a fire could have posed a severe threat to people in the surrounding area and would have caused massive air pollution. In this case, the director of the company was jailed for 14 months under the Environmental Protection Act 1990 for illegally dumping waste. While in this case, there was no direct harm caused to the

environment or public health, the potential to do so was significant. The removal of the tyres also cost the public purse “hundreds of thousands of pounds” (intelligence officer). In this example, an unscrupulous tyre business involved in collecting waste tyres from small garages, took advantage of the constant demand for tyre removal to make significant profits through failing to responsibly manage the waste. This is clearly a form of serious and organised crime, whereby a business operator developed a network of clients and staff, organised a logistically complex and ongoing collection process, and intentionally broke the law to make a significant profit.

Remaining on the theme of *product vulnerabilities*, interviews identified opportunities for crime through re-valuation of waste products. The very nature of *waste* means that the producer has determined that a particular product or material no longer has any value or use. Given that waste ceases being valuable to the producer, the level of responsibility and care they take for that waste is significantly diminished. Interviewees identified issues in both waste electronic (WEEE) and waste tyre streams whereby a waste producer’s lack of care provided opportunities for entrepreneurial criminals to find value in the waste and then identify ways to profit from it. One environmental protection officer talked extensively about an issue in WEEE streams at the point of waste collection:

“If you have a fridge that’s knackered, you call the council and they tell you to put it out on the kerb on a certain day. These guys [unlicensed carriers] will just go around in a van and pick up the fridge. They’re just men in white vans, and they know they can pick up a fridge and sell it to an exporter for a tenner [£10]... they’ve picked it up because there’s a financial incentive, and they’ll take it to a business who deals in electronics or components. These are the waste electronics that go missing. Householder discards it, council never pick it up, they go, ‘fine, not our problem anymore’” (Environmental Protection Officer)

Here we can see a situation where a householder has intended to discard a piece of electronic waste – the ‘knackered’ fridge – because it no longer works and has no further value to them. The local authority offers a legitimate collection and waste management service, where they intend to take the fridge to a recycling plant where parts can be recycled, and hazardous components treated safely, but they don’t have the resources to ensure that every piece of waste ends up in the right hands. A third party – an unlicensed waste collector with a van – comes along on the day of collection and picks up the fridge illegally, knowing that the electronic parts still retain some value, and they can sell them to the right buyer for a mark-up. These collectors have no waste carriers’ licence and have no intention of ensuring that the waste gets dealt with responsibly. As the interviewee pointed out: “they’re not doing it out of the goodness of their hearts, there’s a financial incentive” (Environmental Protection Officer). Considering that their illegitimate collection operation has very few overheads, they can make an immediate profit by selling essentially ‘stolen’ waste.

Further examples of such a problem were identified in the waste tyre industry. One interviewee discussed an opportunity whereby criminals steal waste tyres from small garages and sell them:

“Someone will scale the wall [of the garage] and steal tyres which look like they might have some tread left on them. Someone will steal that tyre to sell it as a part worn tyre, although it shouldn’t be valuable because it’s come off your car for a reason.” (Intelligence Officer)

The phenomenon being alluded to here is the opportunity for waste tyres to be re-valued as ‘part-worn’ tyres and sold to car-owners for cut price. There is a legitimate market for part-worn tyres, as long as they have been tested and have a minimum tread-depth and aren’t unsafe to drive on:

“It’s got to have a minimum tread and that’s when you get a certification stamp on it. But you can buy a part worn tyre stamp from Ebay (sic) for £20” (Intelligence Officer)

Interviewees identified a vulnerability whereby used, dangerous tyres are sourced from waste tyre producers, and passed onto garages which specialise in selling part-worn tyres. While some of these part-worn tyres might be safe to use, many are not. They defraud consumers by illegally stamping the tyres as safe and legitimate second-hand goods, when in reality they are unsafe to drive on. This is an offence under the Motor Vehicle Tyres (Regulations) 1994. Interviewees discussed how operations of this type can be undertaken on a significant scale:

“You’ve got people bringing tyres in from abroad and they’re making 2, 3 times as much as they spent. They’re bringing a bulk container in with 15,000 tyres.” (Intelligence Officer)

There is a clear product vulnerability here in regards to waste tyres, because it is very difficult to determine whether a tyre is ‘waste’ or not, without taking time and using specialist equipment to check tyre depth. As the interview data suggests, such criminal operations are organised on both a local and global scale, with thieves stealing tyres from local garages, and major importers bringing in whole containers from abroad and selling them illegally. An interesting point was noted by one interviewee, who talked about differences in tyre regulations in Europe and how this has opened up an international market for used tyres. Germany in particular was identified as a source of used tyres, because they have different regulations for tyre depth than the UK. This means that tyres identified as waste in Germany, due to them not meeting regulation tread depth, have value in the UK as part-worn tyres. Interviewees talked about their experiences of investigating operations where German waste tyres were bought for resale, however it was impossible to accurately estimate how many of the tyres were actually legal to sell.

As one interviewee noted: “You couldn’t go through a whole container of tyres and measure and classify them all.” (Intervention officer)

The potential for harm here is significant, as another interviewee pointed out:

“People have been killed in accidents because they’ve had part-worn tyres with low tread. Garages selling part-worns won’t bring issues to your attention.” (Intelligence Officer)

The potential for revaluation and re-use of waste products is of course a positive from the perspective of developing a sustainable, circular economy, as discussed earlier in the literature review. However, this revaluation potential can manifest itself as criminality in certain waste streams, and end up causing significant environmental harm. The waste electronics (WEEE) sector in Scotland reportedly sees considerable organised crime infiltration, with operators exploiting the potential to disguise and advertise end-of-life waste electronics as genuine, working second hand goods and selling them for profit. As discussed earlier, there is a booming market for second-hand electronics in Africa, and businesses in developing countries have identified the potential to make profit by exporting cheap, usable electronics. Earlier in the literature review (section 2.3), the regulations controlling the export of waste to developing countries were described. In essence, it is legal to export and sell *working* electronics to developing countries, however *waste* electronics are generally classified as hazardous and thus exporting them is prohibited. The vulnerabilities in this area lie in the potential to misclassify electronic waste as genuine second-hand electronics, and then send it overseas where there is inadequate infrastructure to treat it safely.

One Environmental Protection Officer explained the issue:

“To ship second-hand electronics to Africa, you need to carry out functionality testing, so we can carry out PAT [Portable Appliance Testing] testing to make sure it’s fit for export and re-use”

He explained how exporters of electronic goods need to notify environmental agencies of their intentions and ensure that their goods have been tested certified for export. However, even when exporters do notify officials of their intention to export, they can often still breach legislations. He explained further:

“If the exporter says to me ‘I’m loading today’ and I’ll go down and have a look, but it’s just a snapshot. It might sit there for days, and they might think ‘[the inspector] has been down and had a look, I’ll just load this waste anyway, because it’ll cost too much to get these fridges or whatever disposed of properly.’” (Environmental Protection Officer)

The vulnerability lies in the clear opportunity to add waste electronics into legitimate exports of second hand goods, in order to avoid expensive waste treatment costs. A waste broker who intends to export abroad may collect a whole range of electronic goods, some of which is waste, because it is much cheaper to source. Earlier in this section we discussed the practice of small-scale offenders collecting waste illegally from householders, and then selling it on to brokers who export the goods. These brokers often defraud importers in developing countries by falsely advertising their goods. As an interviewee explained:

“There’s a vulnerability there because the [importer] only sees a snapshot of [the waste], there’s over-reliance on the visual” (Environmental Protection Officer)

However, in one official’s experience, exporters are quite adept at laundering waste electronics into genuine second-hand goods exports, thus essentially finding an illegitimate means of getting rid of waste while making a profit:

“These exporters will dress containers, so for example they’ll take a fridge-freezer, put a PAT test sticker on it, wrap it in cellophane, and it looks perfectly usable, but it’s not until you open it up and you find broken kettles, microwaves etc. which are waste because they haven’t been tested.” (Environmental Protection Officer)

The same official explained that such a practice is easy because of the limited resources available to keep an eye on shipments, and the fact that the onus is on the exporter to inform environmental agencies of their intentions. Those exporters who genuinely intend to break the law won't inform agencies of their shipments, thus making it extremely difficult to detect. Once a container gets to port, it might be inspected by port officials, but such officials again rely on visual checks and don't have the requisite equipment to test electronics. If it looks acceptable and it matches the consignment description as second-hand goods, complete with PAT-test stickers, it will usually be allowed through. Another official described the problem of regulating the issue:

“I work Monday to Friday, and most exports actually take place at the weekend, so often I won't get out to do testing... The onus will always be on them to tell us - they're fully aware [of the regulations], we've given them guidance. Sometimes there's just pure illegality and we don't know anything about it” (Environmental Protection Officer)

This ‘illegitimate revaluation’ of waste does not apply only to the misclassification and sale of waste as second-hand goods. All of the interviewees highlighted the problem of the misclassification of waste as a means of avoiding regulatory controls and treatment costs. One intervention officer gave examples of cases whereby illegally-run waste management businesses would take contracts to dispose of hazardous waste and intentionally mis-describe it:

“[a business] will produce highly toxic waste that's controlled, and it's given to a waste carrier to take from A to B and it costs however much per tonne to get rid of that in an environmentally friendly manner, but the whole self-regulation system [is a problem]. The carrier can change the classification and stick it in the ground.” (Intervention Officer)

There are clear profits to be made from mis-classifying waste. As this official points out, there is a degree of ‘self-regulation’ where by the waste carrier produces a paper-trail of

waste transfer notes describing the waste they have disposed of. If they falsify these documents, it is possible to get away with illegal dumping of hazardous waste. This is often facilitated through employing ‘insiders’ at legitimate waste sites, who take kickbacks in exchange for turning a blind eye to waste which has been misclassified. Similarly, waste collected by private disposal organisations is sometimes fraudulently added to waste collected by local authority at waste treatment facilities, thus saving the criminal organisation a great deal of money in landfill tax avoidance, particularly if the waste is hazardous. As an intervention officer explained:

“Businesses will pay the [illegal waste collector] to collect their waste and they then add it to council waste, and the public purse pays to put it in the ground... all they need is a corrupt employee at the landfill... It’s not a high earning sector, so the ability to corrupt is high, and the influence of OCGs is high in local areas.” (Intervention Officer)

Misclassification of waste does not only take place at the local level through corruption and fraud. One expert in transfrontier shipment of waste explained how the global commodities market facilitates illicit profits to be made through mis-classifying waste export shipments:

“By and large, say if you want to export a load of cardboard or mixed paper, you might get a better price outside the UK, because there is too much supply in the domestic market, and the mills would say we’re at capacity, or the price is lower abroad” (Environmental Protection Officer)

The opening of global markets adds another dimension to waste crime, and the potential for it to provide significant profits to illegitimate businesses is accompanied by the potential to cause environmental harm on an international level. In regards to the mixed-paper waste stream, the official added:

“If you export a considerable consignment of waste paper for example, there’s a lot of money to be made out of it. At the moment, it’s [worth] about £100 a tonne [abroad], and you’re buying it from a local authority for about £30 or £40 a tonne, and you decide not to treat that waste appropriately, there’s a considerable mark-up to be made” (Environmental Protection Officer)

A waste paper exporter may intentionally cut costs by simply classifying their mixed paper waste as having a low-contamination rate, thus allowing it to travel as ‘greenlist’ (non-harmful) waste. However officials’ experiences revealed that such waste is often mis-described and potentially harmful:

“Mixed paper has historically been seen as poorly sorted and heavily contaminated, so there’s a high risk in the sense that it moves under ‘greenlist’ whereas it should be notified [as hazardous] in some cases... [the waste operator] might cut corners and maybe haphazardly treat it and then bale it [package it], so then within that bale you might have higher contamination rate” (Environmental Protection Officer)

Thus in this situation, a waste operator will purchase mixed paper from a local authority on a contract for a certain cost per tonne. That operator then *should* legally be treating the waste in such a way as to remove contaminants safely in order to qualify it for export. However, such treatment raises overheads in the process, and thus to cut costs and increase profits, the waste operator will export the waste to a business abroad – such as a paper mill which values uncontaminated paper highly – and describe that waste on the relevant paperwork as ‘greenlist’ and uncontaminated. Since there is very little difference between contaminated and uncontaminated waste from a visual perspective, port authorities often have little reason to alert environmental protection agencies. Once the waste reaches its destination, there is often a communication breakdown between relevant authorities and much of the time such offences are

not reported and don't become known to Scottish environmental agencies. We can see here how vulnerabilities in the *physicality* of waste, coupled with the potential to re-value waste as a commodity in global markets, opens up significant opportunities for organised criminals to make large profits

4.2 – Regulatory vulnerabilities in the Scottish waste management sector

As discussed previously in section 2.3, the Scottish waste management sector is regulated fairly heavily, and there is a complex array of different pieces of legislation, guidance and regulation which cover practices at every stage of the waste management chain. One of the main themes which was identified from interview data was the issue of waste management *licencing*. As noted above, local authorities and private businesses which manage, store, carry, or sell any type of waste must apply for a waste management licence through a government-run environmental protection organisation, which is granted under the provisions of the Environmental Protection Act (1990), the Control of Pollution (Amendment) Act (1989), and the Waste Management (Scotland) Regulations 2012. One of the issues identified in the licencing procedure was the ease by which new businesses and individuals can enter the waste management market.

As an intervention officer explained:

“They apply for a waste carriers licence, we can't refuse it, they can do it [apply] online unless they have a conviction under the EPA 1995. They can do anything after that.” (Intervention Officer)

This interviewee flagged up the fact that it is relatively easy to apply for, and be granted, a waste carriers' licence. It is simply an online process whereby the applicant provides some simple details about what type of waste they intend to carry or store. Waste carriers' licences can only generally be refused if the applicant, or a director, executive or partner of the business in question, has a previous conviction for an environmental offence under the Environmental Protection Act 1995. The interviewee noted that there is a 'fit and proper person check' that is undertaken when a licence is applied for, however the requirements to pass this are fairly minimal:

“The problem is there's a fit and proper persons test under the regulations. To refuse a licence they require to have a conviction under the Environmental Protection act. If they had those convictions they wouldn't apply. Some of the people applying for licences have significant criminal backgrounds.” (Intervention Officer)

The interviews revealed a so-called “chink in the armour” of the licencing process, whereby an individual with a serious criminal past, with numerous previous convictions for organised crime offences, can be granted a waste carriers' licence with only the baseline level of oversight and management. One environmental protection officer had the view that such a system made the sector severely vulnerable to organised crime:

“The government is looking to let businesses flourish, so they'll be provided with every opportunity to comply with regulations. My argument is, you wouldn't give them a shotgun, so why give them a company to go and play with and screw the public purse and everyone else”

The same interviewee held the view that waste crime needs to be tackled less through regulation and licencing oversight, but rather through tougher investigation and enforcement:

“When you're dealing with serious and organised crime groups, you have to deal with it as enforcement, not as regulation... however the waste sector is a regulated area of business.

When you're dealing with these groups, there's no point in even starting with regulation, because they're not there to be regulated, they're there to break the law" (Intervention Officer)

One official noted:

"The profits to be made outweigh the risk of getting the jail. I think the legislation needs to be toughened up. I think the penalties need to match the profits made. If you're making £2 million dumping illegal tyres, and the public purse has to pay to clear that up. That should be regarded as a £2 million fraud where you should be sentenced to prison" (Intervention Officer)

It is clear that the waste management sector is subject to a significant amount of regulation, however there is a pattern to be seen here where interviewees have identified problems with the effectiveness and adequacy of this regulation in tackling organised waste crime. Section 2.3 of this paper gave a brief overview of regulatory activity in the Scottish waste management sector. Statistics show that in 2015-16, 90.4% of assessed licenced waste activity was compliant with regulations. However recourse to non-compliant activity was found generally to take the form of warnings or notices, rather than prosecutions. Part of the issue appears to be in the ability to actually assess and regulate the vast number of waste-related activities that take place in Scotland on a constant basis. One environmental protection officer, whose job included undertaking licencing compliance checks at waste management sites, pointed out:

"We're only a finite resource, we're stretched, and we can't be everywhere all the time." (Environmental Protection Officer)

The same official, discussing the difficulties experienced in checking export shipments of waste, noted:

"Because of the number of shipments that leave Scotland on a yearly basis, it's massive, we can't check every load." (Environmental Protection Officer)

A different officer, as quoted previously, noted:

“The onus will always be on them to tell us, they’re fully aware, we’ve given them guidance. Sometimes there’s just pure illegality and we don’t know anything about it.” (Environmental Protection Officer)

A number of officials interviewed shared the view that the existing legislation does not provide enforcement agencies with the adequate power to tackle organised waste crime, with the regulatory framework instead focusing on engaging with and advising non-compliant businesses.

One issue that was brought up by a number of officials interviewed was that of ‘duty of care’ regulations. These regulations were discussed briefly in section 2.3 of this paper. In short, actors at every stage of the waste process – householders, businesses, waste collectors, brokers, exporters, recyclers – have a duty to ensure that any waste they handle is disposed of lawfully and responsibly. This means that a waste-producing business must arrange for its waste to be passed to a legitimate collection business which is able to demonstrate its capability to manage it safely and legally. As one official pointed out in regards to the waste tyre sector:

“you produce waste so it’s your duty of care to make sure the next person in the chain deals with it responsibly, but not everybody complies with that because they might not be aware of [what happens to the waste next], or they might not want to because it will cost them more money.” (Intelligence Officer)

The main issue with duty of care regulations appears to be the fact that it is easy to masquerade as a legitimate waste carrier or operator, and thus convince waste producers that they intend to manage the waste responsibly and safely. As one interviewee pointed out in regards to businesses passing waste on to carriers:

“The businesses obviously still have a duty of care over that waste, but their argument will be: ‘I gave it to a licenced waste carrier and there are the waste transfer notes,’ and there’s not sufficiency in the way that [the licences] are controlled”

Another official suggested that, in regards to the duty of care: “there is a culture in the waste management sector; ‘when it’s gone, it’s gone.’” (Environmental Protection Officer)

Chapter 5 -Discussion

5.1 – Scottish waste crime and harm

In the above analysis of the data, a number of themes have been identified which conceptually fit with the initial stated aims and research questions of this project. This research has primarily sought to identify and understand the aspects of the Scottish waste management sector which make it vulnerable to criminality. In the literature review found in Chapter 2 of this paper, the notion of *harm* was discussed, and relevant pieces of research were identified to support the view that crime within the waste management industry has the potential to cause serious harm to the environment and human health on a local and global scale. White and Heckenberg's (2014) work on 'green criminology' points out that an important element of research in this field must involve the exploration of *malum prohibitum* - illegal acts which break environmental laws. These illegal acts have the potential to cause significant degradation or damage to the natural environment, and often human safety and health. The various Scottish waste crimes discussed in the above analysis stage as discovered through first hand data collection, support the view that prohibited acts which contravene environmental laws do cause significant harm. To briefly overview:

- Waste tyres: dumping tyres illegally is unsafe and harmful for a number of reasons. If a large number of tyres are stored without proper regard for fire safety, they can easily combust, releasing toxic fumes into the atmosphere and putting people in surrounding areas at serious risk (e.g. Eunomia, 2017). The fraudulent sale of waste tyres with poor tread depth as second-hand part-worn tyres can put road users at risk of accident.

- Waste electronics and electrical equipment (WEEE): electrical goods are inherently hazardous because of their component parts, which often consist of dangerous heavy metals and other toxic substances which must be treated properly and extensively in order to limit the environmental harm caused by disposal. When waste electronics are illegally sold as second-hand goods and exported to developing countries, they often end up in hazardous dumping sites, or at inadequate treatment facilities which use dangerous and polluting processes to remove valuable components. Such criminal activity can lead to pollution and environmental damage on an international level, and harm local communities.

- Mixed-paper waste: when it is exported, mixed paper waste is generally described as ‘greenlist’ or non-harmful. However, if contaminated paper waste is mis-classified as ‘greenlist’ to avoid treatment costs, toxic consignments of waste can end up in non-OECD countries where contaminants cannot be treated safely. Contaminated mixed-paper waste which cannot be used for genuine recycling purposes must often be disposed of through incineration or landfill, potentially causing pollution and environmental harm.

The notions of *harm* and *crime* in the context of waste management carry with them a degree of conceptual uncertainty, because it could be argued that on a macro-level, society is inherently wasteful and thus inherently harmful to the natural environment (O’Brien, 1999). It is, however, necessary to draw legal boundaries to determine which wasteful practices should be permissible and which should not. White and Heckenberg (2014) argue that: “environmental crime frequently embodies a certain ambiguity... it is judged in the context of cost-benefit analysis... this goes to the heart of why environmental crime is consistently undervalued in

law” (White and Heckenberg, 2014: 8). Environmental legislation and regulatory frameworks are thus not designed to prevent us from harming the environment *per se*, but rather seek to prohibit and criminalise those activities which cause disproportionate harm relative to their potential economic or social benefits. It is therefore important to recognise that there is a spectrum of wasting practices which attract different levels of legal oversight and penalty. ‘Legitimate’ and ‘illegal’ waste activities are only distinguished – often somewhat arbitrarily - by law; we should not view non-prohibited waste activities as *harmless*, simply because they do not fall foul of regulations.

5.2 – vulnerabilities to organised crime in the Scottish waste sector

Previous research into vulnerabilities in waste management sectors has distinguished between different types of vulnerability. One theme in the literature is the identification of *product vulnerabilities* – characteristics of the waste products themselves which provide opportunities for organised criminals to profit (Vander Beken et al., 2005; White and Heckenberg, 2011; Baird et al. 2014). The data collected in the course of this research allowed identification of a number of criminal opportunities which could be described as product vulnerabilities in this vein. In particular, issues were found to arise in a number of problematic waste streams due to the potential for waste products to be re-valued and re-entered into the market. Of course, revaluation and recycling are generally considered positive from both economic and environmental perspectives, and they are central to developing a ‘circular economy’ (O’Brien, 1999; Andersen, 2006). From a broader anthropological or sociological perspective, we discussed earlier how the value of any given object or material is subjective, and can assume different

values in different contexts, timelines, and localities (Douglas, 1966; O'Brien, 1999). The potential to re-value waste materials thus presents the opportunity for them to be re-entered into the economy. Where this re-valuation and re-use can be achieved, there are significant profits to be made.

The issue in relation to crime is that the development of the circular economy – stimulated by technological advances, growing environmental concern, and the opening of global markets – has given criminals opportunities to flourish and profit. A number of criminal opportunities were identified by interviewees in the course of this research, and an overriding pattern in each of these opportunities was the fact that a market existed within which to trade and make profit. For example, those fraudulently classifying waste electronics as genuine working goods sought to exploit the global market for cheap second-hand electronics, and recognised that the physical nature of such waste made it easy to disguise and misclassify. A similar theme was observed in certain types of tyre crime, where waste tyres were being fraudulently re-sold as safe, drivable part-worn tyres, with criminals recognising the potential profit to be made in the second-hand tyre market. In all cases of organised waste crime discussed during interview, the opportunity to make financial gain was the key driver, and waste criminals generally saw their activities as low-risk, high-reward due to the relatively forgiving regulatory and enforcement environment. This fits well with theoretical perspectives on organised crime which view criminals as rational entrepreneurs who make cost-benefit calculations and seek to maximise profit margins (e.g. Cohen and Felson, 1979; Smith, 1980; Lyman and Potter, 2007; Albanese, 2011). It is important, however, that we recognise the uniqueness of organised crime in the waste sector, and understand how crime responds to legitimate market forces. Albanese (2011) defines organised crime as “a continuing criminal enterprise that rationally works to profit from illicit activities that are often in great public demand” (Albanese, 2011: 261). However, in the case of waste crimes, the actual demand for the product

– second hand goods or waste management services – is not illicit, but rather a legitimate market force. This is why it is prudent to adopt Smith’s (1980) theory of the ‘spectrum of enterprise’ to understand the way that organised crime operates in the waste sector. The theory explains how legitimate and illegitimate business activities exist on a spectrum of illegality, and thus should be understood as being driven by the same market forces, regardless of the stance of the law. We have seen how local and international shifts in policy and market economics have provided businesses in the waste management and recycling sector with opportunities to flourish and support the legitimate development of a more sustainable and circular economy. However, as Smith (1980) theorises, the growth of new markets and demand for new products simultaneously provides new opportunities for criminal entrepreneurs who exploit weaknesses in the sector to make more profit with fewer costs.

5.3 – Vulnerabilities in the regulatory framework

A significant theme to arise from this research was the existence of vulnerabilities in the frameworks which regulate the waste management business sector in Scotland. These vulnerabilities were found to be providing organised criminals with the opportunities to commit serious waste crimes. A significant area of concern was in the licencing systems which were found to be easy to exploit; research shows that organised criminals in Scotland are able to apply for waste management licences for their businesses with only minimal oversight, even if they have convictions for other serious organised crimes. Previous work on vulnerabilities in a number of business sectors has raised the issue of *ease of market access* as being a serious facilitator of organised crime. When criminal entrepreneurs identify weaknesses in a particular sector, they must still have the requisite resources and knowledge to enter the market

(Vander Beken et al., 2005; Van Duyne et al., 2007). In the Scottish sector, it appears that in many cases, entering the market is relatively simple, and profits can be made with few overheads. Interviewees discussed situations whereby a lone actor with a van and a yard could apply for a waste carriers' licence and begin offering disposal services to waste-producing businesses. Interviews revealed that much of the oversight in the sector relies on self-regulation by licensees, and thus the chances of their illegal waste activities getting caught were often quite low. In this environment, an illegal operator faces a low barrier to entering the market and a relatively low chance of being caught and punished, thus making the sector attractive to organised crime.

Another significant vulnerability in the Scottish sector is the way in which the government and environmental protection agencies approach the regulation and enforcement of illegal waste activities. It appears that regulatory actions are somewhat forgiving, with officials initially engaging with and advising businesses as to their breaches of code, rather than relying on prosecution and enforcement. The reasons for this approach are quite clear; given the complexity of regulations and their regular changes, often businesses require ongoing advice and guidance and make genuine mistakes. Furthermore, given the Scottish Government's overarching policy drive to improve the recycling industry in Scotland and support the waste management sector in pursuit of a more circular economy, regulators appear to want to let businesses flourish, recognising that over-regulating the sector could stunt growth. However, given the opinions of some professionals working as environmental regulators in Scotland, it appears there is a general consensus that a stronger approach to enforcing illegality and prosecuting waste criminals is required. Previous research into waste crime in Europe has advanced the view that environmental protection agencies simply do not have the resources or staff expertise to tackle serious organised criminality, while at the same time, law enforce-

ment agencies such as the police struggle to deal with the regulatory complexities of environmental crimes (Baird et al. 2014). The limited number of successful prosecutions and relatively low penalties and sentences arguably means that organised criminals view waste management as a 'soft-sector.'

It could also be argued that the regulations in place have been designed with little regard as to how to provide oversight or assessment checks on actors in the waste chain. A theme which arose repeatedly in the research was that of 'duty of care' regulations. Under the Environmental Protection Act 1990, all actors in the waste chain are ultimately responsible for what happens to the waste. However, there is only so much burden of responsibility each actor can take. If a waste-producing business arranges a contract with a waste operator with a legitimate waste management licence, that business has essentially upheld their responsibilities and thus cannot be held liable for waste crime further down the chain. Given the ease by which criminal operators are granted waste management licences, however, holding a licence does not in any way guarantee legitimacy of service or responsible disposal of waste. The problem of overseeing and regulating the duty of care requirements provides opportunities for organised criminals to flourish, as waste producers will rarely become aware of waste crime further down the line. One interviewee suggested that there is a general culture of disregard in the waste sector, and most actors in the chain are simply happy to get rid of their waste and pass it along the chain. Given Mary Douglas' (1966) theory on waste as "matter out of place," it is clear to see why such a culture would take hold. It is simply human nature to want to be rid of dirt and waste, and if one can do it cheaply and cleanly, then all the better. Unfortunately, this culture, coupled with the inherent vulnerabilities of waste as a product, the opportunity to make money in growing markets, and relatively weak regulation and enforcement, makes the sector extremely vulnerable to infiltration by organised crime.

Chapter 6 – Conclusions and Recommendations

This paper has fundamentally sought to interrogate the issues of waste and wasting in our contemporary society from a criminological perspective. Given that wasting is arguably an intrinsic element of human society and is inseparable from the other various practices and processes that constitute our social life, exploring the issue in depth is of crucial importance. In today's world, when we are now more keenly aware than ever of the damage we are causing to our planet and its natural environments, social scientists have a responsibility to explore the nature of waste and wasting and to understand how our social, cultural and political systems contribute to environmental harm and degradation (Halkier et al., 2011). This research has looked to understand the complex interconnectivity between organised crime in Scotland, and local and global environmental harm, through the lens of the 'sector vulnerabilities' framework. Theoretically, this paper has attempted to draw a cohesive conceptual link between subjective notions about the contextually and culturally mediated value of waste (e.g. Douglas, 1966), and contemporary practices of profit-driven waste crime in Scotland. Throughout the literature review of this paper, attempts have been made to demonstrate that waste, far from being a separate, useless entity in our contemporary social world, is actually central to many of our social and economic systems. As O'Brien (1999) writes: "where there's dirt, there's money," (1999: 277) and this truth has been repeatedly evidenced as we have discussed the importance of waste and waste management as important commodities in our highly globalised, consumption-driven society.

Fundamentally, this paper has drawn from 'green criminology' literature (e.g. Potter, 2010; White, 2013; White and Heckenberg, 2014) to demonstrate how human processes of wasting

have the potential to cause significant harm to our natural environments. Environmental degradation and harm, from both an ethical and economic perspective, is something which we can widely agree should be avoided and mitigated as far as possible (White, 2013). ‘Green criminology’ provides us with a broad theoretical framework through which we can explore environmental crime. Given the ambiguity of notions of ‘crime’ and ‘harm’ in the environmental context, this paper has clarified the concept of *malum prohibitum* – acts prohibited by environmental laws – as opposed to *malum en se* – serious ‘crimes against nature’ which may not necessarily be prohibited by legal frameworks (White and Heckenberg, 2014). This research has focused on the former, seeking to understand the phenomenon of waste crime in Scotland as defined by formalised bodies of law and regulations. The discussion moves from theories about the subjective value of waste and ideas about environmental harm, onto theoretical discussions about organised crime and how it operates within existing market structures and business sectors. As noted, this paper has situated itself around the notion that waste has an intrinsic economic value. Thus moving on to a discussion about organised crime, we have looked at theories which view the phenomenon as one being driven primarily by profit, engineered by rational entrepreneurs who build their enterprises around markets which offer high profit margins and low risk of loss (e.g. Smith, 1980; Vander Beken et al., 2005).

This research took the form of a small-scale qualitative study, using semi-structured interviews with officials working in an environmental protection agency in Scotland to gain a deep and rich understanding of their experiences of waste crime and how it operates in the Scottish waste sector. The interviews were structured in such a way as to allow explorative discussions about the waste sector, underpinned by the framework of the ‘sector vulnerabilities’ approach (e.g. Vander Beken et al., 2005; Van Daele and Vander Beken, 2007). This approach was theoretically guided by the idea that business sectors and product markets have particular characteristics which make them uniquely vulnerable to organised crime. From this

perspective, it is the environment within which the criminal operates that is of most interest, rather than the characteristics of the criminals themselves. The data collected proved to be quite fruitful in providing an insight into the Scottish waste sector and identifying aspects of the sector which provide entrepreneurial criminals with opportunities to make illicit profits. The research reveals that the subjective and socio-culturally mediated value of waste means that waste products can effectively be re-valued and re-entered into the economy through recycling, repurposing and reuse. While such practices help to create a more environmentally friendly and sustainable circular economy, they also paradoxically provide entrepreneurial criminals with opportunities to make profit and cause human and environmental harm. The fraudulent misclassification and dangerous repurposing of waste allows criminals to access legitimate markets. The relatively limited regulatory oversight in Scotland, coupled with a generally 'soft-enforcement' approach to tackling waste criminality, provides a high-reward, low-risk environment within which criminals can often freely practice.

To conclude, it is clear that the Scottish waste sector is vulnerable to organised crime for a number of reasons. Most importantly, it is argued here, is the political, regulatory and legislative environment. With a national and international push towards developing sustainable economies and flourishing recycling sectors, proper enforcement and control, in Scotland at least, could be seen to be suffering. While environmental protection authorities in Scotland appear to do an excellent job at overseeing and regulating non-criminal businesses in Scotland, the existing frameworks provide little opportunity by way of enforcement, prosecution or meaningful enforcement. Those criminal organisations who do not wish to be advised or engaged with will continue to exploit weaknesses in licensing systems, duty of care regulations and waste export procedures to make money at the detriment to human health and the natural environment. While some ideas for improvement of the sector were brought up during interviews, it is clear that further research is required in the Scottish sector to identify ways

by which vulnerabilities can be reduced, and regulatory loopholes plugged. It is hoped that this paper can add to the Scottish knowledge base around waste criminality and possibly help to direct future work towards researching effective methods of crime prevention. It is also hoped that this paper will be of some interest to those who are interested in the study of organised crime and environmental harm, and that such an approach may be adopted more fully and comprehensively in the Scottish context to build a more complete picture of the phenomenon of waste crime and environmental harm.

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APPENDIX I) ETHICS FORM



University
of Glasgow

College of Social
Sciences
Appendix i) – Ethics form

Undergraduate and Postgraduate Taught Student Application form for ethical approval

College Ethics Committee for Non-Clinical Research Involving Human Subjects

Before completing this form, you should refer to the guidance notes available at:
<http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduate-andpostgraduatetaughtstudents/>

This application form should be typed, and submitted electronically. **All questions must be answered.** "Not applicable" is a satisfactory answer where appropriate.

Applications should be submitted **at least 4 weeks in advance** of the intended start date for the data collection to allow time for review and any amendments that may be required.

1 Applicant Details

Student I.D. 2239710k
Name of Applicant Fergus Kelly
School/Subject School of Social and Political Sciences

MSc Criminology and Criminal Justice	
Project Title Local organised crime and global environmental harm: An exploration of the Scottish hazardous waste shipment sector and its vulnerabilities to organised crime	
Postgraduate Taught	<input checked="" type="checkbox"/>
Undergraduate	<input type="checkbox"/>
(Programme Convenors Only)	
Full Course Project within a PGT or UG Programme	<input type="checkbox"/>

Submit application via email to School Ethics Administrator: see Ethics website for contact

<http://www.gla.ac.uk/colleges/socialsciences/students/ethics/committee/ethicscontacts/>

1.1 Degree/Programme Title: *All student applicants*

MSc Criminology and Criminal Justice

- 2 Ethical Risks: The application will NOT be considered if this section is blank, both 2.1 and 2.2 must be completed by all Supervisors.**

Risk Assessment: Is this application considered to be a low risk or a high risk application?

Refer to **Risk Guidance Document** on College ethics webpages for clarification.

<http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduate-andpostgraduatetaughtstudents/>

HIGH RISK LOW RISK

2.1 Explain specifically why the low or high risk distinction has been made.

2.2 Risk Assessment Comments from Supervisor

Comment on the research ethics risks involved in the project. It should be clear from the comments provided that the potential risks have been considered and information provided on what they are, with evidence of what is to be implemented to mitigate these.

Declaration: I have checked this application and approve it for submission for review to the Ethics Committee.

Supervisor's Name :

Date:

3 All Researcher(s) including research assistants and transcribers (where appropriate)

Title and Surname	First Name	Phone	Email (This should normally be a University of Glasgow email address)
Mr Kelly	Fergus	07976144756	2239710k@student.gla.ac.uk

All Supervisor(s) Principal First (where applicable)

Title and Surname	First Name	Phone	Email (This should normally be a University of Glasgow email address)
Dr Fraser	Alistair	0141 330 4303	Alistair.Fraser@gla.ac.uk

4 External funding details

Note. If this project is externally funded, please provide the name of the sponsor or funding body.

Not Applicable

5 Project Details

Start Date for Data Collection: 05/06/2017

(NB: This refers to data collection for the research covered in this application. **This must be at least 4 weeks from the date of application submission.**)

Proposed End Date of Research Project: 25/09/2017

(NB: This date should be when you expect to have completed the full project and published the results e.g. date of award, allow time for possible retrieval if required.)

6 Justification for the Research

Why is this research significant to the wider community? What might be the impact on your practice or the practice of others? *Outline the reasons which lead you to be satisfied that the possible benefits to researchers; participants and others to be gained from the project justify any risks or discomfort involved.*

This research seeks to add to the body of criminological literature in the field of organised crime and environmental harm. There is a large and widely accepted body of evidence which indicates that the illegal shipment and dumping of hazardous waste products causes significant harm to the natural environment and human health. Research suggests that the rapid development, production and consumption of products such as hand-held and household electronics, is increasingly leading to difficulties in managing and disposing of such products – many of which contain components hazardous to human health and the natural environment - sustainably when they become out-of-date and undesirable. It is believed that this is an important issue which must be tackled to minimise and manage further harm to people and environments.

It is argued here that this research will be useful both the academic community in the field of criminology, but also to the professional community working to prevent and investigate environmental harm caused by illegal dumping and unsustainable management of hazardous waste. Given that this is a contemporary issue that has received relatively little academic attention – particularly in Scotland – it is believed that the benefits to the wider community will outweigh the relatively low risk involved in data collection.

The analysis of environmental crime using established criminological techniques has previously been shown to aid law enforcement agencies and policy makers. This research will seek to paint a clear picture of the processes involved in illegal shipment of hazardous waste, identify challenges faced by professionals working in this field, and potentially identify vulnerabilities and legal/policy loopholes which facilitate the continued existence of this issue. The discussion of vulnerabilities and challenges will then hopefully lead to meaningful recommendations as to how to overcome these challenges on a practical and policy level, based on data collected. Any useful conclusions which arise from this research will be shared with relevant agencies such as Police Scotland and the Scottish Environmental Protection Agency to aid them in the development of their work.

7 Research Methodology and Data Collection

7.1 Method of data collection *(Tick as many as apply)*

<p>Face to face or telephone interview <i>(provide a copy of the interview themes. This does not need to be an exact list of questions but does need to provide sufficient detail to enable reviewers to form a clear view of the project and its ethical implications.)</i></p>	<input checked="" type="checkbox"/>
<p>Focus group <i>(provide details of themes or questions. This does not need to be an exact list of questions but does need to provide sufficient detail to enable reviewers to form a clear view of the project and its ethical implications. Also information on recording format)</i></p>	<input type="checkbox"/>

Audio or video-recording interviewees or events. Details should be provided, either in theme/question information or separately. <i>(Ensure that permission is evidenced on the consent form)</i>	<input checked="" type="checkbox"/>
Questionnaire <i>(provide a copy of at least indicative questions, final questions must be submitted as an amendment if not provided in initial application)</i>	<input type="checkbox"/>
Online questionnaire <i>(provide the address/ or electronic copy if not yet available online)</i> http://	<input type="checkbox"/>
Participant observation <i>(provide an observation proforma)</i>	<input type="checkbox"/>
Other methodology <i>(please provide details here – maximum 50 words)</i>	<input type="checkbox"/>

7.2 Research Methods

Please explain the reason for the particular chosen method, the estimated time commitment required of participants and how the data will be analysed. Ensure that you include reference to methods of providing confidentiality as you indicate below in section 8.1

Semi-structured face-to-face interviews have been chosen as the preferred method here in order to gain a rich and in-depth understanding of the investigation and enforcement work undertaken by officials in Scottish Environmental Protection Authority. The project will rely on rich, in-depth data which reveals the complexities and nuances of hazardous waste crime and the challenges faced in attempting to investigate it.

As such, recorded interviews which take a semi-structured, thematic approach to questioning will allow flexibility and deeper exploration of salient issues. It is intended that each interview will last for a period of around 60-90 minutes.

Approximately 8-10 in-depth qualitative interviews will be undertaken with professional staff at the Scottish Environmental Protection Agency, primarily working within the LIFESMART waste team which specialises in investigating and prosecuting criminality within the waste management sector in Scotland. Their roles will include:

- Intelligence Analysts
- Policy and Planning Specialists
- Legal Advisors
- Investigative Officers
- Team Managers
- Environmental Scientists

The interviews will be semi-structured and thematic in nature, allowing flexibility of responses and rich exploration of subject matter. While these themes are intended areas of focus in each interview, the semi-structured nature of the interviews leaves open the possibility for exploration of other issues relevant to the research if they arise. Interviews will thus be directed and shaped by the responses of the participants.

One interview will be undertaken with an individual working within a private shipping company. While this individual does not exclusively transport waste products, he/she manages international shipping streams and works from Scotland. It is thus

believed that this individual will have knowledge and expertise concerning the policies, procedures and legislation surrounding the movement of waste and other goods through ports and across borders.

The main research questions are as follows:

- What type of illegal activities take place within the hazardous waste management sector?
- Does the hazardous waste management sector in Scotland have particular characteristics which make it vulnerable to infiltration by organised criminals? What are these characteristics?
- How are these activities investigated and prevented, and are the existing legal provisions and law enforcement systems adequate in preventing and tackling waste crime?

Analysis of interviews will involve, initially, transcription of audio recordings. These recordings and written transcriptions will be saved as password- encrypted files on a solid USB drive and backed up on password-encrypted hard-drive. De-identification methods will be used to protect the anonymity of interviewees. Personal identifiers of interviewees will be replaced by codes when data is recorded. These codes and their related identifiers will be stored in separate encrypted word documents. It will be important to retain this information for analysis, so as to allow cross-reference between data collected and the specific roles and positions of the interviewees. When the data is published, all names and personal identifiers will be redacted to ensure anonymity.

Once all interviews are transcribed, initial analysis will involve looking for common patterns, sequences, themes and differences in the responses of participants. These patterns will be explored and elaborated upon, and analysis will attempt to make generalisations from the data. It is then intended that themes and categories will be derived from these generalisations. These themes and categories will then be discussed and explored in reference to the broader socio-political-cultural context and compared to the existing body of literature. It is hoped that the result will be

conclusions which reveal and explain the presence (or lack of) 'vulnerabilities' to organised crime in the Scottish hazardous waste management sector.

1 8 CONFIDENTIALITY & DATA HANDLING

2

8.1 Will the research involve:

**You should select all options that apply to your (different) research methods (insert the name of the method in shaded box at top of each column, e.g. interview / questionnaire) and make clear in section 7.2 above how these will be applied.*

Degree of anonymity	(insert method)	(insert method)	(insert method)
	Semi-Structured face-to-face interviews		
De-identified samples or data (i.e. a reversible process whereby identifiers are replaced by a code, to which the researcher retains the key, in a secure location?)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anonymised samples or data (i.e. an irreversible process whereby identifiers are removed from data and replaced by a code, with no record retained of how the code relates to the identifiers. It is then impossible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

to identify the individual to whom the sample of information relates)?

Complete anonymity of participants (i.e. researchers will not meet, or know the identity of participants, as participants are part of a random sample and are required to return responses with no form of personal identification)?

Use of Names

Subject being referred to by pseudonym in any publication arising from the research?

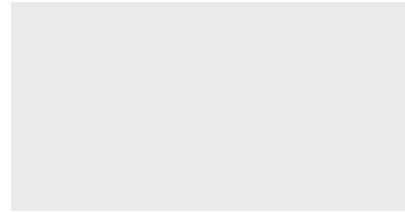
Participants consent to being named?

Any other methods of protecting the privacy of participants? (e.g. use of direct quotes with specific, written permission only; use of real name with specific, written permission only):

provide details here:

Participants being made aware that confidentiality may be impossible to guarantee; for example in the

event of disclosure of harm or danger to participants or others; or due to size of sample, particular locations etc?



8.2 Which of the following methods of assuring confidentiality of data will be implemented?

***Tick all that apply**

Note: The more ethically sensitive the data, the more secure will the conditions of storage be expected to be.

<p>Location of Storage Storage at University of Glasgow</p>	<input type="checkbox"/>
<p>Stored at another site <i>(provide details here, including address)</i></p> <p><i>Electronic data stored in encrypted computer and USB drives, which will be stored in a locked room within locked home address:</i></p> <p>37 ½ West Princes St Glasgow G4 9BS</p>	<input checked="" type="checkbox"/>
<p>Paper Data to be kept secure in locked room/facility/cabinet</p>	<input type="checkbox"/>
<p>Data and identifiers to be kept secure in locked room/facility/cabinet</p>	<input checked="" type="checkbox"/>

<p>Electronic</p> <p>Access to computer files to be available by password only</p>	<input checked="" type="checkbox"/>
<p>Other</p> <p>Any other method of securing confidentiality of data in storage: <i>provide details here:</i></p>	<input type="checkbox"/>

9 Access to Data

9.1 Access by named researcher(s) and, where applicable, supervisor(s), examiner(s), re-search assistants, transcribers.

9.2 Access by people **OTHER** than named researcher(s)/Supervisor(s), examiner(s), research assistants, transcribers.

Please explain by whom and for what purpose:

Access to data will only be available to myself, researcher Fergus Kelly, dissertation supervisor Dr Alistair Fraser, and other supervisors or examiners where applicable.

10 Retention and Disposal of Personal Data *

Please explain and as appropriate justify your proposals for retention and/or disposal of any personal data to be collected. (for example names, addresses, contact information)

It is normally appropriate to destroy the personal data at the end of the research project, if you do not intend to do so, you must provide **substantial** reasons in the box below.

Do you intend to destroy the personal data collected?

YES NO

If no, provide your reasons here:

Not Applicable

* (personal data means data which relate to a living individual who can be identified
–

(a) From those data, or

(b) From those data and other information which is in the possession of, or is likely to come into the possession of, the data controller, and includes any expression of opinion about the individual and any indication of the intentions of the data controller or any other person in respect of the individual." Data Protection Act 1998 c.29 Part 1 Section 1

Further Information on the Data Protection Act (1998) is available on the webpages of the Data Protection and Freedom of Information Office: <http://www.gla.ac.uk/services/dpfoioffice/>

11 Retention and Disposal of Research Data

Please explain and as appropriate justify your proposals for retention and/or disposal of re-search data to be collected.

It is normally appropriate to destroy the research data at the end of the research project, if you do not intend to do so, you must provide **substantial** reasons in the box below.

Do you intend to destroy the research data collected?

YES NO

If no, provide your reasons here:

Not Applicable

12 Dissemination of Results.

12.1 Results will be made available to **PARTICIPANTS as:** *(Tick all that apply)*

Note: Intended method of dissemination ought normally to take account of the age, capacities and situation of participants.

<p>Written summary of results to all if requested <input checked="" type="checkbox"/></p>	<p>Presentation to representative participants (e.g. CEO, <input checked="" type="checkbox"/> <i>school principal</i>)</p>
<p>Verbal presentation to all (information session, <input type="checkbox"/> debriefing etc)</p>	<p>Other or None of the Above <input type="checkbox"/> <i>Please explain here:</i></p>

12.2 Results will be made available to **PEERS AND/OR COLLEAGUES** as: *(Tick all that apply)*

<p>Dissertation <input checked="" type="checkbox"/></p>	<p>Journal articles <input type="checkbox"/></p>
<p>Thesis (e.g. PhD), <input type="checkbox"/></p>	<p>Book <input type="checkbox"/></p>
<p>Submission <input type="checkbox"/></p>	<p>Conference Papers <input type="checkbox"/></p>
<p>Other or None of the Above <input type="checkbox"/></p>	

Please explain here:

13 Participants

13.1 Explain how you intend to recruit participants. Provide as much detail as you can about each different age/type of group as mentioned in 3.7b

Professional staff working for Scottish Environmental Protection Authority (SEPA):

All participants over the age of 18 and all competent to give consent. Approximately 8-10 interview participants will be recruited through brokering facilitated by Dr Colin Atkinson, University of West of Scotland, who holds significant contacts with SEPA staff, and Dr George Hope, a member of management staff at SEPA. Contact with SEPA staff will initially be made via email correspondence to official work addresses using researcher's student email address. All emails will be stored for records and destroyed following submission of work.

Individuals working in the private shipping sector:

Participants will be approached through email contact with major international private shipping operators in Scotland. One particular individual has been identified through a personal contact at the University of Glasgow. This individual works as a company director at a major private shipping firm involved in the shipment of goods from Scotland internationally.

Organisational consent for interviews will be sought before commencement of research.

--

13.2 Target Participant Group (PLEASE INDICATE THE TARGETED PARTICIPANT GROUP BY TICKING ALL BOXES THAT APPLY)

Students or Staff of the University <input type="checkbox"/>	Adults (over 18 years old and competent to give consent) <input checked="" type="checkbox"/>
Children/legal minors (under 18 years old) <input type="checkbox"/>	Adults (over 18 years who may not be competent to give consent) <input type="checkbox"/>
Young people aged 16-17 years <input type="checkbox"/>	

If you require information on the age of legal capacity please refer to the Age of Legal Capacity (Scotland) Act 1991 available at: <http://www.legislation.gov.uk/ukpga/1991/50/contents>

14 Incentives

If payment or any other incentive (such as a gift or free services) will be made to any participants please specify the source and the amount of payment to be made and/or the source, nature and where applicable the approximate monetary value of the gift or free service to be used.

Please explain the justification for offering payment or other incentive.

Not Applicable

15 Number of Participants *(give details of different age and types of groups involved)*

8-10 participants: adult professional staff at Scottish Environmental Protection Authority who are capable of consent. Demographic data such as age, ethnicity, sexuality, disability of interviewees is as yet unknown until recruitment is complete.

1-2 participants: individuals working in private international shipping firms operating from Scotland. Demographic data unknown but all adults over 18 with full ability to give consent.

16 Dependent Relationship

Are any of the participants in a dependent relationship with any of the investigators, particularly those involved in recruiting for or conducting the project? *(For example, a school pupil is in a dependent relationship with their teacher. Other examples of a dependent relationship include student/lecturer; patient/doctor; employee/employer)*

YES NO

If YES, explain the relationship and the steps to be taken by the investigators to ensure that the subject's participation is purely voluntary and not influenced by the relationship in any way.

17 Location of Research

University of Glasgow	<input checked="" type="checkbox"/>
<p>Outside Location</p> <p><i>Provide details of outside locations, including as much information as possible.</i></p> <p>Scottish Environment Protection Agency Angus Smith Building 6 Parklands Avenue Eurocental ML14WQ</p>	<input checked="" type="checkbox"/>

2.1.1.1.1

2.1.1.1.2 18 Permission to Access Participants

18.1 Permissions/Access

Permission is normally required to gain access to research participants within an organisation (e.g. Private Company; school; Local Authority; Voluntary Organisation; Overseas institution, Academic institution, including GU.)

Is this type of permission **applicable to** this application? YES NO

If Yes:

Is evidence of this permission **provided with** this application?

YES NO

OR is it to follow?

YES NO

(If this is the case, this must be forwarded to Ethics Administrator as soon as it is available.)

If No:

Please explain any reason why you do not require permission to gain access to research participants.

Not Applicable

18.2 Does this application involve contacting University of Glasgow students directly (specifically either via email or within classes) for the purposes of your research?

YES NO

If YES, separate permission to survey students needs to be obtained prior to any such survey being undertaken. Normally this permission should be sought from the **appropriate authority** after ethical approval has been granted. (See Information for Applicants <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/informationforapplicants/> for details).

Once obtained, a copy of this permission must be forwarded to the Ethics Administrator.

Please list the student participants that you intend to contact (e.g. 12 students from TESOL course)

Not Applicable

19 Is this application being submitted to another Ethics Committee, or has it been previously submitted to another Ethics Committee?

YES NO

If YES, please provide name and location of the ethics committee and the result of the application.

Not Applicable

20 Informed Consent

20.1a Have you attached your Plain Language Statement (PLS) (also known as Participant Information Sheet) for participants? You must consult the guidance at: <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduate-andpostgraduatetaughtstudents/> for information that you are required to provide in this.

The Plain Language Statement is written information in plain language that you will provide to participants to explain the project and invite their participation. Contact details for Supervisor and School Ethics Officer MUST be included.

YES

NO

If No, please explain here.

20.1b Please note that a copy of this information sheet should be offered to the participant to keep unless there are specific reasons for not doing so. These must be clearly explained below

20.1c What arrangements have been made for participants who might not adequately understand verbal explanations or written information or who have special communication needs in the preparation of the Participant Information Sheet/Plain Language Statement? *(e.g. the use of child friendly language, or where English as a second language)*

Provide details here.

It is generally assumed that all professional staff who will be interviewed will adequately understand information provided to them, both written and verbal, due to the complex nature of the work they undertake, and the depth of interviewing which will be undertaken.

21 How will informed consent by individual participants or guardians be evidenced?

IN NORMAL CIRCUMSTANCES IT WILL BE EXPECTED THAT WRITTEN EVIDENCE OF INFORMED CONSENT WILL BE OBTAINED AND RETAINED, AND THAT A FORMAL CONSENT FORM WILL BE USED: A COPY OF WHICH SHOULD BE SHOULD BE PROVIDED.

IF WRITTEN EVIDENCE OF INFORMED CONSENT IS **NOT** TO BE OBTAINED A **SUBSTANTIAL** JUSTIFICATION OF WHY NOT SHOULD BE PROVIDED.

(NOTE: PLEASE ENSURE THAT YOU HAVE CHECKED THE BOX FOR ALL TYPES OF CONSENT TO BE USED, E.G. SIGNED CONSENT FORM FOR INTERVIEWS/ IMPLIED FOR QUESTIONNAIRES.)

Signed consent form <input checked="" type="checkbox"/>	Recorded verbal consent <input type="checkbox"/>
Implied by return of survey <input type="checkbox"/>	Other <input type="checkbox"/> <i>Provide details here:</i>

Justification if written evidence of informed consent is not to be obtained and retained:

Not Applicable

22 Monitoring

Describe how the project will be monitored to ensure that the research is being carried out as approved (e.g. give details of regular meetings/email contact).

Regular face-to-face meetings will take place between researcher Fergus Kelly and supervisor Dr Alistair Fraser, University of Glasgow. During these meetings, Fergus Kelly will provide evidence of research undertaken. Frequent email contact will also take place between Fergus Kelly and Dr Alistair Fraser to ensure that research is being carried out as approved.

23 Health and Safety

What are the potential issues of personal safety for you, other researchers or participants involved in the project and how will you manage them? (Other than lone field work – refer to question 24.1 for this)

Issues of personal safety are assessed as low risk. Travel to interview site at SEPA Headquarters is the only identifiable risk, and this is minimal. Travel will involve the use of public transport and/or personal car.

24 Risk

24.1 Does the activity involve lone field work, lone working or travel to unfamiliar places?

(E.g. Carrying out interviews alone and off-campus) You should refer to the Risk Guidance at: <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduateandpostgraduatetaughtstudents/>

NB: This does not apply to working within an institution such as a school.

YES NO

Give details here of arrangements to minimise risks pertaining to this.

Interviewing participants will involve lone travel to SEPA Headquarters in Central Scotland (address given above). However, risks at this institution are assessed as very low as this is a publicly-funded, official law enforcement agency and it is assumed that all individuals encountered will be professional staff.

24.2 How will you ensure that you minimise any possible distress caused to participants by the research process?

Prior to all interviews, interviewees will be informed of the details of the process, including intended time and intended topics of discussion. They will be assured that if any distressed is experienced, there will be the option to terminate the process. Interviewees will be supported to access help through their own management processes if necessary and appropriate.

24.3 How would you respond if you think that the participant has become distressed by any of the issues raised by the research? *(Examples of distress: emotional, psychological, economic, health)*

Contact Supervisor

Contact details of support organisations provided on PLS/Information Sheet

Provide details of support organisations at interview

Any other responses you propose to provide:

Not Applicable

24.4 Does this research involve any sensitive topics or vulnerable groups? You should refer to the Risk Guidance at: <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduateandpostgraduateandtaughtstudents/>

YES

NO

Give details here of arrangements to minimise risks pertaining to this.

Not Applicable

25 Protection of Vulnerable Groups

Does this project require Protection of Vulnerable Groups (PVG) clearance?

YES

NO

If Yes, evidence that this has been obtained **MUST** be provided with this application.

If PVG registration is held or an application is currently in progress, please provide details here:

Not Applicable

The Protection of Vulnerable Groups (Scotland) Act 2007 came into effect on 28 February 2011. This replaced the previous Disclosure Scotland checking system for individuals who work with children and/or protected adults.

The University is a Registered Body under this legislation.

Please consult the University Protection of Vulnerable Groups Scheme webpages <http://www.gla.ac.uk/services/humanresources/mgrs-admin/mgr-guidance/pvgscheme/> for guidance.

Further information is available from:

<https://www.mygov.scot/disclosure-types/?via=http://www.disclosurescotland.co.uk/>

(Disclosure Scotland)

26 Insurance

Does this research come under the exclusions to the University insurance cover for research?

YES NO

If Yes: Please explain and detail how you intend to cover the insurance needs for this research?

Not Applicable

The University insurance cover is restricted in certain, specific circumstances, e.g., the use of hazardous materials, work overseas, research into pregnancy and conception and numbers of participants in excess of 5000. Please refer to the Insurance and Indemnity advice on the website given below. Advice or authorisation given must be included with this application.

Information may be available at this link: <http://www.gla.ac.uk/services/finance/staffsections/insuranceandrisk/>

(If you have a problem accessing this link, please try a different browser e.g. Firefox instead of Internet Explorer.)

27 UK and Scottish Government Legislation

Have you made yourself familiar with the requirements of the **Data Protection Act (1998)** <https://ico.org.uk/for-organisations/guide-to-data-protection/> and the **Freedom of Information (Scotland) Act 2002?** <http://www.it-publicknowledge.info/Law/FOISA.aspx>

YES NO

If NO please explain

Not Applicable

See **Application Guidance Notes** available from: <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/undergraduateandpostgraduatetaughtstudents/> for further information.

In addition visit: <http://www.gla.ac.uk/services/dpfoioffice/> for University guidance on Data Protection.

The **Freedom of Information Act 2002** ["FOI"] provides a general right of access to most of the recorded information that is held by the University. The Act sets out a number of exemptions/exceptions to this right of access.

! Declaration over page must be signed/completed. The application will be returned if it is not.

28 Declarations by Researcher(s) and Supervisor(s)

The application will NOT be accepted if this section is blank or incomplete

- The information contained herein is, to the best of my knowledge and belief, accurate.
- I have read the University's current human ethics guidelines, and accept responsibility for the conduct of the procedures set out in the attached application in accordance with the guidelines, the University's Code of Conduct for Research and any other condition laid down by the University of Glasgow Ethics Committee and the College of Social Sciences Ethics Committee.
NB: Full details of the University's ethics guidelines are available at: <http://www.gla.ac.uk/research/aims/ourpolicies/committeestructure/>
- I and my co-researcher(s) or supporting staff have the appropriate qualifications, experience and facilities to conduct the research set out in the attached application and to deal effectively with any emergencies and contingencies related to the research that may arise.
- I understand that **no** research work involving human participants or data collection can commence until I have been granted full ethical approval by the School Ethics Forum (UG & PGT students only).

This section MUST be completed to confirm acceptance of Code of Conduct. If there is no scanned signature then please type the names (or use GUID) and date into the boxes below.

	Signature	Date
Researcher (All applicants)	Fergus Kelly	10/05/2017
Principal Supervisor		

For Supervisors – Please note that by submitting this application the supervisor confirms that:

- The student is aware of the College ethics requirements.
- The topic merits further research.
- The student has the relevant skills to begin research.
- If interviewing, the student has produced an appropriate information sheet for participants.
- The procedures for recruitment and obtaining informed consent are appropriate.

End of Application Form

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Applications should be submitted electronically as follows:

Send to relevant **School Ethics Forum (SEF)** via email to School ethics administrative contact. Please see contact details on College ethics website. <http://www.gla.ac.uk/colleges/socialsciences/students/ethics/committee/ethicscontacts/>

Important Note:

Either student e-mails the application to their supervisor, who checks it and submits it to their local SEF contact. (**Education, Social and Political Sciences, Adam Smith Business School, Interdisciplinary Studies requires this process**)

Or student submits the application and the supervisor sends a supporting email direct to the SEF contact

(Law allows this option)

(Checklist follows over page...)

Application Form Checklist: This is for your own use: do not submit with application

- Are all fields completed?
- Has the supervisor signed and dated Section 2.2 *and* 28?
- Are you submitting your application 4 weeks in advance of your data collection?
- Have you included a Plain Language Statement?
- Have you included a Consent Form?
- Have you included Interview Themes/Questionnaire/Observation Proforma?
- Have you provided details of numbers/circumstances of participants?
- Are you aware of the procedure for written permission, and when to obtain this?

Appendix II) – Interview Schedule

Fergus Kelly – Dissertation for the completion of MSc in Criminology of Criminal Justice, University of Glasgow

Local organised crime and global environmental harm: An exploration of the Scottish hazardous waste shipment sector and its vulnerabilities to organised crime

Interview Themes

Approximately 8-10 in-depth qualitative interviews will be undertaken with professional staff at the Scottish Environmental Protection Agency, primarily working within the LIFESMART waste team which specialises in investigating and prosecuting criminality within the waste management sector in Scotland. Their roles will include:

- Intelligence Analysts
- Policy and Planning Specialists
- Legal Advisors
- Investigative Officers
- Team Managers
- Environmental Scientists

The interviews will be semi-structured and thematic in nature, allowing flexibility of responses and rich exploration of subject matter. While these themes are intended areas of focus in each interview, the semi-structured nature of the interviews leaves open the possibility for exploration of other issues relevant to the research if they arise. Interviews will thus be directed and shaped by the responses of the participants.

The main research questions are as follows:

- What type of illegal activities take place within the hazardous waste management sector?
- Does the hazardous waste management sector in Scotland have particular characteristics which make it vulnerable to infiltration by organised criminals? What are these characteristics?
- How are these activities investigated and prevented, and are the existing legal provisions and law enforcement systems adequate in preventing and tackling waste crime?

In each interview, themes will be as follows:

- A) Identifying the interviewees' main roles and tasks within the organisation.
- B) Asking questions as to their understanding of the step-by-step process of hazardous waste management in Scotland; where does the waste come from? Who collects it? Who manages it? Where does it go and how is it transported? Where is currency exchanged and profit gained? What types of organisations and actors are involved at different stages of the management process? What regulations, policies and laws exist to govern hazardous waste management? How *should* this waste be managed legally?
- C) From here, interviews will look expand into discussions around illegality in the hazardous waste management sector in Scotland; at what stages in waste streams does illegal activity take place? Where and when does it take place? What actors are involved in such illegal activity? What attracts these actors to such activity? What risks and rewards are faced by these criminal actors? How do criminal actors circumvent regulation and avoid detection? Are organised crime groups involved in this type of activity? Is there a culture within the waste management sector which facilitates criminal activity?
- D) Interviews will look to involve a discussion about the current domestic and international legislation, policy, and regulations which govern the management and disposal of hazardous waste; what current legislation – domestic or international - exists to regulate the management of hazardous waste? When was this introduced? Why was it introduced? How is this legislation enforced in practice? What is your organisation's role in enforcing and upholding regulations? What partner organisations do you work alongside? How do you interact with these organisations and share information? Are there any gaps in the legislative provisions and regulations which increase the ease by which criminals can operate? Are existing regulations adequate? Are existing law enforcement resources adequate? Are

organisational policies and procedures supportive in the pursuit of investigating and prosecuting waste crime?

One interview will be undertaken with an individual working within a private shipping company. While this individual does not exclusively transport waste products, he/she manages international shipping streams and works from Scotland. It is thus believed that this individual will have knowledge and expertise concerning the policies, procedures and legislation surrounding the movement of waste and other goods through ports and across borders.

Questions:

- 1) How often are you involved in shipping waste products from Scotland transnationally?
- 2) What are the specific processes involved in the shipment of waste products? Where does it come from? Who organises and finances its shipment? Where is the end destination? Who receives it? Who profits from the shipment of waste? What policies, regulations and legislation (domestic/international) exist to oversee the shipment of waste? Are all waste consignments examined prior to shipment? What agencies are responsible for the shipment of waste?

Appendix III) – Plain Language Statement



College of Social
Sciences

Plain Language Statement

Title of project and researcher details

Local organised crime and global environmental harm: exploring the Scottish hazardous waste management sector and its vulnerabilities to organised crime (working title)

Researcher: Mr Fergus Kelly

Supervisor: Dr Alistair Fraser

Course: MSc Criminology and Criminal Justice

Introduction

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. If you would like more information, please ask me directly or contact myself or my supervisor using the details provided below. Please take time to decide whether or not you wish to take part.

Thank you for reading this

What is the purpose of this study?

I am inviting you to take part in an interview as part of a research study into organised crime in the hazardous waste management sector in Scotland. This interview will be used as part of my Masters dissertation research for my MSc in Criminology and Criminal Justice at the University of Glasgow.

The purpose of this research is to explore how people are able to make money through collecting, transporting, storing and dumping waste illegally. I believe that this research is important to help us to understand the ways in which the waste sector in Scotland is vulnerable

to these types of crimes, as improper management of waste can cause environmental pollution and harm to public health. I am particularly interested in the characteristics of the hazardous waste management sector which make it particularly vulnerable to illegal activity and organised crime.

Why am I being asked to take part?

I am asking you to take part in this research study because of your position of employment. It is my understanding that you are directly involved in the Scottish waste management sector, whether as an employee of a private company or the Scottish Environmental Protection Agency. I believe that your expertise and knowledge about this issue will be of assistance in my research should you choose to take part.

Do I have to take part?

No you do not have to take part if you do not wish to do so. You will not be interviewed unless you provide express written consent.

What will it involve?

I am proposing to interview you face-to-face. The interview will involve me asking you questions about your job, about hazardous waste management in Scotland, and about your understanding of how and why crime takes place in this area. I believe that the interview will last approximately 60 minutes. In order for me to use your interview in my research, I will need to record this using audio recording equipment.

Will my taking part in this study remain confidential?

Yes. The recordings and written transcripts of your interview will be stored safely in a secure location as electronic documents which will be password-protected. The only individuals who will be able to access this information will be myself, my dissertation supervisor, and other University of Glasgow staff such as examiners where necessary. Your personal details will be anonymised and will not be included in any published or submitted work.

Please note that assurances on confidentiality will be strictly adhered to unless evidence of wrongdoing or potential harm is uncovered. In such cases the University may be obliged to contact relevant statutory bodies/agencies.

What if I agree to take part in the research and then wish to withdraw?

You will be completely free to withdraw from participation in this research at any time. Any recordings of interviews prior to withdrawal will be destroyed and won't be used as part of this research.

Who is funding and organising this research?

This research is being organised by myself, Fergus Kelly, with assistance from my dissertation supervisor Dr Alistair Fraser at the University of Glasgow. The research is entirely self-funded and I am not linked to any other organisations. This research is primarily being undertaken so I can complete my degree, MSc Criminology and Criminal Justice.

What will happen to the results of this research study?

The results of this study will be used for the completion of my MSc Dissertation, which will be submitted to examiners at the University of Glasgow. This will be submitted in September 2017. If requested, I am happy to provide a written summary of my results and/or a verbal presentation to all interview participants.

Contacts for further information:

Fergus Kelly (post-graduate researcher)

University of Glasgow

2239710k@student.gla.ac.uk

Dr Alistair Fraser (dissertation supervisor)

University of Glasgow

Scottish Centre for Crime and Justice Research

Ivy Lodge

63 Gibson Street

Glasgow

G12 8LR

Alistair.Fraser@gla.ac.uk

0141 330 4303

If you have any concerns regarding the conduct of this research project, you can contact the School of Social and Political Science Ethics Officer:

Professor Keith Kintrea

Keith.Kintrea@glasgow.ac.uk

Appendix IV) – Consent Form



University
of Glasgow

College of Social
Sciences

Consent Form

Title of Project: MSc Criminology and Criminal Justice Dissertation Research: *Local organised crime and global environmental harm: exploring the Scottish hazardous waste sector and its vulnerabilities to organised crime*

Name of Researcher: Fergus Kelly

2.1.2

1. I confirm that I have read and understand the Plain Language Statement for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. I agree that in the event of my withdrawal, all partial or complete recordings of my interview will be destroyed at point of withdrawal and will not be used as part of this research.
3. I consent to my interview being audio-taped and transcribed by the researcher, and these records being stored securely as password-encrypted files.
4. I agree / do not agree (delete as applicable) to take part in the above study.

2.1.2.1

Name of Participant **Date**

Signature

2.1.2.2

Researcher

Date

Signature

