COMPLIANCE & NON-COMPLIANCE IN THE CANADIAN TORTOISE & FRESHWATER TURTLE PET TRADE

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ABSTRACT

Overexploitation of the world's wildlife has left many species in peril. Despite decades of work by conservationists, species continue to be driven towards extinction by illegal wildlife trade. Efforts to combat illegal trade have focused primarily on large charismatic species, but many other species face similar threats and uncertain futures. Reptiles are one of the most traded wildlife taxa. Of particular concern is the scale of the tortoise and freshwater turtle (TFT) trade. TFTs are slow to reproduce, rendering them vulnerable to even low levels of exploitation. In Canada, the commercial import of live TFTs is restricted, yet smuggling and illegal trade, particularly for the pet market, is a concern. Using a conservation criminology approach, this dissertation looks at compliance and non-compliance in the Canadian TFT pet trade by examining the characteristics of the domestic supply chain, perceptions of formal and informal sanction threats, perceptions of conservation and animal welfare, and the role of neutralizations. Data was collected from federal-level wildlife enforcement records (n=174) and in-depth semi-structured interviews with TFT breeders, wholesalers, and retailers in Canada (n=26). Results point to the complex nature of the TFT supply chain, which has multiple paths through which illegally sourced animals can enter the legitimate trade. Heterogeneity in perceptions of the certainty and severity of formal sanctions threats raised questions about how perceptions change based on one's position in the supply chain. Informal sanctions for many were salient, but so too was a willingness to turn a blind eye to illegal trade. Almost all participants were concerned about conservation and animal welfare, yet some used neutralization techniques when describing their acquisition of animals that were likely illegally sourced. These results highlight the importance of considering multiple theories for understanding compliance and non-compliance and lay the foundation for future research on illegal wildlife trade that will inform both theory and practice.

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CHAPTER 1: INTRODUCTION

Illegal wildlife trade (IWT) is considered one of the largest illicit markets in the world, with an estimated value in the billions of dollars (Cruden & Gualtieri, 2016; Nelleman et al., 2016). The trade encompasses the removal, processing, sale and consumption of wildlife, and other activities which breach wildlife protection laws (Moreto & Lemieux, 2015a) (see Table 1.1 for the definition of terms). There is growing concern that the global trade will continue to deplete wild populations of flora (e.g., orchids, Hinsley et al., 2016) and fauna (e.g., pangolins, IUCN, 2013) and threaten the sustainability of wild populations (Albrechtsen et al., 2007; Lyons & Natusch, 2011). Cascading effects of such losses can negatively impact ecosystem function (Poulsen et al., 2017; Beaune et al., 2013) and put natural resource-dependent communities and livelihoods at risk (Bowen-Jones, Brown, & Robinson, 2003; Selier, Slotow & Di Minin, 2016).

Table 1.1: Definition of Terms

Term	Description
Wildlife	"…all non-human animals and plants that are not companion or domesticated animals" (Wyatt, 2013, p. 2) including timber and fungi ('t Sas-Rolfes et al., 2019).
Wildlife Crime	"… any action whether for commercial or personal purposes, which directly breaches national and/or international laws, agreements and regulations enacted for the protection of wildlife" (Moreto & Lemieux, 2015a, p. 304)
Illegal Wildlife Trade (IWT)	"…involves the illegal trade, smuggling, poaching, capture or collection of endangered species, protected wildlife (including animals or plants that are subject to harvest quotas and regulated by permits), derivatives or products thereof" (Wyatt, 2009, p. 145). Encompassing "… transportation, commercial exchange (involving money or barter), and end use of wildlife and harvested wildlife products, both at local levels and across legal jurisdictions… IWT includes activities that may be illegal but do not necessarily constitute direct or even identifiable threats to species. It does not include activities that are legal but may nevertheless be associated with unsustainable harvesting or damage-causing spread of invasive species; … [the] main focus here is on activities that are both associated with overexploitation of wildlife and officially illegal" ('t Sas-Rolfes et al., 2019, p. 203).
Poaching	"the illegal taking of wildlife" (Musgrave et al., 1993, p. 979; Moreto & Lemieux, 2015b, p. 854), and can include "…hunting, fishing, trapping, seining, netting and other methods of capturing and/or killing wildlife" (Musgrave et al., 1993, p. 979).

Internationally, wildlife trade is regulated through state ratification of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Despite CITES having 184 signatory parties (CITES, 2023), illegal trade continues at a staggering rate. The scale is underscored by INTERPOL's Operation Thunderstorm, which resulted in 1,974 reported wildlife seizures reported in a single month (INTERPOL, 2018). In response to widespread illegal trade, there are calls for greater interdisciplinary research to inform the development of evidence-based IWT policy (Milner-Gulland, 2018).

Although there is a growing body of literature on IWT, research primarily focuses on illegal activity at the park level (e.g., poaching), seizure volumes and trade routes, with less attention paid to other parts of the trade. The numerous types of wildlife trade (e.g., traditional medicine, food, exotic pets, see Wyatt, 2013) add to the complexity. Each wildlife market may be driven by different motivations and unique characteristics, limiting our ability to apply lessons learned from one trade directly to another. Our understanding is further limited by research siloed by disciplines that often conduct research without a grounding in theory. This is evident in research on the exotic pet trade, which has focused mainly on trade routes and volumes, with little attention paid to why an animal might be traded nor an eye toward theory development or testing. A project in Russia found different motivations for keeping exotic pets (Shukhova & MacMillan, 2020), and other research has studied potential buyer responses to messaging on the legality of purchasing an exotic pet (Moorhouse et al., 2017). Although these studies highlight possible motivations and reactions to trade legality, they do not dig deeper into the decision-making processes that result in compliance and non-compliance with regulations to understand causal mechanisms. This limits our ability to understand the trade from an academic and theoretical perspective, making it challenging to provide policy recommendations for allocating

enforcement and behaviour change campaign resources. For example, an intervention directed at those whose decision to comply is based on fear of formal sanctions would differ from one directed at those whose decision to comply is rooted in a sense of morality and a desire to conserve wildlife.

This study endeavours to address these gaps by taking a taxonomic-specific, inductive to deductive and theoretical approach (Lynch et al., 2017; Boratto & Gibbs, 2021) to understand the decision-making processes involved in the pet trade. Specifically, this work will advance the literature by first describing the supply chain from source (wild-caught or breeders) through to vendors and end consumers. Secondly, this study explores how extrinsic elements of formal and informal deterrence (e.g., law enforcement and social network) and intrinsic elements of individuals' morality, pro-environmental beliefs, and neutralization, fit into an overarching rational choice model.

This project narrows the focus to a particular taxonomic group involved in IWT using a problem-specific conservation criminology approach (Gibbs et al., 2010) to look at specific aspects of the IWT supply chain. This approach focuses on extant species of tortoises and freshwater turtles in the Order Testudines to build a broad understanding of the trade, narrowing to theoretical inquiry on offender decision-making.[1] Consultation with federal-level wildlife enforcement in Canada highlighted the illegal trade in tortoises and freshwater turtles (TFTs) as an understudied area of concern, particularly given recent high-profile trafficking incidents. Little is known about the extent and nature of the TFT market, supply chain structure and decision-making processes involved in the illegal pet trade.

[1] Taxonomic classification of tortoises and freshwater turtles: Kingdom - Animalia; Phylum - Chordata; Class - Reptilia; Order - Testudines. This study includes all extant species but excludes sea turtles (Superfamily Chelonioidae) as they are not commonly found in the pet trade.

Taxonomic Focus: Tortoises & Freshwater Turtles

Despite the risks associated with IWT, reptiles have received less conservation funding, publicity, and regulations than their more charismatic counterparts (e.g., elephants and primates), while increased global demand has created financial incentives for exploitation (Sigouin et al., 2016). Reptiles were reported in the CITES trade database (1975-2014) as the most legally traded wildlife taxon (Harfoot et al., 2018), but they are also common in the illicit market. For example, reptiles were the most confiscated animal in 2018's month-long Operation Thunderstorm, with more than 27,000 specimens seized (of which 9,590 were turtles) (INTERPOL, 2018). The large volume of illicit TFTs in the trade is of particular concern given that, after non-human primates, they are the second most threatened taxonomic group (Turtle Conservation Coalition, 2018). Of the 356 described species of turtle and tortoise, more than 60% are threatened with extinction or are already extinct (Lovich et al., 2018; Turtle Conservation Coalition, 2018).

Wild TFT populations are threatened by land development, habitat degradation, pollution, agriculture, collection for food (eggs and meat), traditional medicine, and the pet trade (Turtle Conservation Coalition, 2018). Those collecting turtles from the wild often receive very small amounts of money, so there is little incentive to harvest sustainably or to protect habitat, undermining conservation efforts and leaving some wild populations scarce (Natusch & Lyons, 2012). Extensive exploitation and international trade of ploughshare tortoises (*Astrochelys yniphora*) (which sell for more than USD 40,000 (Morgan & Chng, 2018)) and spurred tortoises (*G. sulcata*) has resulted in population declines that are considered a "serious conservation concern" (Nijman & Shepherd, 2007, p. 207). Ploughshare tortoises are believed to be extirpated in two of the four subpopulations, and only one subpopulation is thought to have more than ten

individuals (Mandimbihasina et al., 2020). Over-exploitation can also result in ecological risks, such as population collapse, diminished biodiversity and ecosystem function (Lovich et al., 2018), the spread of invasive species (García-Díaz et al., 2017) and zoonotic diseases (Chomel et al., 2007; Travis et al., 2011), and loss of cultural heritage (Turtle Conservation Coalition, 2018) (see Appendix A for a detailed discussion).

Despite pressing conservation concerns, illegal trade continues (Mendiratta et al., 2017), likely due to increased availability through poorly regulated online stores and pet expos (Mărginean et al., 2018; Prestridge, Fitzgerald & Hibbitts, 2011) and an ever-present demand for wild-caught specimens (Zhou & Jiang, 2008). Even captive breeding can be problematic, with wild-caught TFTs laundered through captive-breeding facilities upon export (Natusch & Lyons, 2012; Sigouin et al., 2016; Robinson et al., 2015) and concerns about animal abuse (Warwick, 2014).

Between 1990-2010, almost 2 million individual TFTs were traded with CITES permits, with the majority destined for the pet trade (Luiselli et al., 2016). However, CITES trade records may not reflect the total number of individuals traded. Only a fraction of TFT turtle species are CITES-listed, so the trade in 140 species is largely unknown (Luiselli et al., 2016) (although the number of TFTs on CITES has increased since 2016, many remain unlisted). Further, CITES permit records only include legally traded species, but large-scale turtle seizures (as noted above) highlight the enormity of the black market. Unfortunately, due to weak legislation and lack of enforcement, TFT smuggling is an attractive, relatively low-risk activity (Sigouin et al., 2016). Recent cases of TFT trade in Canada have exposed the existence of an illicit market, but there remain substantial gaps in our knowledge of the scope and scale.

Previous research on TFT trade has generally focused on trade volume, routes, and numbers of seizures (e.g., Harfoot et al., 2018; Mărginean, Gherman & Sos, 2018), limiting research to descriptive trade statistics (e.g., Bush, Baker & MacDonald, 2014). A research gap on the actors involved means that there is little understanding of possible strategies that could be used to improve compliance.

The multidimensional nature of the Canadian TFT market provides an opportunity to explore the structure and mechanisms of IWT trade and delve into the theoretical drivers behind compliance and non-compliance. Advancing our understanding of decision-making processes and the unique characteristics of those acting at different stages of the TFT pet supply chain could help inform policy and evidence-based allocations of demand reduction and enforcement resources.

This project is divided into three parts designed to address some of the gaps in the literature. The first part will build a general understanding of the Canadian TFT supply chain structure to lay the foundation for further theoretical inquiry (Part I). This will be followed by a more in-depth exploration of decision-making processes underpinning compliance and non-compliance with wildlife trade laws through an examination of extrinsic factors related to formal and informal deterrence (Part II); and intrinsic factors of morality, pro-environmentalism, and neutralization (Part III).

CHAPTER 2: BACKGROUND & LITERATURE

2.1 Literature

IWT Supply Chains

Wildlife supply chains are generally broken down into three broad phases: supply, transit, and demand (UNODC, 2020). The supply side involves the capture of animals from the wild or captive breeding. Transit involves the transportation and processing of animals (e.g., processing of dead animals into products such as snakeskin purses). On the demand side, the end buyer keeps or uses an animal as a collector's item (e.g., pet), processed commodity (e.g., fur coat), traditional medicine, or food (Wyatt, 2013). In the supply chain literature, similar stages are conceptualized as part of the supply chain operations reference model (SCOR), which focuses on the *source*, *make* (transformation and processing), and *deliver,* with the *planning* process linking and managing these stages (Huan, Sheoran & Wang, 2004).

To define and standardize the different types of actors along the IWT supply chain, Phelps and colleagues (2016) developed a typology. They broadly categorized the actors along the three stages of the supply chain as *harvesters*, *intermediaries*, and *consumers.* These categories were subdivided into specific roles, such as a 'bycatch' harvester who unintentionally harvests a non-target species or an intermediary that acts as a 'logistician,' arranging transportation, financing, and exchange of goods. The movement of goods by actors through *nodes* (physical, social, logistical, and economic structures) is facilitated by intermediaries acting as *links* within a wider network (Arroyave et al., 2020; Sinclair et al., 2021).

IWT is often described as transnational, where the source location of the animals is different from the consumer location (e.g., Busilacchi et al., 2022; Herbig, 2018; Warchol, Zupan & Clack, 2003). The transnational nature of some wildlife trade exposes asymmetries in legal

frameworks where the trade in a species may be legal in one country but not another (e.g., importing a species may be illegal, but the domestic sale of the species once in the country is legal) (van Uhm, 2020). The overlap between legal and illegal trade can also be blurred when wild-caught species are laundered as captive-bred. For example, wild-caught green pythons (*Morelia viridis*) were falsely sold as captive-bred through breeding facilities in Indonesia (Lyons & Natusch, 2011).

Some research focuses on only one end of the supply chain, looking at supply or demand. For example, research on the supply side often describes hunters and trade at the local community level (e.g., Kahler et al., 2013). Other research looks at the demand side to understand why people purchase specific products (e.g., Marshall et al., 2020). Research focused on the transit or *make* stage, often looks at legal trade and seizure records (e.g., Prestridge et al., 2011) or online sales (e.g., Bruslund et al., 2022) and market surveys (e.g., Leupen et al., 2022). However, there is little research on the actors at the transit stages. The transit part of the supply chain is challenging to study. It is often unclear what happens as wildlife products are transited from the harvesters or breeder to vendors and end consumers, and many data gaps remain (Nataraajan, 2020; Sinclair et al., 2021). Some research describing the various stages of the supply chain (e.g., Viollaz and colleagues (2018) used a crime script model focused on the commission of the crime to detail the sequence of decisions or actions before, during, and after the crime, specifically looking on financial crimes committed during the IWT process); but, Moreto & Clarke (2013) highlighted the limitations of script analysis in crimes that are diverse and complex, such as some types of IWT. Given the multiple actors involved in a supply chain across multiple enforcement jurisdictions, they noted that attempts to create a master script could be unwieldy.

From a geographic standpoint, research on TFT trade often focuses on Asian (e.g., Cheung & Dudgeon, 2006; Nijman & Shepherd, 2007, 2015a) and European markets (e.g., Auliya et al., 2016; Mărginean, Gherman & Sos., 2018). Although some attention has been paid to the pet trade in the U.S. (Sinclair et al., 2021) and the U.S. turtle trade (Ceballos & Fitzgerald, 2004; Easter et al., 2023), knowledge of the extent and mechanisms of trade in Canada over the last decade are limited (CEC, 2017). Mapping the supply chain(s) is, therefore, an important first step in describing the IWT phenomenon and opens the doors for unique research on an understudied stage in IWT trade. Identifying the people involved and their roles will help to focus research on the key actors involved and provide foundational information needed to develop effective interdictions (Keskin et al., 2022).

Theoretical Inquiry in IWT

Explorations of theory in the criminological literature on IWT often use instrumental/ rational choice perspectives according to which offenders weigh the costs and benefits of crime (McFann & Pires, 2020). In particular, there has been a focus on Routine Activities Theory (Cohen & Felson, 1979), such as research by Herbig and Warchol (2011), who examined poaching in South African protected areas. Other researchers have used target selection models, such as CAPTURED/CRAVED (Moreto & Lemieux, 2015b; Pires & Clarke, 2012; Tella & Hiraldo, 2014), in which characteristics (e.g., ability to conceal an item during transport or the enjoyability as a companion) are used to explain the preference for trade in certain species. Situational Crime Prevention techniques have also played a central role in recent criminological work on IWT (e.g., Lavorgna et al., 2018; Petrossian, Pires & van Uhm, 2016). However, for Situational Crime Prevention, there have yet to be in-depth evaluations of the techniques proposed in the IWT context, and there are questions about generalizability (Wong, 2018).

Other non-instrumental criminological approaches have also been taken. For example, Kahler and Gore (2012) looked at the relationship between social norms and poaching in Africa; van Uhm & Moreto (2018) considered corruption in illegal wildlife trade using Passas' (2002) concepts of symbiotic and antithetical relationships to understand interactions between actors that are mutually beneficial or competitive; and Eliason & Dodder (1999) and Eliason (2003) explored techniques of neutralization (more detailed discussion below). However, the literature is still dominated by descriptive and exploratory work (McFann & Pires, 2020) and case studies (Lynch et al., 2017) (e.g., Filteau, 2012; Warchol & Johnson, 2011) with few works testing theory to explain the causal mechanism underpinning IWT (McFann, & Pires, 2020; Boratto & Gibbs, 2021).

Outside of the criminological literature, other disciplines have looked at IWT, but their integration of criminological theory is limited (see Lynch et al., 2017). Researchers have drawn from political ecology (e.g., anti-poaching and green militarization, Lunstrum, 2014), conservation science (e.g., predictors of elephant poaching Zafra-Calvo et al., 2018), and economics (e.g., the economics of legal elephant ivory trade, Barbier et al., 1990). The majority of this work comes from the field of conservation science, which largely focuses on specific environmental issues without placing them into a theoretical framework. Although we have a general understanding of how some wildlife trade occurs, we do not have causal explanations for why it occurs in one way and not another, nor can we explain the impact of conservation and enforcement interventions on compliance. For instance, Veríssimo & Wan (2019) critiqued the lack of strong empirical evidence to support wildlife consumer behaviour change campaigns.

Theoretical and empirical inquiry in exotic pet trade research is further lacking. Moorhouse and colleagues (2017) attempted to address this gap using an experimental design to

study intentions to buy exotic pets. Their study took the format of an online quiz titled "Exotic Pet Match" that offered to match people to an exotic pet. The quiz provided randomly assigned messages that tested intention to buy (how likely it is they would buy a specific exotic pet) against being given information on a) conservation status (e.g., that it is an endangered species), b) animal welfare (e.g., that animals are transported in terrible conditions), c) legality of the trade and d) disease risk. They found that messaging on legality and disease risk were associated with a reduced intention to buy.

Moorhouse and colleagues' (2017) work was an important and innovative first step in systematic research on the decision-making behaviour of those involved in the exotic pet trade, but it was not rooted in theory. There was no theorized causal mechanism for understanding why messaging on conservation status and animal welfare had no effect. At the same time, legality and disease risks appeared to have some deterrent impact. Nor was there strong theoretical reasoning behind the quiz design and selection of constructs. Considering their results from a criminological perspective raises a few questions. Given that legality played a role in intentions to buy, might we then expect extrinsic factors, such as sanction threats, to influence the decision to comply with wildlife laws and act as a deterrent? If messaging on conservation status and animal welfare issues did not impact intentions to buy, does that imply that morality and pro-environmental beliefs may not be considered or are neutralized by those participating or wishing to participate in the pet trade? A criminological perspective offers a way to ground further research in theory to develop a more nuanced understanding of compliance and non-compliance in the exotic pet trade. In particular, taking a wide rational choice perspective (Svensson et al., 2017) allows us to consider a range of factors that may influence the decision-making processes at different stages of the supply chain.

Offender Decision-Making

Research on offender decision-making (and on the flip side, the decision to comply) is largely rooted in rational choice theories (Collins & Loughran, 2017). In the criminological context, rational choice theory recognizes that potential offenders will weigh the costs and benefits of crime (Cornish & Clarke, 1986). However, it is important to acknowledge that we cannot assume that actors can maximize their utility by perceiving and calculating all potential risks and rewards. Research on the asymmetry between perceived risk and actual risk finds that people are limited in their ability to perceive and process risks and rewards (Kleck et al., 2005), and there is extensive literature on imperfect risk calculations (see Plous, 1993). Studies have found that people will underestimate the probability of rare events and overestimate the probability of frequent events (e.g., prospect theory - Kahneman & Tversky, 1979; sanction threat response heterogeneity - Loughran et al., 2012). Since an individual is only capable of working with the information available to them, they must act within the confines of their ability (both cognitive and physical) and the conditions of their environment. These limitations restrict an individual's ability to make decisions that might maximize their utility; however, this does not negate their capacity to weigh costs and benefit within the constraints of their personal knowledge, history, and ability. This bounded rationality (see Simon, 1983) allows us to move rational choice beyond a simple economic cost versus benefits calculation to include elements such as cognitive capacity, problem-solving skill, and situational factors (e.g., time available for decision-making).

The decision-making process is further complicated by intrinsic factors that may influence the cost/benefit calculations, particularly the role of emotions, a sense of morality, and the use of neutralization techniques to overcome shame and guilt when violating such values (see

van Gelder, 2017). Academics hold conflicting views on the conceptualization of rational choice. Some scholars take a narrow approach that rejects the inclusion of emotions (Etzioni, 2010), while a *wider* version of rational choice recognizes the role of moral beliefs, allowing for the "…inclusion of social and moral incentives as well as nonmaterial and subjective constraints and opportunities" (Svensson et al., 2017, p. 229).

Paternoster and Simpson (1996) used subjective expected utility theory to consider the role of morality in tandem with a rational choice framework. Their results found that intention to commit corporate crime was moderated by moral evaluations – such that when moral inhibitions were sufficiently high, the costs and benefits of crime were meaningless, but that when moral inhibitions were low, individuals were deterred by formal and informal sanction threats (as well as organizational context). In this regard, if moral inhibitions associated with committing a crime are sufficiently high, this could negate the need for formal and informal sanctions.

Below I will consider extrinsic and intrinsic factors that influence the cost/benefit calculation, specifically focusing on formal and informal deterrence (Part II), and morality and neutralization (Part III). These distinct areas of theoretical inquiry will be explored independently but considered under the umbrella of a wide rational choice framework.

Extrinsic: Sanction Threats

Although there may be numerous extrinsic factors associated with compliance in the TFT pet trade (e.g., situational factors in the physical environment, see Lemieux, 2014), this study will focus on the under-attended area of informal and formal sanction threats in IWT and perceptions of deterrence. Rational choice is one of the most commonly used theoretical frameworks in the wildlife crime literature (McFann & Pires, 2020). However, there is very little research that makes further inquiry into the elements that underpin the decision-making

processes involved in the trade, specifically from a deterrence perspective. In the environmental crime literature, questions remain about the effectiveness of enforcement-based deterrence strategies (Lynch et al., 2016; Moreto & Gau, 2017). Much of the work done by conservation NGOs focuses on the role of enforcement as a deterrent, yet there is little evidence to support its effectiveness in the IWT context. For example, higher ranger deployment levels (a proxy measure for apprehension risk) did not deter poachers in a South African conservation area (Barichievy et al., 2017). Outside of conservation areas, there is little chance that wildlife traders will be caught (Agarwal, 2015), and the actual deterrent effects of fines and prison sentences remain unclear, with some considering sanctions (e.g., $1000 for bird trafficking in South Africa) insufficient deterrents (Alacs & Georges, 2008; Warchol, 2004).

Outside of formal sanctions, informal sanctions can also be considered. Nagin's (2013) review of the deterrence literature highlighted the deterrent impact of community censure and loss of social status. Although a few studies have considered social norms and informal sanctions in relation to conservation (e.g., Jones, Andriamarovololona & Hockley, 2008; Thompson, Nestor & Kabanda, 2008), there have yet to be scholarly evaluations of the deterrent effect on IWT. However, there is some indication that the reptile trade is informally self-policed through online forums that rate traders – those who do 'bad business' are thought to be detrimental to the industry's reputation and are subsequently ostracized from the reptile social network (Stallins & Kelley, 2013). Given the lack of inquiry into formal and informal deterrence in the IWT literature, there is potential for such a focus to greatly contribute to our understanding of the decisions to comply at various stages along the supply chain.

Intrinsic: Neutralization

Recall that Paternoster and Simpson (1996) found that morality played a role in the early decision-making process in corporate crime, such that those with high moral inhibitions would not commit crime. Beyond the morality of committing crime, there are also moral issues related to negative environmental impacts and animal welfare associated with the illegal pet trade. Research on speciesism and species justice recognizes the animal as the victim and questions the morality of environmental damage and animal abuse caused by prioritizing human needs over those of "non-human animals" (Goyes & Sollund, 2018; Sollund, 2011). Warwick (2014) highlighted ethical concerns with the reptile pet industry, particularly with regard to animal welfare, the spread of disease, environmental impacts, and poor animal husbandry. The investigation of an exotic companion animal wholesaler in the U.S. revealed high mortality rates due to parasite infestation, stress/injuries, hypothermic stress, overcrowding, and infections (Ashley et al., 2014). Warwick (2014) stressed that reptiles are not easily domesticated and are particularly vulnerable to inadequate husbandry conditions, such as poor enclosure temperature regulation, diet, and small enclosures. Such conditions are generally considered unacceptable for mammalian pets but are normalized in the reptilian trade (Warwick, 2014). He noted that "Although false perceptions by the general public may cause reptiles to be shunned or ignored, it may be the misperceptions of their admirers that result in some of the greatest harm." (i.e., those who are the most passionate about exotic reptiles may actually cause them to be collected, trafficked, and traded, resulting in abuse, the spread of disease, and environmental degradation) (Warwick, 2014, p. 77). He strongly questioned the morality of the industry.

Recent work by Shukhova and MacMillan (2020) found that exotic pet owners in Russia were driven by different motivations,[2] with some seeing themselves as altruistic and moral pet owners that contributed to conservation by protecting biodiversity. In another study, schoolchildren in France showed paradoxical attitudes toward tortoises. They admired Hermann tortoises as likeable animals and showed a willingness to protect them, but this was nonetheless associated with wanting to possess a turtle and a willingness to take advantage of the opportunity to harvest one from the wild (Ballouard et al., 2020). This raises questions about the justifications that one might use for being involved in the breeding, sales, ownership, and display of exotic animals.

Some may contend that keeping exotic pets fosters a sense of dedication to wildlife and leads to future conservationists, such that the benefit outweighs the harm caused by keeping exotic reptiles. However, Warwick (2014) argues that while this may be the case for some individuals, the scale of the wildlife trade and the high premature mortality rate, accompanied by the risk of pets being released to the wild and becoming invasive, far outweighs the conservation potential of a few pet owners becoming dedicated conservationists. He further argues that "… even where some effective conservationists emerge who attribute their role to earlier reptile keeping, can it truly be said that they would not have chosen that path anyway?" (Warwick, 2014, p. 86).

Despite Warwick's concerns about morality in the exotic reptile trade, Moorhouse et al. (2017) (discussed above) found that messaging on conservation status and animal welfare was

[2] Motivations were categorized as: 'Life Savers' (empathy for animals, want to save them), 'Accidental Owners' (pet came to them through circumstance, e.g., as a gift), 'New Experience Seekers' (wanting to have something unique), and 'Collectors' (sought to obtain rare animals, e.g., certain colour morphs) (Shukhova & MacMillan, 2020)

not associated with the intention to buy exotic pets. This disconnect implies that the messaging was poorly constructed or that issues of morality or conservation may not factor into a buyer's purchasing calculation. Some purchasers may be unaware of these impacts or are perhaps able to justify participation in the trade.

The sustainability and environmental psychology literature explores beliefs associated with conservation and the environment as they relate to pro-environmental behaviour, such as the use of eco-friendly products (Barbarossa & De Pelsmacker, 2016) and environmental actions (Markle, 2019). Pro-environmental behaviour emerges from perspectives focused on norms, attitudes, values and beliefs about environmental conditions (Markle, 2019). The idea is that pro-environmental beliefs should lead to pro-environmental behaviour; however, this is not always the case. People may hold beliefs about protecting the environment but still do harmful things (Hope et al., 2018).

Pro-environmental behaviour research suggests that compensatory green beliefs (CGBs) are used to decrease guilt from actions that negatively impact the environment; some will "defend their green credentials in social situations" and will "justify detrimental behavior on the basis of higher loyalties (e.g., family needs), or the perceived difficulty of performing more pro-environmental actions" (Hope et al., 2018, p. 401). CGBs were more likely to be endorsed by those with weak green identities, low pro-ecological worldviews and few pro-ecological behaviours (Hope et al., 2018). The Hope et al. (2018) study used both quantitative and qualitative data to explore the use of CGBs; they found that although the quantitative data suggested that participants disagreed with compensatory statements, the more nuanced qualitative data showed that participants consider compensation justifiable under some circumstances. Interestingly, participants looked at their environmental behaviour as a

cumulative whole, rather than the outcome of individual behaviours or activities (Hope et al., 2018). They reasoned: if my overall environmental behaviour is good, I can justify the times when I'm being bad. There were also those in the Hope et al. (2018) study that had overall moral objections to behaviour compensation – feeling that one should always act morally without compromise. Participants recognized that pro-environmental behaviours were "morally and socially normative" and therefore desirable; however, they viewed some compensation behaviours as "socially and morally permissible" (p. 412-413). Compensatory beliefs in the study were not the only form of justification – some saw pro-environmental options as impractical and/or difficult or insignificant in the big picture. Others felt they were deserving of or entitled to engage in certain behaviours, so felt no need to compensate.

In a study in Germany, Neumann and Mehlkop (2022) examined the relationship between environmental concern and green energy usage. They found moderating effects of neutralization on enviro attitudes and normative expectations and negative interactions between neutralizations and normative expectations. They also found that normative expectations of family and friends were no longer important when respondents relied on neutralization techniques.

From a criminological perspective, we can think about these compensatory behaviours in relation to neutralization (Table 2.1). In 1957, Sykes and Matza introduced neutralization theory, which sought to explain why those who subscribe to rules and laws can rationalize their own criminal activity. Sykes and Matza (1957) theorized that people would use various techniques to neutralize their behaviour, such that they rationalize or justify their actions even when they know they are breaking the rules. Neutralization is part of the narrative process with roots in criminological tradition (Maruna & Copes, 2005). Although neutralization has been placed under various theoretical umbrellas in the criminological literature (e.g., as a control theory), Maruna

and Copes (2005) conceived of neutralization theory "… as an explanation of persistence or desistance rather than of criminal etiology" (p. 8), in this regard, it can be broadly conceptualized as part of the offender decision-making process, connecting emotions and intrinsic values to action.

Sykes and Matza (1957) proposed five techniques of neutralization: 1) Denial of Responsibility (The crime was not within their control; "it was unintentional"); Denial of Injury (there was no harm "no one was hurt"); Denial of the Victim (not a crime under these circumstances "they deserved it"); Condemnation of the Condemners (crimes are always occurring, but few are punished "everyone does it"); Appeal to Higher Loyalties (commit crime for status or integrity). Over the last sixty years, the original list of five expanded greatly with the addition of other techniques, such as Shigihara (2013)'s "denial of excess" and "no one cares". Kaptein and van Helvoort (2019) found 1,251 different neutralization techniques described in the literature (even after grouping similar techniques). Given the scope of the different proposed techniques, Kaptein and van Helvoort (2019) sought to build greater consistency across the neutralization literature by systematically and iteratively developing a model that breaks techniques into four categories (1) distorting the facts, 2) negating the norm, 3) blaming the circumstances, and 4) hiding behind oneself. Each category is comprised of three techniques (12 total) with five sub-techniques (60 total). They plotted their techniques in a wheel pattern, starting with a distortion of facts (the individual neutralizes behaviour through changing the narrative and thus avoiding acceptance of a norm violation) and escalating to "hiding behind oneself" (the individual acknowledges they have violated a norm, but claims "imperfect knowledge, capabilities, or intentions") (Kaptein & van Helvoort, 2019, p. 17). This model

provides a framework to unify neutralization research and clearly organize the various techniques.

Table 2.1: Example overlaps between neutralization techniques & compensatory green beliefs

Techniques of Neutralization	**Compensatory Green Beliefs**^^
Appeal to higher loyalties^; Appealing to another norm**	Behaviour justified based on "higher loyalties"
Denial of responsibility^; Blaming the circumstances**	Pro-environmental actions are difficult or impractical
Condemnation of condemners^; Reducing norms to facts, Reduction to the immorality of accusers**	Behaviour is socially & morally permissible
Denial of injury^; Distorting the facts**	Action is only a drop in the bucket
Metaphor of the ledger*; Relativizing the norm violation**	Behaviour weighted as a cumulative whole
Claim of entitlement*; Relativizing the norm violation**	Deserving of, or entitled to, a certain behaviour

^ Sykes & Matza, 1957 * Eliason & Dodder, 2000; ^^ Hope et al., 2018; **Kaptein & van Helvoort, 2019

In the environmental context, Sykes and Matza's (1957) original techniques have been expanded to animal welfare issues and poaching. Forsyth and Evans (1998) proposed ten neutralization techniques in their study of dogfighting and animal cruelty. Eliason and Dodder 's (2000) study of poacher behaviour found that all subjects employed at least one neutralization technique, despite agreeing that poaching was wrong. More than half of the study participants said their illegal killing of a deer was accidental (denial of responsibility); others "used the metaphor of the ledger" by believing that their moments of good behaviour compensated for brief periods of illegal behaviour. In interviews with poachers and conservation officers, denial of responsibility was the most common rationalization for poaching (Eliason, 2003). In Kentucky, some claimed ignorance/forgetfulness/carelessness for illegal hunting and fishing, possibly using these excuses as more socially acceptable rationalizations than the true motives, such as thrill killing or trophy hunting (Eliason, 2004). However, to date, the use of neutralization to understand IWT has been limited largely to poaching incidents and has not been

extended to our understanding of other stages of the supply chain. Exploring neutralization using the Kaptein and van Helvoort (2019) model in the context of CGB could help us better understand the weighting of morality and pro-environmental beliefs against the benefits associated with involvement in the exotic pet trade.

One of the challenges with studying neutralization in the IWT context is a need for more reliable scales. Many of the measures used to assess neutralization are rooted in street crime, such as the Denver Youth Survey neutralization scale (Huizinga & Jakob-Chien, 1998), the Offending, Crime & Justice Survey (Hamlyn et al., 2003), Moral Disengagement scale (Bandura et al., 1996), and the Proactive criminal thinking latent factor (Walters & Yurvati, 2017). For example, the Denver Youth Survey neutralization scale was geared toward teens and asked, among other things, questions related to theft and physical violence (Huizinga & Jakob-Chien, 1998) which are unlikely to be suitable for research on illegal pet trade. In the Green Criminology context, recent work by Taber and colleagues (2022) developed and validated a scale to test the relationship between neutralization and polluting behaviours in rural Iran. Their scale narrowly focused on a few of Sykes & Matza (1957)'s techniques and did not account for the numerous techniques that have emerged over the last 65 years (see Kaptein & van Helvoort, 2019). The scale was also specific to polluting behaviours, so it would be inappropriate for use in a study of the pet trade. Overall, current scales are either not applicable or too vague, a problem highlighted by Hope and colleagues (2018) when they noticed the emergence of additional CGBs in interviews that followed questionnaires. Maruna & Copes (2005) found that most scales were too broad or abstract and open to misinterpretation; they suggested the need for qualitative information to develop reliable scales. It is, therefore, appropriate to pursue qualitative inquiry on neutralizations used in wildlife trade.

2.2 Approach & Current Study

The *conservation criminology* framework offers a problem-specific interdisciplinary approach to environmental crime research, focused on testing theory to provide robust policy recommendations (Gibbs et al., 2010). This project takes a conservation criminology approach to progress IWT research from inductive to problem-specific deductive work. Lynch and colleagues (2017) highlighted the lack of systematic theory testing in environmental crime studies. In response, another paper used IWT as an example to suggest new strategies for advancing environmental crime research using conservation criminology and the *Panda* framework, designed to systematically organize research and build a body of comparable literature (Boratto & Gibbs, 2021). As shown on the left side of Figure 1, this approach begins with inductive interdisciplinary inquiry to understand the structure of the phenomenon through a case study (e.g., research on a specific type of IWT) to define specific problems within that broader phenomenon and to establish possible theoretical explanations. The second phase involves in-depth deductive inquiry to systematically test theory and develop an understanding of the causal mechanisms underlying the different stages of IWT to inform future scientific inquiry (Figure 2.1).

This project will be framed under conservation criminology with the goal of contributing to a wider body of theoretical knowledge on the drivers and mechanisms of compliance and non-compliance in IWT. The Panda framework will provide a scaffold for building a broad description of the trade, which will then be narrowed to more in-depth theoretical inquiry.

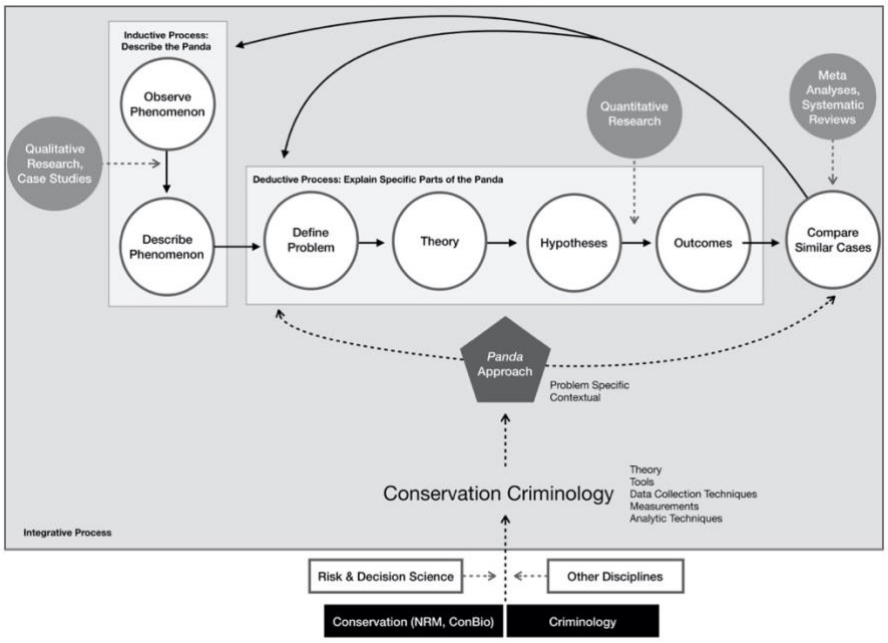

Figure 2.1: The Panda approach to conservation criminology (Boratto & Gibbs, 2021)

2.3 Project Objectives

Part I of the project describes the supply chain and enforcement response to map the costs and benefits of the TFT trade at different stages. This will provide the necessary foundation for further inquiry in Parts II and III.

1) What is the TFT supply chain structure in Canada?
2) Why are TFTs traded in Canada?
3) What is the nature of monitoring and enforcement of TFT trade in Canada?
4) What are participants' perceptions of the strategies used to evade detection by the authorities?

Parts II and III focus on two main theoretical areas and their connection to offender/non-offender decision-making. In Part II, the paper will look at the extrinsic factors, in particular perceived sanction threats, to develop an understanding of responses to formal threats from law enforcement agencies and the criminal justice system and informal threats from the community

(in particular, the social networks of those involved in the pet trade), and their responses to such threats.

1) What are participants' perceptions of formal and informal sanction threats?
2) What are participants' perceptions of the certainty of being caught? (formal & informal sanctions)
3) What are participants' perceptions of the severity of punishment? (formal & informal sanctions)

In Part III, I examine the underlying internal factors of morality and pro-environmental beliefs and how neutralization techniques and compensatory green beliefs (CGBs) allow someone to overcome their commitment to a dominant value system and reconcile illegal behaviour.

1) What role does morality play in preventing those in the trade from breaking the law?
2) Do those involved in the trade hold pro-environmental beliefs about wildlife conservation and animal welfare?
3) Do those involved in the trade use techniques of neutralization and/or CGBs?
4) Why are neutralization techniques and/or CGBs used (or not used) to justify non-compliant behaviour?

Although Parts II and III act as standalone research questions, they all tie back into the offender decision-making process and fit under the umbrella of a wide rational choice framework, advancing beyond a simple cost/benefit calculation to develop a more nuanced understanding of compliance/non-compliance in the TFT trade.

CHAPTER 3: METHODS

3.1 Design

Building on the Panda framework (Boratto & Gibbs, 2021), this study takes an interdisciplinary problem-specific conservation criminology approach (Gibbs et al., 2010) to first develop a broad understanding of TFT trade in the Canadian context, followed by an in-depth exploration of some of the potential underlying factors driving compliance and non-compliance. A convergent mixed-method design was used to simultaneously collect quantitative and qualitative data to analyze convergences and divergences (Creswell & Plano Clark, 2018). Data include official enforcement records and interviews (Table 3.1).[3] Given that some may withhold information when self-reporting decision-making and non-compliance, taking a mixed method approach helped to triangulate data and improve accuracy (Bachman & Paternoster, 2017). Specifically, both enforcement records and interviews provide information on supply chain characteristics and on extrinsic factors.

Table 3.1: Data collection methods

	Enforcement Records	Interviews
PART I: Supply Chain Characteristics	x	x
PART II: Extrinsic Factors	x	x
PART III: Intrinsic Factors		x

Official enforcement records and interview data were collected and analyzed separately. Parallel coding of the same concepts in both datasets are used to build a systematic comparison of results (Creswell & Plano Clark, 2018). Data from the enforcement records were used to establish supply chain characteristics recorded by enforcement officers for comparison with characteristics

[3] Although the research questions are conducive to an in-depth quantitative test of theory, a lack of knowledge about the mechanisms, structures and individuals involved in the Canadian pet trade means that assumptions would need to be made when designing questionnaires or vignettes. Error associated with these assumptions could result in mis-specified models. Qualitative interviews act as a first step to understanding perceived drivers of compliance/non-compliance and lay the foundation for future quantitative tests of theory.

revealed by interviewees. Comparisons are also drawn from official documentation of enforcement officer interactions with TFT traders and interviewee perceptions of such interaction. Finally, interviews are used to study the intrinsic factors of pro-environmental beliefs and neutralization and their relationship to compliance in the TFT trade.

3.2 Location

The study was conducted in Canada, which is both a source and sink country for TFTs. Five of Canada's eight native extant freshwater turtle species are listed as threatened or endangered (SARA, 2017) and have been targeted by illegal harvesters and traffickers for sale on the global market. For example, in 2014, an individual was caught illegally exporting TFTs from Canada to the USA (CBC, 2018). There have also been a number of important cases related to the import of non-native TFTs into Canada. Notable examples include the import of 20 live sulcata tortoises (*Centrochelys sulcata)* (EC Media Relations, 2013a); and the illegal importation of 205 animals, including TFTs such as the African side-neck turtles (*Pelomedusinae*) and South American red-footed tortoises (*Chelonoidis carbonarius*), for which the offender received a jail term of 90 days and a $50,000 fine (EC Media Relations, 2013b).

Regulations

The international TFT trade into Canada is highly restricted in comparison to the commercialization of the US market (CEC, 2017). Import restrictions in Canada make the Canadian context an ideal case study. Multiple governmental agencies regulate Canadian trade at the federal, provincial, and municipal levels. At the federal level, Environment and Climate Change Canada (ECCC)'s Wildlife Enforcement Directorate (WED) is responsible for the enforcement of the Wild Animal & Plant Protection and Regulation of International & Interprovincial Trade Act (Canada) (WAPPRIITA) and The Species at Risk Act (SARA).

WAPPRIITA is Canada's ratification of the CITES, which 1) prohibits the trade in listed species, except with a permit; 2) prohibits the import of species that have been exported in contravention of the source country's domestic laws; and 3) prohibits the possession of species that were imported in contravention of the above. SARA restricts the collection and commercialization of species listed as at risk in Canada, which includes most native turtles.

Turtle import is also regulated federally by the Canadian Food Inspection Agency (CFIA), which is responsible for the implementation of the Health of Animals Act that "… control[s] diseases and toxic substances that may affect animals and/or be transmitted from animals to humans" (CEC, 2017, p. 3). The act prohibits the import of live turtles for commercial purposes due to the threat of salmonella transmission, and requires a permit for imports by zoos, as pets, or for scientific and educational purposes (CEC, 2017).

As a result of the limits on TFT trade in Canada, commercial trade in native species and the import of exotic TFTs for commercial purposes are prohibited. Therefore, any commercial trade in TFTs must be sourced through domestic exotic pet breeders. However, it is suspected that domestic trade is sustained by the offspring of TFTs brought into the country illegally (CEC, 2017). Breeders in Canada are thought to be primarily hobbyists, and there are no known large-scale farms or breeding facilities like those found in the USA, resulting in suspicion that the steady trade in TFTs may be fed by illicit markets (CEC, 2017). The laws in Canada are quite strict, especially in comparison to neighbouring U.S., where there is a large open market for pet reptiles (CEC, 2017). This has created a price differential, such that turtles in Canada demand higher prices than their USA counterparts, incentivizing illegal trade (CEC, 2017).

3.3 Enforcement Records

The first objective of this study is to describe the trade in TFTs and the enforcement actions in the Canadian context. Enforcement records are used to describe the supply chain characteristics, enforcement actions and sanctions. Enforcement records include Environment and Climate Change Canada, Wildlife Enforcement Directorate (ECCC WED) files. ECCC enforcement records were identified through database keyword searches for *tortoise*, *turtle*, *terrapin, tortue,* and variants of each that account for potential typos for the years 2008-2018. Enforcement files were filtered for *violations,* excluding active intelligence files and open files. Data was de-identified, and all incident locations were aggregated to the provincial level.

The ECCC WED dataset includes 439 files (2008-2018) involving TFTs, of which 155 files were related to the pet trade.[4] An additional 19 files were pulled related to illegal harvesting incidents and patrols of protected areas. ECCC WED files were coded for species traded, locations and types of violations and other information related to trade and enforcement. Data analysis of enforcement files included summaries about inspections and enforcement actions, actors involved, the types of species involved, locations and trade routes, and enforcement actions to build an understanding of formal interactions between law enforcement and supply chain actors.

3.4 Interviews

Sample Population

Purposive sampling with multiple techniques was used to build a sample that reflects and represents the unique nature of a largely unstudied population (Teddlie & Yu, 2007). Given

[4] Filtered by *purpose* for pet, commercial pet, personal pet, breeding, and petting zoo. Other files in the TFT dataset are related to food, traditional medicine, commodities (e.g., trinkets), and protected area management.

the clandestine nature of the illicit trade in TFTs and the difficulty in accessing those involved in the trade, this strategy used a combination of snowball sampling and opportunistic sampling. Although non-probability sampling is not representative of the population, given that those involved in the TFT trade are largely unknown, a multi-technique sampling strategy enabled access to an otherwise inaccessible population.

To narrow the scope of the project, interview sampling focused on those involved in the sale of TFTs (i.e., vendors involved in the sale of TFTs either directly to consumers or to other businesses that sell to consumers (Phelps et al., 2016)). This includes exotic pet store managers and owners, wholesalers, online sellers, and breeders. Breeders and vendors had the most contact with enforcement officers through inspections and investigations and represented the majority of ECCC case files (2008-2018). As actors in the middle of the supply chain (i.e., intermediaries, Phelps et al., 2016), they are also the most likely to be familiar with the movement of animals from harvest/breeding to the final buyer through the supply chain. The niche nature of the reptile trade means that it is likely that some of those solicited for participation in this study have encountered or have knowledge of the illicit market.

Given Canada's small and dispersed population and the specialized nature of the TFT trade, it is reasonable to draw on a nationwide sample. To narrow the initial geographic scope, participant recruitment began with sellers in Ontario. Ontario had approximately one-third of all national TFT pet trade case files in the ECCC records (2008-2018). To initiate the sampling process, those known to breed or sell trade turtles legally in Ontario were solicited for participation. Given the niche nature of the TFT trade and that enforcement records indicate that TFTs are often sold and shipped across the country, it was expected that vendors nationwide would trade amongst each other, forming a larger network. As such, the snowball sampling

process worked outwards from those solicited for participation in Ontario. The initial sampling began with individuals identified through online searches for exotic pet stores, reptile trade show vendors, and online vendors. Key search terms included variations on TFT sales and the names of urban centres along the corridor in both English and French (e.g., turtle, tortoise, tortue, for sale, reptiles, exotic pets, pet stores, breeders, reptile trade shows, and the names of Ontario's ten largest urban centres), this was followed by searches in all of the other provinces and territories.

I contacted 83 vendors to participate in an interview, representing all vendors of TFTs that could be found nationwide through online searches and snowball sampling. Of those, one was excluded because they were a minor (under age 18), and 11 others were excluded because they said they did not sell TFTs. In total, 24 unique vendors (26 individuals:10 female, 14 male, median age 40-49) agreed to participate in an interview, representing a 33% response rate by eligible participants.[5] Overall, the response rate is considered good, given that many of the participants in the study described a reclusiveness amongst vendors and the sensitive nature of the study.

To assess the validity of the sample, I considered data saturation (i.e., the point at which no new themes were emerging (Copes et al., 2020). Some argue that it is difficult to know when theoretical saturation has been achieved, although one study found that saturation of themes occurred within the first twelve interviews (Guest, Bunce, & Johnson, 2006). To further evaluate my sample, I also used Malterud and colleagues' (2016) *information power*, where a sample with larger information power requires a lower N than one with small information power. This approach looks at five dimensions of a qualitative study, 1) aim, 2) specificity, 3) theory, 4) dialogue, and 5) analysis, to estimate of when a higher information power will be achieved. They

[5] Other demographic data was not included to protect the identities of participants.

state that a larger sample is needed when the study aim is broad, specificity is sparse, there is little theory, interviewer/interviewee dialogue is weak, and the analysis conducted is cross-case. Using Malterud and colleagues' (2016) framework as a guideline, it is reasonable to conclude that a small to medium sample size was appropriate. While Malterud and colleagues (2016) do not give specific numbers for sample size, this tool was used for continuous evaluation throughout the process. I also reached the point in snowball sampling when no new contacts were provided (i.e., when asking participants if they knew of other potential participants, they provided only names of people I had already contacted). While the sample size in this study is small, it likely that it provides a fair representation of those trading and selling tortoises. Although it is not possible to know if there is a difference between those that agreed to participate and those that refused (e.g., those who refused could be more closely linked to illegal trade).

Interview Format

Interviews were recorded with permission from the participant. Interviews were in English and lasted on average 68 min (38-184 min). Each interview was followed by the completion of a contact summary form to record emerging themes and informed subsequent interview questions (Miles & Huberman, 1994). Interviews were one-on-one, which has been shown to be more effective for discussion on socially sensitive topics than focus groups (Kaplowitz, 2000). However, there were two incidents where couples that worked directly together wished to be interviewed together. Thus, the total number of participants was 26, but the total number of unique vendors was 24.

Due to COVID pandemic restrictions, participants were given the option to do the interview online (ZOOM) or over the phone. During online interviews (n=11), participants were

told they could leave their video cameras off; however, no online participants chose this option. Although online and phone interviews pose limitations, there is some evidence that the overall quality of online interviews can be equivalent to face-to-face (Shapka et al., 2016) and can provide greater flexibility and privacy to the respondent (Deakin & Wakefield, 2014). While online interviews have pros and cons, the emergence of advanced technology, such as smartphones, makes this an appropriate option for some research (O'Connor & Madge, 2017), especially given COVID-related restrictions. The remaining interviews (n=13) were conducted over the phone. These participants selected this option for personal convenience (e.g., they could do the interview anywhere) or because they did not feel comfortable with the technical aspect of using an unfamiliar online platform.

Interview Structure

Interviews were semi-structured with a preliminary list of questions and prompts, providing the opportunity to ask specific theoretically based questions. The format allows the interviewer to request clarification and explore emergent themes, which may reveal unexpected information about a participant's experience (Galletta, 2012). The interview began with a series of open-ended questions that allow the participant to describe their interest in TFTs and provide a narrative of their experiences in the trade. Interviews followed the natural flow of the conversation but narrowed to more specific theory-driven questions and closed with questions that ask for clarification and greater detail on issues as they emerge (Galletta, 2012). Following this pattern, the initial list of questions focused on the interviewee's interest in turtles and conservation, the species they collect and want to collect, species they breed and where they source their breeding stock to broadly establish their position in the trade and describe the supply chain. Questions related to compliance first focused on their perceptions of the behaviour of

others in the trade prior to probing the respondent for information on their own behaviour. Finally, questions related to morality, pro-environmental beliefs, neutralization, and adaptive responses to sanctions threats were placed toward the end of the interview, followed by opened ended questions that asked them to elaborate on their perspective. The ordering of questions and the wording of questions was modified as the interviewer developed a better understanding of which questions respondents found most sensitive or based on the flow of the interview. Although the question order changed for some interviews limiting the generalizability of the results, it provided the opportunity to improve interview quality and cover the breadth of the topic.

Careful consideration was made to reduce the potential harm to interviewees, including ensuring all data are unidentifiable and recognizing possible impacts that sensitive questions may have on the respondent (e.g., a question about personal pets that trigger emotions related to the fear of losing their pets).

Coding

Official enforcement records were analyzed using Phelps and colleagues' (2016) framework for contextualizing the trade, coding for elements related to species, physical environment, and social and relational interactions. Actors in the supply chain and the network configurations were also coded based on Phelps and colleagues' (2016) typologies, including the actor typology and network configurations and emerging themes. Enforcement records were also coded to record the number and types of interactions actors in the supply chain had with law enforcement and the number of official warnings or sanctions given.

Interview audio recordings were transcribed and collated with interviewer notes for analysis. The interview notes include additional information provided by the participant that was

not in the recording, issues with positionality, unanswered questions, and overall themes. ATLAS.ti v. 22.1.0 qualitative software was used to code transcripts. Provisional coding started with a "start list' (Miles, Huberman & Saldaña, 2020) that built on themes pulled from theory and were revised iteratively throughout the research process. These codes built on actor characteristics (Phelps et al., 2016) and dimensions of deterrence (e.g., perceived sanction threats, severity, certainty, Beccaria 1764/1986; Nagin, 2013). For coding of intrinsic factors, there are numerous pro-environment scales to measure different constructs, including Pro-environmental Identity (see Whitmarsh & O'Neill, 2010); Preference for Consistency (between belief and behavior) (see Cialdini et al. 1995), and Pro-environmental behavior (see Whitmarsh & O'Neill, 2010; Capstick et al., 2019). These scales have been used to look at environmental behaviour associated with travel (e.g., Kaklamanou et al., 2015), and more broadly at general environmental behaviour (e.g., Capstick et al., 2019; Hope et al., 2018), but in their current forms, they are not directly transferable to IWT and to my knowledge scales have not yet been developed for this research purpose. However, these scales provide a foundational approach to conceptualizing the role of pro-environmental beliefs and behaviour and informed the coding scheme. CGBs and neutralizations were coded based on adaptations from studies of environmental behaviour (Hope et al., 2018; Kaklamanou et al., 2015) and environmental non-compliance (Eliason & Dodder, 2000; Eliason, 2003; Forsyth & Evans, 1998), as well as Kaptein and van Helvoort's (2019) proposed model of neutralization techniques.

To establish intercoder reliability and agreement, I used Campbell and colleagues' (2013) three-stage process recommended for semi-structured interviews that require specialist knowledge to code. First, I used the preliminary coding scheme and "dictionary" (with definitions of topic-specific terms and key legal frameworks) to code two randomly selected

transcripts. Two independent coders (Neuendorf, 2019) with no knowledge of the turtle trade or wildlife crime but with criminology training used the codebook to code the same transcripts. The team met between coding transcripts to discuss coding disagreements, clarify terminology, and refine the codebook using a "negotiated agreement" approach (Campbell et al., 2013).[6] Through this process, the codebook underwent multiple iterations with ongoing records kept of the coding decisions and process (see Copes et al., 2020). In the second stage, four additional transcripts were coded with minor revisions made to the codebook until intercoder agreement for each code was reached (min Krippendorff's alpha of 0.67).[7] In total, 6 transcripts (25% of the total sample) were coded in the process.[8] Thirdly, I coded all of the transcripts using the established codebook and agreed upon changes. A second round of intercoder reliability was conducted to refine themes from individual codes (e.g., neutralization techniques, which were initially coded as a general code).

Analysis

A systematic approach to the analysis of interviews broke data into component parts using a number of different strategies. Analysis began with tables describing *Code Frequencies* to develop a broad understanding of the overall trends in the data. To then organize and summarize codes, *Meta-matrices* were used to help compare interviews (Miles & Huberman, 1994; Miles, Huberman & Saldaña, 2020). Data were then formatted around domains and variables of interest to outline summary phrases and quotes and develop conditional judgements

[6] A negotiated agreement approach is appropriate for exploratory research that is designed to generate new insights, and when the coders have different levels of knowledge (Campbell et al., 2013).
[7] Tentative conclusions can be drawn with Krippendorff's alpha of 0.666 – 0.8. Krippendorff's alpha is increasingly used as test for intercoder reliability as it accounts for the coders agreeing by chance (Krippendorff, 2004).
[8] Recommended that 10-25% of sample be used to establish intercoder agreement (Campbell et al., 2013; O'Connor & Joffe, 2020)

(Miles & Huberman, 1994; Miles, Huberman & Saldaña, 2020). During the analysis, coded text was examined, and the original transcripts were often revisited to ensure that meaning and context remained intact (Campbell et al., 2013).

Given that those involved in the illicit trade may not always answer truthfully, results from interviews were compared to results from the enforcement records using joint displays. These are used to organize and systematically compare results between methodological approaches (Cresswell & Plano Clark, 2018; Guetterman, Fetters & Creswell, 2015). For example, joint displays were used to compare the supply chain characteristics in the official records with that described in interviews. In addition, information that was unique to the enforcement files was also reported.

Qualitative studies in criminology were critiqued by Copes and colleagues (2020) for failing to include information on positionality of researchers that could influence research outcomes (Copes et al., 2020). Given that there are strong opinions for and against using wildlife and keeping wildlife, perceptions of the interviewer's position could influence the results. To reduce bias, the study was presented to participants as taking an ecocentric (see Wyatt, 2013) approach that does not take a position on the use of wildlife.[9] See Appendix B for a detailed discussion on issues related to positionality.

[9] An *anthropocentric* perspective places human needs above those of nature, a *biocentric* perspectives places prioritizes the environment and wildlife, an *ecocentric* perspective aims for a balanced approach by recognizing the needs of both humans and the environment (see Wyatt, 2013).

CHAPTER 4: SUPPLY CHAIN CHARACTERISTICS

Chapter 4 presents the results and discussion on the supply chain characteristics (Part I) based on interviews and official enforcement files to describe characteristics and intersections between legal and illegal supply chains. The results outline the key actors, locations, and methods of transportation (Research Question (RQ) I-1), drivers of trade in Canada (RQ I-2), intersections between legal and illegal supply chains and points where federal wildlife enforcement officers intervene (RQ I-3) and the strategies used to avoid detection of illegal trade (RQ I-4). The discussion compares the supply chain to other wildlife crime types and highlights key points where legal and illegal trade intersect.

4.1 Results

Species

The combined interview and enforcement data revealed evidence of 60 unique species of TFT sold for pets or traded in Canada between January 2008-July 2022 (Appendix C). An additional 6 species were uncovered during inspections at the border, but their presence in domestic trade is unconfirmed. According to breeders and enforcement records, 38 species circulating in the Canadian market are also captive-bred in Canada.

Actors Overview

The actors presented here are those discussed by interviewees or found in enforcement files. The activities of the different actors (harvesters, intermediaries, and consumers (Phelps et al., 2016)) fell into three broad categories based on the supply chain operations reference model (SCOR) (Huan, Sheoran & Wang, 2004). SCOR breaks the supply chain into three parts: *source*, *make*, and *deliver,* with the *planning* process linking and managing these stages (Huan, Sheoran & Wang, 2004). The *source,* in this case, is considered the point from which the animal was

either collected from the wild, captive-bred or brought into the country.[10] The next stage is *make*, where supplies are transformed (e.g., manufacturing) (Huan, Sheoran & Wang, 2004). In the case pets, the animals are not transformed (although they may grow and mature), but value is added through time and space utility (Hsieh & Chu, 1992), whereby the actor is increasing (transforming) the value of the animal by moving the product and creating new sales opportunities. Here I refer to two activities as the *purchase from a source* and the *sale to a wholesaler or a retailer*. The final stage of the supply chain is *deliver* – this is the point at which the animal is transferred to the end customer. Some actors participate in multiple stages of the supply chain (e.g., a breeder primarily breeds animals, but may also sell to end buyers) (Table 4.1).

Table 4.1: Actor types and stage of the supply chain

	Source			**Time & Space Utility**		**Deliver**
Actor	Wild Collection^	Breed^	Import	Purchase from a source	Sell to wholesaler or retailer	Sell to end buyers
Harvester	x				(x)	(x)
Breeder		x		(x)	(x)	(x)
Trafficker			x		(x)	(x)
Wholesaler		(x)		(x)	x	
Retailer		(x)		(x)		x

x = always; (x) = sometimes; ^=domestic source

Harvesters

Harvesters here are defined as those who collect animals directly from the wild (Phelps et al., 2016). A few different types of harvesters emerged that fit into the typologies described by Phelps et al. (2016). *Opportunists* encountered TFTs by chance; these harvesters lacked intent but seized a presented opportunity. Some respondents described how people would find a turtle

[10] Technically the collection of wild animals here can be referred to as *poaching* since it is illegal to take turtles from the wild (see Musgrave et al., 1993; Moreto & Lemieux, 2015). However, more than 40 biologists, social scientists, and law enforcement officers who are experts in TFT trade spent hours over multiple days at a recent turtle trade workshop (2023) debating the appropriateness of the term poaching to describe illegal collection – no consensus was reached.

on the road or in a pond and bring it home as a pet. “I think people think that they rescue turtles… They’ll find one on the side of the road, they don’t understand that it is kind of migrating to where it needs to go to be safe… so they pick it off the road and they think ‘I rescued this’ and then they put it in a tiny aquarium…” [1323]. Other vendors described people coming into their stores looking for equipment to care for a wild turtle that they found. Some *opportunists* were also said to post found animals for sale online.

There were also more *specialist* harvesters, those that intentionally searched for and collected animals from the wild (Phelps et al., 2016). One vendor described an incident where an individual connected to a naturalist group was caught collecting turtles from a wild population they had been following. “We found out somebody we knew had taken them and sold them to somebody we knew in my hometown” [2220] (a behaviour the group quickly responded to with peer pressure, see also Chapter 6). Another vendor described hearing about an incident where someone was caught with “a bunch of Blanding’s turtles he was taking across the border to trade for something in New York state” [7137]. Although the extent to which this happens is unclear and poorly documented.

A third type of harvester fell outside of the Phelps and colleagues' (2016) framework. This harvester collected animals illegally under the guise of conservation. The individual claimed that they had collected wild turtle eggs (illegally) to protect them from potential predators so that they could hatch and be released [Enf file 5636]. It is unclear if this person truly intended to release the hatched turtles.

Breeders

Breeders are defined as anyone who has animals that produce offspring to sell or trade, but that did not have a brick-and-mortar store or regularly sell other pets (unless they bred them)

or equipment. Twelve interview participants actively bred TFTs for sale in Canada. Based on enforcement records and interview characterizations, it appears that there are no large-scale breeding facilities. Breeders in the study reported breeding anywhere from one species to upwards of 20 different species, with some specializing in subspecies and particular colour morphs. The volume of animals bred was typically reported as low and many participants found it difficult to estimate how many offspring they have each year, especially given breeding success can vary year to year.

The types of breeders described by participants fell broadly into three categories: professionals, hobbyists and accidental. Professional breeders had multiple species of TFTs or other reptiles that they intentionally and regularly bred for sale directly to the public through wholesalers or a pet store. Some pet stores purchased from hobbyists; these were pet keepers who occasionally bred their TFTs as a hobby and sold the offspring to recoup the husbandry costs. Other pet owners were said to accidentally produced clutches, which they would go on to sell to retailers.

Some breeders screened their customers and carefully selected wholesalers and retailers. “I’m very particular about who I sell my turtles to. I won’t just sell them to anyone. I could sell to a whole bunch of wholesalers, but they don’t do any follow-ups or checks or education or whatsoever… So, I used to deal with one wholesaler I could you know, keep dealing with him” [4130]. A few noted they were able to do this because the supply was lower than the demand (see details on supply and demand below).

Importers

Importers here are described as *intermediaries* who move wildlife across the border, in some cases naively and in other cases knowingly as *logisticians* or *smugglers* (Phelps et al.,

2016). Illegal imports were identified in the enforcement records (n=18, alleged violations) and described by interview respondents (n=13). In the enforcement files, there were a few cases where the importer claimed ignorance, stating that they were unaware of the laws (n=3). In the interviews, one vendor described how someone they know drove across the border with one turtle and even declared it at customs. Other importers appeared to move a small number of animals at a time but intentionally hid them. This may be for personal purposes; for example, an elderly gentleman was found with three pet Greek tortoises in his luggage on a flight from Egypt (he claimed that he did not know it was illegal to import them, but the prosecutor noted that he declared *no animals* on his customs form) [Enf File 2708]. In other cases, turtles were imported in a clandestine manner, presumably by those that recognized the restrictions).

Enforcement records showed animals primarily smuggled from the U.S., although some animals originated from outside North America (Asia, South America, and Africa). Some vendors also described foreign source locations. "I think it's mostly coming up from the States. Some of it comes in from Asia as well, some of the illegal stuff" [5206]. Methods used to transport include by land, mail, boat, shipping containers, air cargo, and air passenger baggage.

Table 4.2: Techniques used to import TFTs into Canada as described in the enforcement files and perceived by interview participants

Method	# Enf Files*	Enforcement Record Example	Interview Examples
Unintentional/ naïve (unaware or feigned ignorance of the law)	2	An individual flying from Azerbaijan to Canada declared a pet Greek tortoise (*Testudo graece*). At customs they presented veterinary records for the animal but did not have a CITES permit. The animal was detained and later abandoned by the owner. [Enf file 8113]. A cargo shipment from Indonesia containing 3 Mekong snail-eating turtles (*Malayems subtrijuga*) and 5 south Asian box turtles (*Cuora amboinensis*) along with live pythons and lizards, had CITES permits but no permit from CFIA [Enf file 4575].	"I have a friend that drove across the U.S. border with three of these golden coin box turtles on his passenger seat. When he passed the officer, and he goes, do you have any animals or whatever? He goes, yeah, I have like three turtles there on [the] seat, my pets. He flew right across" [4130].

Table 4.2 (cont'd)

Method	# Enf Files*	Enforcement Record Example	Interview Examples
Mail/Couriers	4	11 diamondback terrapins (*Malaclemys terrapin*) declared as a book sent from USA via FedEx. Detected by CBSA [Enf file 4094]. Mailed 9 African spurred tortoises (*Centrochelys sulcatas*) to Ontario via the U.S., declaring the shipment as a radio with $30 value. Later sold the turtles in Toronto [Enf file 7394].	"It's the people that are bringing in 10,000 turtles at a time, or they're, they order 50 boxes of red ear sliders with a 100 in every box and maybe 20 don't get through, but 30 boxes do get through and there's no real follow up. It goes through the mail…" [8584].
Hidden in vehicles	2	Individual that declared they did not have any plants or animals was caught at the border with more than 1400 turtles, tortoises along with boas, pythons and king snakes hidden in the panels of the vehicle. The individual was aware of CITES permit and USFW export declaration requirements [Enf file 8599].	"…taking the panels of the side of their, you know, the door of their van and filling it with animals" [1042]. "But if smugglers really make an effort, like I think the last guy, I think he said he had them under a fake layer in his trunk" [4130]. "When all the reptile show were on all the time, [they] would go to the show in Cleveland, which was held monthly, he would buy three baby red foots and bring them back in a Tim Hortons cup in his coffee holder in his car and drive right across the border. Never ever got caught." [7137].
Hidden amongst legitimate goods (e.g., in large shipments)	1	An investigation found 20 red footed tortoises (*Chelonoidis carbonarius*), 10 yellow spotted river turtle (*Podocnemis unifilis*), 200 Chinese pond turtles (*Chinemys reevesii*), 150 Chinese stripe necked turtles (*Ocadia sinensis*) and a large quantity of non-CITES turtles hidden with CITES-listed corals among a shipment of non-CITES fish, anemones, and aquarium equipment from Hong Kong. Detected at the airport by CBSA [Enf File 3163].	"One person did like a huge import for like frogs and lizards and stuff, and that he got in a shipment and then the same Kijiji user had like Indian Spotted for sale – it's like whoa, that's really suspicious, like didn't you actually import Indian spotted at the same time" [8584]. "The whole story is that the animals leave the U.S., then they get shipped out to China, and then once they're in China they get shipped out through containers for like, the whole month, and they get through containers with like fish , food probably, like fish for human consumption"… they're just hidden in there. And like turtles are the strongest animal in the world, so they live through almost everything… they go through hibernation… able to survive this long journey." [9197].

Table 4.2 (cont'd)

Method	# Enf Files*	Enforcement Record Example	Interview Examples
Hidden in air passenger luggage/carry-on	3	Three Greek tortoises (*Testudo graeca*) hidden in passenger luggage found at airport. The officer's notes describe the individual as having "selective forgetfulness/amnesia" when asked about the tortoises. [Enf file 2708].	*No incidents of passenger luggage described by vendor respondents.*
Hidden on person	2	An individual travelling by car across the border from the U.S. hid more than 50 turtles in a sealed bag taped to their body. [Enf file 7114].	"… people have tried to come over the border with turtles, like strapped to their legs and in their pants and things like that". [5206].
Use third party to transport across the border		*Use of a third party not clear in enforcement files.*	"… he's been caught a couple times, smuggling turtles, he now gets young kids to do it, so if you get a drivers license at like, 16, you know, he'll talk a 17 year old into smuggling turtles across" [1042].

*Count of the number of enforcement files where the smuggling method was clearly documented

Wholesalers & Retailers

Other intermediaries in the supply chain (Phelps et al., 2016) included wholesalers and retailers. Wholesalers generally sold a variety of animals, with TFTs being one of many taxonomic groups they supplied to retailers. For example, wholesalers also supplied fish, other reptiles, arachnids, and amphibians to pet retailers across the country. Some wholesalers also bred TFTs. Retailers sold TFTs directly to end buyers. They include some larger chain pet and aquarium stores and privately owned pet retailers. Retailers sold TFTs, other pets, and equipment directly to the public through brick-and-mortar or online. Many of the pet retailers interviewed as part of this study focused on specialty or exotic pets (including reptiles and birds). Others focused on reptiles, amphibians, and arachnids. One vendor described the different types of retailers.

> "I think there's like, kind of two classes, the ones who really care about the hobby and the animals and want to do it right. And then there's the other ones that are trying to get it for the quick buck, and they see or hear what some people are making off stuff, and they're more just the greed." [2298]

To source animals, retailers either bred their own animals or got them from breeders, wholesalers, or private individuals. During interviews, some vendors revealed two basic strategies for purchasing animals from suppliers, either using trusted suppliers or ad hoc suppliers (Figure 4.1). Those who used trusted suppliers always purchased from a small set of wholesalers or breeders that they felt they could trust to reliably deliver quality animals. Other retailers took a more ad hoc approach, purchasing animals based on supply regardless of their relationship with the supplier. For these vendors their suppliers may include wholesalers, professional, hobbyist or accidental breeders, or in some cases online vendors (e.g., on Kijiji). Although some vendors clearly used one strategy over another, other vendors used a mix of both trusted suppliers and ad hoc suppliers.

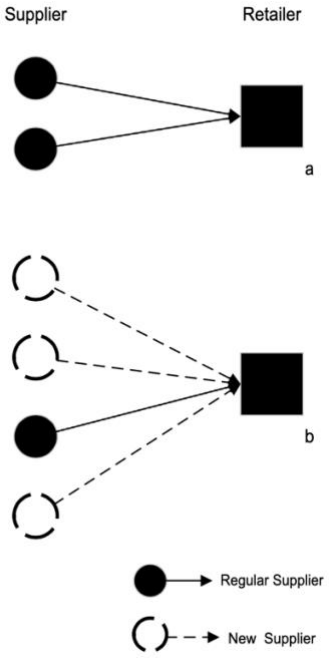

Figure 4.1: Retailer-supplier relationships. Retailer uses trusted suppliers (a), and ad hoc suppliers (b)

Points of Sale

Based on a synthesis of information in the enforcement files and interviews, there were four main points of domestic sale where TFT change hands: in-store, expos, online or through some form of personal exchange (e.g., direct sale or trade with a friend or colleague) with wholesalers sometimes acting as an intermediary (Figure 4.2).

1. *In-store* sales are brick-and-mortar stores where people can come in to purchase or order TFTs (retailers).
2. *Expos.* Vendors (including retailers and breeders) sell animals at pet and reptile specialty expositions or trade shows. Pet and reptile-specific events occur multiple times per year, often at convention centres in big cities (e.g., Toronto & Calgary). One vendor described expos by saying, "Here you have people [vendors] that come and go all the time, you'll see the same names over and over, the same faces over and over. But then there are certain people who you've never seen before, and they show up and then you never see them again" [8755].
3. *Websites* and online sales platforms are key points of information exchange. Sales were described as largely occurring on store or breeder websites, *Kijiji* (an online of classified ad website that allows for seller anonymity) or, in some cases, through Facebook forums. However, given Facebook's restrictions on the sale of animals, Facebook is not commonly used, and when it is, people will circumnavigate the restrictions by using creative wording in the ads (e.g., "… so you can't sell animals on Facebook, technically, people will be like, they'll post a photo of an animal and say, this one's looking for a vacation." [3381]). Online platforms are also used by people seeking a particular animal. For example, potential buyers post ads looking for an animal of a particular species, age

or sex. Some vendors also described the need to be conscious of scam ads when looking for TFTs online (n=4). In some cases, these scams originate outside of Canada (e.g., you can see the seller is located on another continent), and they are advertising exotic TFT species, as described by this vendor, "Even on Kijiji at some points, I was seeing ads for all kind of species and cheap, and I was like, what, and then you open the link, and it's, you know, from Cote d'Ivoire in Africa, so it's not, it's not real, it's a scam. You have to be careful for that" [5301]. Another described red flags for online ads. "Sometimes it's not even their photo, like it might be someone else's photo. But it happens a lot. Canada's small in terms of population, so when you have someone that works with a really rare animal, there's only usually a handful of them. And there's only a handful of photos. And so sometimes you'll be like, I've seen that before, that's so and so's photo" [3381]. They go on to talk about unusual prices also being a red flag for online scams or illegal trade.

4. *Personal exchange* includes the trade of pets between people who know each other or who have found each other through some other mechanism (e.g., word of mouth). One vendor said "I would say most of my customers are word of mouth or a lot of people Google these days. … Generally, people have come to me, they've researched ahead of time. They found my name on a forum, they've researched me…" [4130].

Notable along the supply chain is the number of paths to the end buyer that can or do transfer illegally sourced animals (discussed in detail below).

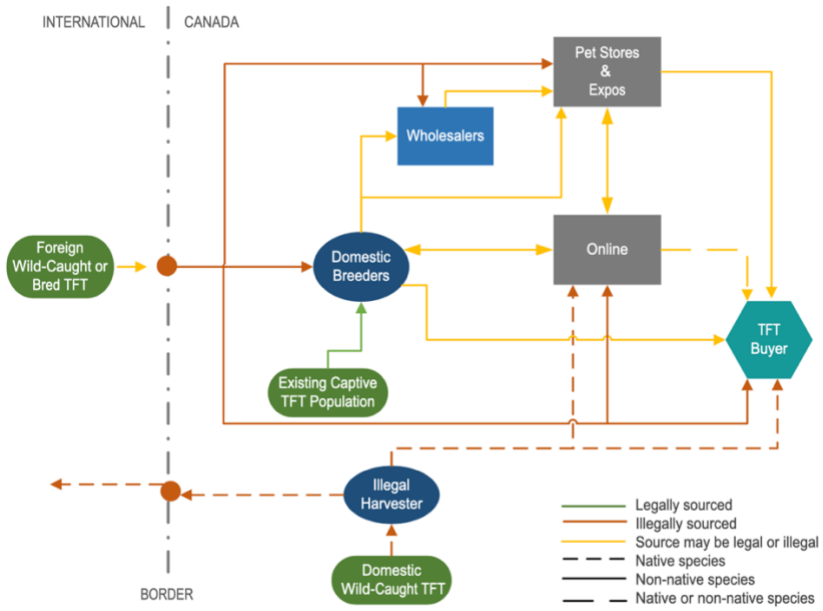

Figure 4.2: Commercial TFT trade in Canada

Transit

Vendors (including breeders, wholesalers & retailers) openly distributed TFTs across the country, although Ontario appears to have the largest number of vendors (note: no vendors were identified in the Territories in the north of Canada or the eastern provinces where there are provincial restrictions on TFT pet sales). Vendors regularly sold to other vendors or customers across the country. "We ship across Canada, from BC or the Maritimes or Saskatchewan, yeah everywhere" [5524]. This was easily accomplished through shipping by air cargo (e.g., Air Canada) (n=4), or using courier services which can provide next-day delivery (e.g., FedEx or UPS). To facilitate courier shipments (e.g., with FedEx), specialty reptile services will arrange logistics and packaging for delivery, which many of the vendors described using (n=11). "They check the weather and everything, and then we put heat pads in a box, and it's an overnight shipping. It comes to the customer the day after… I've never had any trouble, really no disease, no death, nothing" [5301]. A couple of vendors used courier services directly. "I have my own [name of courier company] live harmless reptile license, so I just kind of cut out the middleman,

and I ship using FedEx, much cheaper" [7607]. Some noted that they are careful not to ship during the cold winter months or if very cold or hot weather is predicted (although they do ship with heat packs and cold packs to regulate the temperature for the animal). Although most vendors reported overall success with shipping animals this way, there were a few incidents where heat packs failed, or the package was lost for an extended period, and the animal died. Some vendors that are further from a transportation hub will try to send multiple shipments at once by delaying shipments until they have a few orders ready. "You try, and you know amalgamate where, you know, if I have to drive to the airport… I want to make sure like three or four or five shipments get out at the same time..." [1042].

In some circumstances, shipping was unnecessary because the customer was able to pick up the animal. In other circumstances, the vendor elected to arrange their own transportation to control the delivery of their animals, as shipping through a third party makes them nervous. "We try to reduce the chance of shipping as best we can" [8755] said one. Another vendor said they arrange all their own trucks and delivery because they "…don't really believe in utilizing systems that aren't 100% animal savvy. You can tell me all day long you'll get a box there within 24 hours and I'll tell you all day long, there's too many variables to risk the animal" [9547].

Buyer Selection

Buyer selection also played a pivotal role in the supply chain. Similar to some of the breeders discussed above, many of the retailers described being selective about the customers that purchase their turtles, choosing not to sell animals if they think the new owner would be ill-equipped to care for the animal (see Chapter 6 for more details). For some vendors, this meant that they spent significant amounts of time with their customers educating them about animal

husbandry techniques. Many of the vendors described having family-like relationships with their customers that fostered a repeat customer base for the purchase of food supplies and other animals. Some vendors described being willing to take returns if the customer was ever unable to care for the animal in the future. This type of relationship existed between small family-owned retailers and their customers, but some participants noted that the lack of staff experience at big chain stores means they are less selective with their customers.

End Buyers

Vendors described a spectrum of customers. “It’s really random, random, we’ve got customers that will shock you” [1323] said one vendor discussing how they see everything from “grandmas” to people with “face tattoos”. One vendor said, “I’ve sold tortoises to like a 21-year-old and to an 80-year-old guy, it’s all over the place. It’s very hard to be like, this is the demographic” [3381]. Despite the range in customers, a few patterns emerged. One vendor described two of the most discussed types of customers.

> “…there’s two types of clients. First type is they’re there for the kids… they just want a turtle that’s cheap, easy to care for the kids… and we try to dissuade them to buy one of those types … because there’s no such thing as a cheap turtle. Even if the turtle is cheap the equipment to take care of it, it’s going to be very expensive… And the other type of client are really passionate about a particular species that are looking for that one, and we’re going to try to help them find the particular tortoise they are looking for.” [5524]

Nostalgia for their childhood was often described as a reason why parents were looking for turtles for their kids. They want to share their experience of owning a turtle with their child and typically looked for inexpensive turtles (e.g., red-eared sliders). “Usually what I find the most for these turtle buyers are people who had little turtles when they were kids, and now they have kids, and they want to do that for their kids" [2298]. Another vendor described how they are generally looking for an inexpensive pet “[the customers say] ‘I want to buy a turtle for my child; I want

them to have that experience.' You're probably buying the cheapest turtles, you're probably not buying the $800 red cheek mud, you're going to buy the $200 red-eared" [1042].

On the other hand, there are more committed TFT buyers. These customers were often described as either turtle or tortoise people, where the buyer prefers to keep either only turtles or only tortoises. The difference between turtle and tortoise people was largely attributed to the difference in the care required, which shaped their preferences (e.g., turtles are generally aquatic and require different husbandry from terrestrial tortoises). "They're very different, they're not as, like anything alike… their care is completely different" [5206]. Regardless of their preference, committed buyers usually did their homework. Here, a vendor describes the difference between committed customers and people just looking for a cheap turtle "…people come in, and they ask for specific species, they know, they're very well prepared. It's very extreme, the difference actually" [5206]. Another vendor compared committed buyers to the more spontaneous buyers, "The tortoise people, usually people have done the research, or they will always no matter what animal, you always get people who just see it and think it's cool" [2298]. Most of the committed buyers were said to keep only one or two individual TFTs, especially in the city where there is limited space, but those outside the city "have more land, tend to keep groups… where it gets very cold in the wintertime, people build some pretty crazy things on, like, in barns or in basements…" [5206]. Given the long lifespan of TFTs, some vendors described how their customers would include their animals in their wills.

Other end-buyers are collectors that have a variety of species (Phelps et al., 2016). "The collectors will start with the beginner one and go, 'well it's nice to be a little bit rare, something a little bit more difficult, something a little bigger, something you know maybe aquatic', and so they'll just start with the basic to get [started] and then they'll fall in love …" [4130]. Collectors

are described as wanting unique species and may already have a variety in their collection. Some of these buyers become repeat customers, as noted by one retailer: "there's a [name of profession removed] actually in [name of city removed] that usually contacts me once or twice a year to see what I have available" [1079]. This customer was always looking for something new.

Supply & Demand

Here I outline issues of supply and demand to build a broader understanding of the drivers of the trade and how the supply chain functions. From a supply perspective, a common theme in interviews was the low availability of TFTs, including a minimal number of species and low supply of the species that are available. The commercial import restrictions limit legitimately sourced TFTs to the offspring of animals that were imported before the import ban. Some TFTs take a long time to reproduce and can be difficult to breed, which adds to the low supply.

Native species of turtle are also considered rare. Some native species, such as spotted turtles (*Clemmys guttata*), are considered hard for harvesters to find, "they're not abundant, like the number of hours needed to find one probably defeats the purpose of financial gain if someone's exporting them, especially since they're not regulated in other countries [where they are captive-bred]" [7606] but "apparently there are poachers out there who send turtles and tortoises to Asia" [7606].

Despite the low domestic supply, there remains demand for TFTs in Canada. Many vendors discussed how quickly they sell new stock. Some breeders described having their offspring sold before they've even hatched. "I already have people on my waiting list for 2022 babies. I have one species that's pretty much sold out. Like basically the minute they're hatched, they are pretty much sold out; I have deposits on them" [4130]. This vendor also commented that the demand for TFTs rose during COVID. "But I didn't produce enough to supply the demand,

especially since COVID hit the demand for turtles tripled" [4130]. However, some retailers described having some TFTs that remained unsold for months in their stores. Others noted that it would be possible to saturate the market since they consider the number of potential buyers to be small. Once those who want a rare species have one, they might not get another. TFTs take up a lot of space, and the equipment can be expensive, so people may only have one or just a few TFTs in their homes.

Illegal Trade

Given the low supply and high demand, one of the most cited drivers of illegal activity is the price asymmetry between the U.S. and Canada. The high prices that importers ask for TFTs are thought by some to incentivize smuggling and illegal trade.

> "I mean, the price of, like, red-eared sliders, for example, are worth like peanuts. Right? You're talking about, like, people want animals that are bred so regularly in the U.S., and what happens is that even though there's so little, there's just the demand on them is so high. So here they would sell them… they probably get five times the value …" [9197]

Although there is evidence of TFTs being illegally imported into Canada (Table 4.1 above), the extent of illegal trade is difficult to assess. Some see the illegal supply as minimal, "I think there really isn't that much supply, but I don't think that many people are doing that [smuggling] where it'd be a huge issue anyway. I think you would see it flooded if that was the case, like where people, tons of people were doing it. Like, you'd see tons of shit on Kijiji or whatever, like Craigslist kind of thing" [6722]. Others see it as more common, "I would say people are definitively smuggling in" [1079]. Another said, "I think, though, also the smugglers are supplying more the wholesalers—a couple of them. There was one, in particular, I'm not going to mention names" [4130]. Another described suspicious online ads. "It was a few months ago; I saw one on <name of website removed>".

There are also species unlikely to be domestically bred in volume, which can be found for sale in Canada, suggesting that they have been brought into the country illegally.

> "But these illegally sourced turtles and tortoises show up online. So, you got to be very careful because a lot of times, like I'll see on Kijiji, and stuff like that, where there's just a pile of red-eared sliders for sale or other species that aren't being bred so much in Canada, and you kind of know where they're coming from, like they're paying, like a buck a red-eared slider in the States. They're just hiding them and sneaking them up here." [2298]

Another vendor described pancake tortoises suspiciously appearing in Canada. "I don't know anyone that's breeding those, but you'll see, you know, occasionally they'll pop up, or somebody will say, 'Oh, I just bought a pancake tortoise' 'Oh really cool, where'd you get it?' 'Oh, you know, I can't really tell you,' sort of, hmmm oh ok, … so they're coming in from somewhere" [7137]. Another said, "It's just something that there's no zoo had them in Canada. So, there's no way for the breeding population to be here. But yet these are available. So just makes you kind of wonder." [2298]. In addition to the low likelihood of certain species being domestically captive-bred, animals in poor health were also seen as a red flag "…it was pretty obvious by their condition and by the fact that a lot of the species weren't bred in captivity" [7607].

Legal and illegal supply chains intersect at several points, making distinguishing legitimately captive-bred TFTs from smuggled TFTs challenging (Figure 4.1). Once a TFT has been imported into the country, it becomes difficult to prove the point of origin "they're basically untouchable once they go across the border, you like can't do anything." [3381]. Illegally sourced animals can then be sold through legal businesses or points of sale (e.g., breeders, wholesalers, pet stores, expos). Since there is no process for documenting offspring of legitimately bred non-native species in Canada, illegally sourced TFTs can move easily through the supply chain, and there are numerous opportunities for laundering (see Figure 4.2). This poses challenges for customers purchasing online or from stores, especially when they assume

that if it is for sale, it must be legal. “I figured if he was there selling openly on Kijiji that everything was above board” [1079].

Law Enforcement

The wildlife law enforcement files provide records of where law enforcement has patrolled (domestic wild TFTs) (noted above) and also conducted inspections of stores and wholesalers (n=40), expos (n=6) and homes and private addresses (n=16).[11] As noted above, records described incidents where customs and wildlife enforcement officers intercepted illegal imports at border crossings, including some major cases which resulted in prosecutions. Law enforcement also monitors websites for potential violations (see Chapter 5 for details about law enforcement).

4.2 Discussion

The results outline the key actors, locations, and methods of transportation (Research Question (RQ)I-1), drivers of trade in Canada (RQI-2), intersections between legal and illegal supply chains and points where federal wildlife enforcement officers intervene (RQI-3), and the strategies used to avoid detection of illegal trade (RQI-4) and have implications for how we understand exotic pet trade supply chains and theory development. Here I outline three main areas: firstly, how descriptions of the actors, locations and demand fit with our knowledge of other wildlife trade supply chains. Secondly, the flow of information and goods moves through the supply chain, and finally how legal and illegal supply chains and law enforcement intersect.

[11] Number of enforcement files related to inspections is likely to be an undercount because only files that specifically mention TFTs are included (e.g., an officer may not have mentioned the presence of TFTs when writing the file notes).

Limitations

Results build a clearer picture of the supply chain structure; however, some key limitations frame the following discussion. Results from official records presented here remain limited to detection and reporting by federal-level law enforcement. The enforcement records included in this study are from a single law enforcement agency that acts nationwide (federal wildlife enforcement); other agencies such as the RCMP, CFIA, CBSA, provincial-level and municipal-level may inspect or intervene at various points along the Canadian supply chain and are responsible for the enforcement of laws that fall outside ECCC's mandate. While some of these activities are captured in the ECCC enforcement data (e.g., CBSA referred cases to ECCC), some incidents are likely missing, so results likely underestimate incident numbers. Law enforcement agencies outside Canada (e.g., in the U.S.) may also directly influence supply chain patterns at the border. Given the non-random and small sample size of interview participants, it is difficult to generalize results beyond this study. However, results on the supply chain from the interviews were consistent with information found in the federal enforcement records. Results presented here provide valuable insight into an understudied population and highlight essential points along the supply chain.

Actors

Many of the actors in the supply chain aligned closely with those described by Phelps and colleagues' (2016) framework. For example, opportunist harvesters stumbled across a turtle and decided to take it home. However, one fell outside of the framework. Notably, those that harvested TFTs under the guise of conservation, saying that they intended to hatch the eggs to protect them from predators by *headstarting* in captivity, a practice used by conservationists for species recovery (e.g., for wood turtles in Ontario, Mullin et al., 2020). This narrative fits into

Shukhova & MacMillan's (2020) typology of *lifesavers* who are motivated to keep animals by the desire to save them (see Section 6.2 for further discussion).

Most participants could not provide a single description for end buyers, instead describing them as falling along a broad spectrum. However, two typologies consistently emerged that appear to align with Shukhov & MacMillan's (2020) *new experience seekers* (parent's looking for TFTs for their children) and *collectors* looking for unique pets. Inexpensive red-eared sliders not bred on-scale in Canada are cheaply (and illegally) sourced from the US to meet the demand for inexpensive pets for children. In contrast, other buyers were willing to pay higher prices for specific or rare species to expand their collection. Further theoretical inquiry into buyer behaviour will need to account for this spectrum of buyer typologies and the different species that feed into the demand.

Locations

As with the actors involved in the TFT supply chain, there were several different location types. Brick-and-mortar stores and expos continue to be major points of sale, but online sales emerged as an ongoing theme, which is consistent with international TFT trade (Mandimbihasian et al., 2020) and other forms of wildlife trade (Lavorgna, 2014; Marshall et al., 2022; Stringham et al., 2021). Although some sales occurred through vendor websites, the online classified site Kijiji was consistently used for TFT sales in Canada. Kijiji provides a platform that protects vendor and buyer anonymity and allows for ad hoc sales. Efforts by other websites (e.g., Facebook) to limit the online sale of wild animals likely make websites without such restrictions and monitoring an attractive option. However, online sales were not always genuine. Scam ads with posters from foreign countries occasionally appear, which has also been documented in other online wildlife markets (e.g., Indonesia, Morgan & Chng, 2018). These scam ads can be

problematic and not just for potential buyers. Wildlife trade assessments often survey online markets to understand which species are in trade and how frequently (Stringham et al., 2020), These surveys are frequently used for research, so fraudulent ads could undermine trade assessments and may lead to an overestimation of trade volume and the rarity of the species involved. Including information about the original location of ads, the species, and the price could help to flag these scam ads in future online wildlife trade surveys and research (Morgan & Chng, 2018).

Flow of Goods & Information in the Supply Chain

The TFT supply chain in Canada appears loosely organized, but animals can take multiple legal and illegal pathways to end buyers across the country. Unlike inanimate products that can be manufactured regularly to meet demand, TFT breeding is seasonal and unpredictable. This makes it difficult for breeders to regulate their supply, particularly in Canada, where the cold winters limit the ability to breed large numbers of TFTs outside (as found in the southern U.S., Mali et al., 2014). Vendors took different approaches to manage supply through *customer service and relationship management*, and *demand management and procurement* (Lambert et al., 1998). Retailers either tried to control their supply by building trusted relationships or taking ad hoc opportunities to purchase TFTs. The establishment and maintenance of relationships with regular suppliers may be based partly on trust built on reputation, identity, image (see Smeltzer, 1997), credibility, kinship, or reciprocity (van Uhm & Wong, 2019). In contrast, those who used ad hoc suppliers may rely less on trust and make decisions based on an economic cost/benefit analysis. The choice of suppliers has implications for the level of vendor due diligence. If a vendor is using ad hoc suppliers, they may not care, or try, to identify if the animal has been sourced legally. Or a trusted supplier may be trusted because they can consistently deliver hard-

to-find species (even if the source is illegitimate). There is much to unpack in understanding what underpins the vendor relationship with suppliers, particularly from a social network perspective, with implications for both theory and crime prevention.

Concerning the relationship between vendors and their end customers (*customer relationship management*, Lambert et al., 1998), TFT vendors in this study are often described as being selective. Many wanted to ensure that their customers had sufficient equipment and knowledge to care for the animals. For some, this meant that they refused to sell animals they deemed to be unsuitable pets (e.g., red-eared sliders) or to buyers they felt had insufficient knowledge or resources to care for the animal properly. Many vendors even expressed a willingness for customers to return their animals years later. In this regard, it appears that some vendor/buyer relationships were built on more than a simple economic calculation (see morality and pro-animal welfare and conservation beliefs Chapter 6).

Interactions between actors in the supply chain followed many pathways, which could influence the exchange of information about supply and demand (*supply-demand integration*, Stank et al., 2012). Messages about supply were transferred through stock lists supplied by wholesalers to retailers, but also in less traditional ways, such as through online posts by breeders about clutches that are about to hatch. Signalling demand also occurred through wanted ads online, such as Kijiji, where potential buyers looked for specific species or sexes. These ads may signal demand to both legitimate and illegitimate suppliers who may try to breed or illegally import animals knowing there are motivated buyers. Recognizing the signalling mechanisms within the supply chain could help to identify emerging trends and target crime prevention and demand reduction strategies.

Illegal Trade

With a perceived high demand and low supply, TFTs are sourced from inside and outside the country with both legal and illegal origins (see also CEC, 2017). The flow of illegally imported TFTs into Canada is difficult to assess, and there are many paths through the supply chain where illegally sourced animals could be laundered into the trade undetected (Figure 4.2 details about law enforcement). Actors used a variety of concealment methods along the supply chain, particularly when animals are illegally transited over the border or harvested domestically from the wild. This spectrum of concealment methods used to smuggle wildlife across the border and at various stages of the supply chain was consistent with other forms of IWT (e.g., hiding amongst legitimate goods) and trade in illicit goods (Keskin et al., 2022) and underscores the complexity of the network.

Unlike many illicit drugs that remain illegal from origin to final sale, there is a legal market for TFTs that can mask the black market. Even experts have difficulty distinguishing legitimately sourced animals, and laundering of illegally sourced animals into legitimate markets (such as captive breeding facilities) is an ongoing threat (Brandis et al., 2018; Leupen & Shepherd, 2018; Nijman & Shepherd, 2015b).[12] By identifying the relationships between suppliers, vendors, and end customers this study illuminated mechanisms which support this trade. Economic weighing of the costs and benefits appears to play a role, but trust (as noted above) may also be a key factor for establishing and maintaining relationships within the supply chain. Again, social network analysis is a logical next step to better understand the movement of information and goods between actors within the supply chain and the underlying causal factors.

[12] Innovative methods and scientific advances, such as isotope markers, are now being explored as tools to distinguish between captive-bred and wild-caught animals (Andersson et al., 2021; Brandis et al., 2018; van Schingen et al., 2016)

Selection and influence models (Frank & Fahrbach, 1999) could be used to examine how actors select suppliers or customers and how they influence the legal and illegal behaviour of others in the network (e.g., demand for new species). From an enforcement and policy perspective, results presented here provide a comprehensive description of the points where laundering can occur and have implications for possible points of intervention or the regulation of domestic trade. In summary, describing the actors and context of legal and illegal TFT trade in Canada provides the necessary context for future research, highlights the need to consider the complexity of the system (Moreto & van Uhm, 2021) through multiple theoretical perspectives, and opens the door for addressing regulatory gaps.

CHAPTER 5: DETERRENCE

Chapter 5 outlines the results and discussion related to participant perceptions of formal and informal sanction threats (RQ II-1), the certainty of being caught (RQ II-2), the severity of punishment (RQ II-3), and the sanction avoidance strategies used in the supply chain (RQ II-4). The results and discussion are divided into two parts, first, a description of objective and perceived formal sanction threats, followed by a description of perceived informal sanctions. The discussion outlines the theoretical and practical implications and directions for future research.

5.1 Results

Formal Sanctions - Enforcement Files

The federal-level ECCC enforcement records provide information on objective formal sanction threats from which we can build a comparison to perceived threats. They contained 155 case files pertaining specifically to the *pet TFT trade*. The majority of the files involve the commercial pet trade (73%), followed by personal pets (17%); the remaining files did not make a distinction between personal and commercial. Files were divided into five incident types (import, inspection, intel, possession, and sale) (Figure 5.1). Enforcement officers opened files because of complaints or information received from border services (CBSA) (16%), private citizens (13%), planned inspections (8%), and other sources, including intel, animal control, SPCA, conservation officers, RCMP and U.S. Fish and Wildlife Service and the remaining 37% of files were of unknown origin. Twenty-four files resulted in alleged violations related to TFT trade (an additional file that mentioned TFTs resulted in an alleged violation, but the violation itself was related to snakes). Five files were pending outcomes, and the remainder had no violations. Eight files resulted in prosecution, one had a ticket ($230), and three files were given warnings. The enforcement measure for the remaining violations was missing. Fines reported in the

enforcement files ranged from $235, to $11,591.84 (n=4, mean $2,504) as reported in the case files. However, additional information from ECCC provided outcomes for cases that had not been entered in the database. One case resulted in a fine of $50,000, 3-year probation and a 90-day jail term for the trade in 205 animals. Another case resulted in $40,000 fine and 3-year probation. In one case, a 16-year-old travelling from Peru was found at the airport with two yellow-footed tortoises (*Chelonoidis denticulatus*) hidden in his pocket [FN_5150]. They were given 50 hours of community service at a wildlife rehabilitation centre and had to write an essay on endangered species in Peru for the judge. Other offenders have been prohibited from owning TFTs for upwards of 10 years.

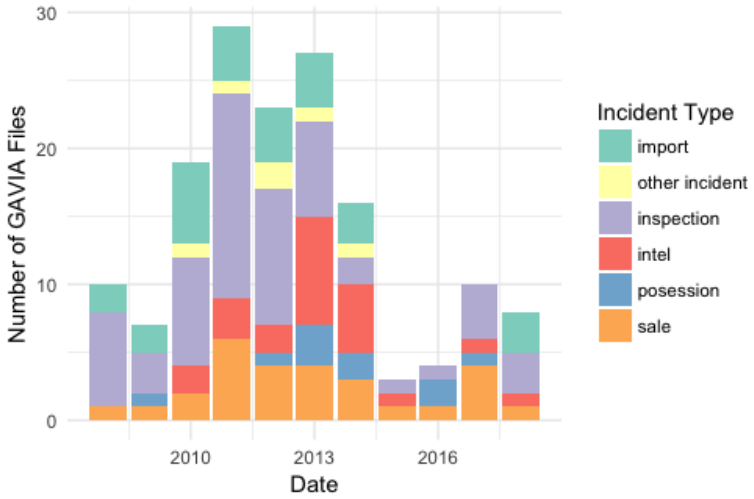

Figure 5.1: Number of pet turtle and tortoise federal enforcement files by incident type (source: ECCC data 2018)

In addition to the ECCC enforcement files mentioned above for pets, other files were specific to *native TFT species* collection and trade. Three enforcement files were opened for suspected illegal harvest and possession of native TFTs. The first file was for the removal of snapping and painted turtle eggs from a research site. In another incident, a subject was given a ticket of $235 for collecting Blanding's and painted turtle eggs that he intended to "rescue" from predation to hatch himself. The third file was related to the collection of snapping turtles for

meat. An additional 18 enforcement files were for patrols or monitoring of protected areas with turtle habitat (Figure 5.2). Of these 2 had alleged violations.

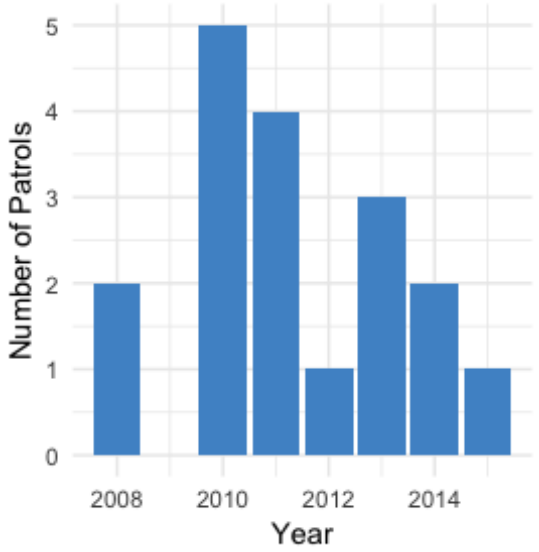

Figure 5.2: Enforcement files that mentioned turtles and involved patrols and inspections of National Wildlife Areas (2008-2018) (source: ECCC data 2018)

Formal Sanctions - Interviews

All participants were aware of Canada's commercial import ban and the restrictions on harvesting native species. Some were even able to accurately give approximate dates when these laws were implemented. Half of the participants showed knowledge of CITES and had at least some understanding of the international trade agreement for wild flora and fauna (n=13). For example, one accurately described how, for some species, "you need CITES if you're moving them from across the border" [5524]. Some of these vendors knew how to determine the CITES-listing of a species and have acquired CITES permits to ship other animals in the past.

The level of awareness of illegal activity in the supply chain varied, although most were aware that it has occurred at some point in time. A couple of people were unaware of illegal activity and sanctions and said, "I've never heard of anyone actually having animals confiscated from them." [4130] or described how they "wouldn't associate with people that would be

smuggling. I'm sure people are getting caught once in a while, but I've no time for people like that" [2220]. For this vendor, they felt illegal trade was wrong, "It's the law. It's not cool" [2220]. Others acknowledged that illegal trade is something that happened in the past but no longer happens. However, most of the vendors were able to discuss incidents where they had heard of people being caught smuggling, illegally collecting or trading TFTs (as discussed in Chapter 4). Some vendors knew someone who had illegally traded TFTs personally or had interacted with them through some form of professional or social interaction (e.g., had purchased an animal from that individual or seen them at an expo). For others, their awareness of people being caught illegally trading came from media. One vendor discussed the changes in enforcement over the last 40 years and the increased news coverage.

> "Turtle and tortoise law regulation between them crossing international borders has been in place since the 70s. Right, but no one cared in the 70s, no one cared in the 80s and no one cared in the 90s. People didn't really start caring until like the last 10-15 years. And then you started seeing news articles. This person was caught [at] the border blah blah." [3381]

Another shared that "I've read a few articles about a few people who've been busted" [2298]. Some cited specific incidents found in a local newspaper and online forums.

> "There was a number, a number of years ago, five or six years ago there [was] an article that was in the local newspapers. And that was also in various reptile forums, about a gentleman that had been caught with a bunch of Blanding's turtles that he was taking across the border…" [7137]

In the quote above, the respondent was referring to an actual case. Similarly, another participant discussed how they purchased from someone that they later found out had been caught at the border (a record of this incident can also be found in the enforcement files [EN_7114])

> "… the first time I saw the ad on Kijiji, he was selling all kinds of different turtles, turns out he was a turtle smuggler… I ended up buying turtles from him on three different occasions. And I honestly thought he was just a breeder. And I really do like, I was just kind of getting into the whole reptile and turtle hobby. I had no idea. And then once I got meeting a couple people, and they started, we started talking about this guy, because then

> I guess everybody was buying the turtles from him… and a couple guys, kind of let me know just that I should be a little careful with what I was dealing with. He actually ended up in jail in Michigan for five years… if you Google a man caught at Canada or Canadian border with 51 turtles in his pants." [1079]

Perceived formal sanctions were not limited to fines and incarceration. Participants also noted other consequences, such as having your animal confiscated or not being able to cross the border.

> "I don't know about like the big smugglers who are like hundreds and hundreds of turtles, but I think like people just coming off with one or two as they cross and stuff then they just play the "Oh sorry, I didn't know I wasn't allowed to take that" and they usually just get confiscated but no punishment or anything." [2298]

Regarding the border, another respondent stated "…I don't know if he spent jail time, there was a fine and he was banned from crossing the border for a number of years…" [1042]. Similarly another person described how violating federal law and CITES could lead to vehicles being impounded and a loss of the ability to travel internationally, so they set their prices high in line with the risk "…and all of a sudden you're not recognize[d as] an air traveler, you're not allowed over the border, you've lost your vehicle on site, as so it's a great risk. So therefore, they ask for quite a bit more, and people still spend it." [9547].

Perceptions of formal sanction certainty and severity showed heterogeneity across participants. Some vendors did not describe the likelihood of being caught or did not have specific knowledge of the trade (as noted above) and couldn't see why you would take the risk.

> "But why would you smuggle something taking a chance of being caught and having a record and I didn't know anybody that would be willing to do that. I think it's not impossible to find animals in Canada that's been here forever. They're being bred I mean, people are, all of the people I know that breed are conscious of that. We have to do a good job and take care of animals, and when you do a good job with animals well, they're apt to breed for you if you put a male and female together." [2220]

Others were more cautious, "If you can buy something for 500 bucks in the States and then sell it for $1,500-$2,000 in Canada, makes sense to try to sneak [it in], but Jesus Christ, I sure wouldn't

want to get caught doing something like that" [7065]. Some saw the likelihood of being caught as high and described fines and other sanctions as being severe.

> "They're being caught now. I see it on the news every so often. And the fines are very large. It's almost zero tolerance. Now it's jail time now. And it's treated, it's a federal offence, it's not provincial or municipal, [it] is a federal offense to bring them into the country. And yeah, so it's just people getting caught. So it's not worth it to them or like people that used to do it 20/30 years ago on a regular basis, that are older now and they just don't do it anymore." [5206]

Another vendor similarly described federals laws as "more scary" than local regional level bylaws, stating that "these aren't like, minor fines, these are a quarter of a million dollar fine that you can get hit with per animal" and went on to discuss how "there's prison time, massive fines, stuff like that, so people definitely take that seriously" [3381]. Those who saw sanctions as likely and severe tended to refer to their knowledge of these incidents as coming from the media or some other secondary source. For example, [5206] above saw fines as high and also thought, based on what they saw in the news, that people attempting to smuggle are often detected. "You can find on the news where like people have tried to come over the border with turtles… it's more common than you think… a lot of those guys get caught" [5206].

However, many of participants saw the likelihood of being caught as low. Some described how there is a lack of effective enforcement or how "the laws are not very strictly enforced" [7607]. Another stated,

> "There's not enough law enforcement agents or conservation agents to, and check everybody who has one. There's no regulations on owning the pet. So no one is registering. So, no one would even know that you had one unless you made it public." [2596]

The likelihood of being caught was deemed extremely low by some other participants, and even if they were caught, the fines were seen as the cost of doing business and not as a deterrent. These vendors tended to have knowledge of specific people or had some form of direct or

indirect interaction with illegal traders. Here one vendor discussed an individual they know by name who was caught and sanctioned but returned to illegal trade.

> "If you look up [name of person], from 10 years ago. I think he was banned from entering the States for 10 years, and he had a $50,000 fine. You'd have to look it up to know for sure, but that didn't deter him from smuggling turtles. So like what? What would the penalty have to be? Would capital punishment? If we go back to beheadings or <pause> it's not going to slow… You know they're only doing one out of one thousand [referring to people getting checked at the border], I think my chances are pretty good… Currently, when you're smuggling, there's a monetary penalty, there's always a threat of five years in prison or whatever, but that obviously doesn't deter people because a lot of people do that. So you know what would the penalty have to be to stop it? I don't know. So, if you think the worst thing is beheading, I don't even know if that would help you." [1042]

Although this vendor describes an extreme form of punishment and the fact that it is unlikely to be effective, others also emphasized how high-profit margins incentivize trade despite the risks. "If you can make a 10 to 10 times a profit off one turtle, if you can smuggle in… go down and buy a bunch from a turtle breeder, there is a lot of financial incentives" [1079]. And they recognize that there are others who would simply take their place if they stopped trading.

> "I'm sure that some people that are doing it, realize that they're breaking the law and what happens if they caught is jail time and a fine, but I think some of them really don't care… If one person gets a ticket, or maybe gets a year in jail or whatever it may be there's still 25 people out there that are doing it." [8584]

The existence of repeat offenders also emerged as a theme. Multiple respondents described the same people, in particular, one referred to as *[name] the smuggler*, who had been caught trading TFTs but they suspected continues to trade illegally.

> "Like there's one vendor who was incarcerated for poaching from a population of wood turtles in Ontario. Yeah, wood turtles in Ontario are quite imperilled. This person was busted and went to jail. But after coming out of jail, this is [name] the smuggler; he's back at it." [7607]

They described how prolific traders continue to trade illegally even after they are caught and that they are perceived to stop when they retire (and are old) or die. "...once he passes [dies], that will stop" [9197] another said "I think that specific guy… now he's like retired or something" [3381].

Informal Sanctions

Perceptions about informal sanctions largely focused on responses from others in the reptile trade community. There was little discussion of social consequences stemming from one's network of family or friends that exist outside of the reptile and pet trade community. Most described their friends and family as either connected to herpetoculture (e.g., their spouse also breeds turtles) or completely separate and uninterested in the hobby. Discussion of informal sanctions largely focused on the response by others in the reptile or exotic pet community.

The reptile/herpetoculture community in Canada is considered quite small, where people in the industry often recognize or know each other, even across the country. One vendor described how, in their province, "… everyone know[s] everyone" [5524]. Some described deep friendships with others in the industry, "we've known each other for years and years" [5301]. Another vendor described receiving immense support from other pet retailers, "the community is incredible" [1323]. For some, their herpetoculture relationships extend beyond the retail setting to involvement in naturalist reptile groups. However, others noted that those in the reptile community can be somewhat withdrawn, keeping to themselves and minding their own business, "hobbyists are kind of reclusive, and they want to stay off the radar, so to speak…" [7606] referring to their fear that new laws could threaten their ability to keep certain reptiles. Another said, "…so the only people that I really associate with is my wholesalers… I don't stick my nose in. I don't badmouth anybody, but I just mind my own business." [9789]. One vendor lamented this saying "I guess it is competitiveness a lot of the time, and it's sad. Because really, we're all in that certain amount of the love of these animals, and if you want them to do well, having other people's perspectives and experience is only a good thing, in my opinion" [8322]. Another

described the industry as secretive "If you figure out how to breed something, you'll not tell anyone, because then everyone's gonna be doing it" [8584].

Behaviour considered by some to be unsavoury, such as poor animal husbandry or trading illegally sourced animals, led to a number of different informal sanctions from the reptile and pet community. Some described avoiding unscrupulous actors, "There is a number of people that are not good to deal with in the industry. A lot of people know who they are. And so they're careful of them" [7137]. These actors risk losing their reputation and customers, as one said, "And that one particular supplier I don't deal with at all…" [3381]. Another described in detail how the community will shun those involved in illegal activity.

> "Once your name is out there, and it's been tainted, you're officially ruined and so with that particular person, he's no longer welcome in the reptile community on the island. He's not welcome anymore. He doesn't get invited to shows. His sales for his animals have dropped immensely. He's not making as much money because it has been brought to him, it's been brought up to people who may not know any better. They read about these stories in the news. And then, they ask their friends, and their friends fill them in. And then people start sharing their experiences with that vendor and go from there." [8242]

Illegal activity is seen as a threat to their reputation and the reputation of the industry overall. Here a vendor spoke about how smuggled animals can arrive sick and that selling them can impact your reputation. "I mean everyone lives and dies under reputation. So, the last thing you want [is someone] to post something on your Facebook page or Instagram, of 'I bought this animal, and it died two weeks later, so don't buy from them'" [7137]. A reputation for dealing in illegally source animals can stick with the person, for example (as noted above) one individual was labelled *the smuggler* by multiple respondents. "He's back, yeah, importing. I don't know if he's still poaching or smuggling, but that reputation is gonna to stick with him" [7607]. Another said, "but the majority of reptile, the majority of wholesalers don't deal with [first name] the

smuggler because his name is literally [first name] the smuggler" [1042]. Similarly, others go on to say how people in the industry avoid people with bad reputations.

> "There's people we know to stay away from because we've been talking to other breeders and stuff and groups of turtles that we wanted [to] have went for sale by someone and people told us specifically do not buy from this person. You're getting yourself like into trouble if you buy from them, so we have stayed away from it." [8584]

Vendors also described some of the restrictions on people selling animals at trade shows.

> "I don't know if he's no longer allowed to sell at these events because there was an announcement made at the beginning of Sunday's event over the PA system saying that there's going to be an inspector going around and anything that's obviously not captive-bred is going to be removed from tables. That's why he's no longer at these shows or if he's just no longer … he retired or died… I don't know." [7607]

The vendor went on to say that despite the ban on wild-caught animals, "I do still see that there are wild-caught animals on (*sic*) the shows… but it's hard to prove" [7607].

Bad actors are occasionally also called out by others in the industry. In one circumstance (mentioned in Chapter 4), a naturalist group that photographed wild turtles noticed some were missing and discovered someone they knew had been taking them. Through peer pressure "we put a stop to it." [2220]. Online forums are also used to call out the bad behaviour of others in the industry. An online *Board of Inquiry* group is used to identify bad actors, such as those that "…do sketchy things or rip people off… you can kind of put them on blast" [6722].

> "There are some Facebook groups like board of inquiry groups that deal with, like, somebody will say 'Hey have you heard of this person?' Or, and then people will comment and 'what's your experience good or bad or whatever'… there's always some good people on the, that have probably had a very difficult customer as well, like it's not always that reliable…" [8322]

The moderator of a Facebook group said they will delete ads that are suspicious, "there's a lot of scammy people from the U.S. trying to sell tortoises on there, so I just delete them… they'll box them up and send them in UPS and stuff… I just get rid of them" [8322]. Others also flag ads on Facebook, and in some circumstances, people will report individuals to the authorities.

Some described how "The industry itself is making the questionable stakeholders and hobbyists accountable for their actions… by choosing not to do business with [them]" [9547].

As noted above, under some circumstances, people in the community will report people trading TFTs that were illegally sourced or respond to behaviour that is considered undesirable; however, a number of respondents discussed how people will also turn a blind eye to illegally sourced TFTs. "Even if you see something you don't like at the reptile show you don't complain to the person you just, you walk on by" [8584]. Another referred to the reporting of smugglers.

> "I think a lot of times it might go unreported. Especially with like, for example, if the organizer of an expo is gaining monetarily by renting a table or a booth to someone who might be doing things that are not very scrupulous and they might turn a blind eye because they need to fill that symposium or that expo." [7607]

In addition, almost 30% of participants described incidents where they purchased animals from someone whom they suspected had imported them illegally (see also Neutralization in Chapter 6).

5.2 Discussion

Formal Sanctions

Despite widespread knowledge of what constitutes illegal trade, there was a great deal of heterogeneity in perceptions of the extent to which illegal trade is happening and the associated sanction risks. Perceptions of the certainty and severity of formal sanctions spanned the spectrum. Some participants indicated that they did not wish to be associated with anyone doing anything illegal and clearly expressed that they would not break the law. These vendors could not see why someone would trade illegally and responded that it was simply illegal. These vendors may be acute conformists who will comply regardless of the costs or benefits of the crime (see Pogarsky, 2002).

Other participants saw the certainty and severity as high, and on numerous occasions, participants cited specific cases that had been prosecuted. However, they often provided inaccurate descriptions of sanction severity, and some estimated the severity of punishment as much higher than real sanctions. These respondents also felt that it was likely that people would get caught, a finding to which I will return below.

In contrast, vendors on the other end of the spectrum perceived the likelihood of being caught as low and therefore saw the severity of punishment as irrelevant. One vendor commented that even capital punishment wouldn't work. These perceptions are consistent with low perceived and objective detection rates in other areas of IWT (Wellsmith, 2011; Sherman et al., 2022). Even for those who were caught, vendors saw sanction severity as low or insufficient to deter offenders, in some cases citing sanctions as the "cost of doing business." This is consistent with other types of IWT, where some actors consider the economic costs and benefits of crime as part of their wildlife trade business strategy (Stassen & Ceccato, 2020).

Although there was a gradient of people between those that saw certainty and severity as low and high, there appeared to be trends in how each group talked about their knowledge and experience with illegal trade. Those that described receiving their information primarily from the media or secondary sources tended to see the risk as high. In contrast, those that described indirect or direct experience with illegal traders tended to share specific knowledge of individuals who had participated in the illegal supply chain (e.g., they had purchased from someone they suspected to have imported TFTs illegally) and described the risk as low. Thus, experiences with crime and punishment may be informing risk perceptions (Apel, 2021). Risk perceptions could vary based on one's position in the supply chain, proximity to those violating wildlife laws, and the source of their information. Those with direct experience with crime and

punishment may have a more accurate understanding of the true sanction risk relative to those who are naïve (Apel, 2021). Having peers successfully involved in illegal trade may also decrease perceptions of certainty, as found in research on youth theft and violence (Matsueda, Kreager & Huizinga, 2006). As well, those who use media reports for information may know less about punishment than those with personal or vicarious experience (Pickett et al., 2015). Based on emerging trends found in this data, a logical next step could examine how personal and vicarious experience with punishment and sanction avoidance ultimately shape sanction risk perceptions (Piquero & Pogarsky, 2002; Stafford & Warr, 1993) at different stages of the supply chain.

Repeat offenders emerged as another theme in the discussions with vendors. On multiple occasions, participants described how some traffickers continue in the trade despite being caught and sanctioned in the past. Multiple respondents referred to one widely known individual as [name] *the smuggler*. Prolific repeat offenders are described in books about the global reptile trade (Christy, 2008; Smith, 2011), and cases of repeat offenders in TFT trade are known by some wildlife law enforcement officers (pers. comm ECCC WED & USFWS officers, 2022). Still, discussion about repeat offenders in the IWT literature is scarce. Some posit that there is a lack of deterrence because IWT sanctions are too low and point to the perceived utility of harsher punishments using a case study example (although they did not show causal links) (Shepherd et al., 2017). But deterrence research consistently concludes that punishment severity has weak to no deterrent effect (Chalfin & McCrary, 2017; Doob & Webster, 2003; Dölling et al., 2009; Pratt et al, 2006), suggesting that this strategy is unlikely to be effective for conservation crimes (Wilson & Boratto, 2020). Experiences of success and occasional failure could be integrated into perceptual risk evaluations and decision-making processes (Bayesian updating) (see Apel 2021).

As noted above, receiving a sanction could simply be calculated as the cost of doing business. Ultimately what makes these offenders continue in crime is likely to be complex, rooted in criminal and social capitals that provide opportunities for sanction avoidance (Moeller et al., 2016). Given this complexity, more research is needed to unpack the interaction between positions in the supply chain, vicarious and direct experience with sanctions and issues of recidivism. Research from the life course perspective (Sampson & Laub, 1992) could also greatly improve our understanding of persistence and desistance in IWT.

From a policy perspective, this means that crime prevention and demand reduction strategies must recognize that different approaches and messaging may be required to effectively address the unique positions and perspectives of sanctions in the trade. Research and work on IWT largely fall to conservation organizations that, as noted above, commonly call for harsher punishments for wildlife offenders without any basis in empirical evidence (Wilson & Boratto, 2020). However, recognizing there is heterogeneity in risk perceptions, it is likely that these deterrents will be perceived in unique ways, and harsher punishments may not produce the intended outcomes. Effective risk communication and deterrence strategies will need to consider this heterogeneity when developing crime prevention strategies.

Informal Sanctions

Informal sanctions were salient for many participants, particularly from an economic standpoint. Some described concerns about loss of reputation, threats to the legitimacy of the industry, and the potential for social and professional exclusion caused by involvement in illegal trade. These informal sanctions were seen as a deterrent, and many felt that they would directly impact one's ability to participate in the reptile industry and TFT sales. Informal sanctions

therefore held both social and economic consequences that could ostracize someone from their community and disrupt income revenue.

Though many vendors discussed various forms of informal sanctions and the impact of such sanctions, speaking directly to sanction certainty was riddled with exceptions to the rule. On the one hand, vendors described how bad actors can be ostracized and how people in the industry warn others to stay away from certain sellers. Some spoke about how they would avoid purchasing from certain vendors, while others assumed more of a guardianship role (Cohen & Felson, 1979) and said they would actively prevent the sale of illegally sourced animals or report illegal activity. On the other hand, many described people turning a blind eye to illegal trade and the tendency to mind their own business. This raises theoretical questions about why people are willing to turn a blind eye. Perhaps a tight-knit community is intentionally protecting itself or perhaps there is an unwillingness to intervene due to other factors, such as not seeing it as their job or wanting to avoid altercations, as was found in rural IWT prevention in Vietnam (Viollaz et al., 2022). Discussion on the role of informal guardianship in the IWT literature largely focuses on poaching prevention in rural communities (e.g., Viollaz et al., 2022; Kahler & Rinkus, 2021) but conceptualizing the certainty of informal sanctions and the role of informal guardianship in the pet trade opens new avenues for understanding the pet trade community's willingness and ability to prevent and intervene in illegal trade.

Results demonstrate that responses to a seemingly simple question about the likelihood of being caught or sanctioned by peers and how much it affects someone is full of nuance. It depends on which type of informal sanction is being considered and their perception of the certainty of being sanctioned. These have important implications for how we approach future research. Research questions designed to examine informal sanctions must be carefully crafted to

account for the diversity of risk perceptions associated with informal sanctions, the role of informal guardianship and the willingness to intervene (Viollaz et al., 2022).

From a policy and practical perspective, the results of this study provide an essential baseline for research on potential demand reduction strategies (which are touted as one of the most important (and yet understudied) areas of IWT prevention (Veríssimo & Wan, 2019)). Efforts to reduce vendor willingness to purchase and resell illegally sourced pets and, in turn educate customers, may provide an important path to demand reduction. While it is difficult to ascertain to what extent vendors would be responsive to formal and informal sanction threats, the TFT trade is, to some extent, self-policed, both in-person and online markets (see also Stallins & Kelley, 2013). Expanding and harnessing informal sanction threats and guardianship could meaningfully shift demand away from illegally sourced animals.

CHAPTER 6: NEUTRALIZATION

Chapter 6 presents results on morality (RQ III-1), pro-environmental beliefs and perspectives on wildlife conservation and animal welfare (RQ III-2), as well as techniques to neutralize the acquisition of illegally sourced TFTs and accompanying compensatory green beliefs (CGBs) (RQ III-3), and how these techniques are used to compensate for non-compliant behaviour (RQ III-4). The discussion outlines how the results fit into the broader criminological literature on neutralization and the conservation literature on CGBs, and the implications for theory development and future research.

6.1 Results

Morality

Vendors generally saw themselves as law-abiding, and some were slightly taken aback by questions about illegality in the trade. As noted in Chapter 5, a few vendors described explicitly how they would not participate in the illegal trade. Participants considered themselves law-abiding and stated that they would not buy or sell illegally sourced TFTs or unlawfully smuggle them into the country. Referring to smuggling, one vendor described how they would avoid someone involved in illegal activity.

> "That's highly illegal right? So yeah, I wouldn't even consider it. As soon as I knew that guy had smuggled them in, I wasn't even looking at purchasing an animal from him. Wash your hands, like don't even interact with people that do that." [7065]

Another vendor described how people who purchase illegally sourced turtles are just as culpable as those who smuggle them. "99% of them [red-eared sliders] are not captive produced in Canada," meaning that "they are illegal and being in possession of an illegally obtained live specimen, you're just as guilty as the person who put them in their pants running on the border with them" [9547].

Pro-environmental Beliefs and Wildlife Conservation

Each interview began with a question about where the participant's interest in TFTs began. Participants described early childhood experiences (n=17) or experiences later in life (n=9). Tracing back to their childhood, two respondents described dinosaurs as the root of their interest in reptiles, "I think what got me into it right from the start is loving dinosaurs. We realized that a monitor lizard is basically a new school dinosaur" [6722]. Two others discussed how allergies prevented them from having furry pets such as cats and dogs, so they turned to reptiles, "I had allergies to fur and feathers and my parents knew that I really was [into] animals and nature" [4130]. Early experiences with nature also shaped interests and love of animals. "So I've always had an interest in animals, we live in a rural area…" [1042]. Some would catch small amphibians or reptiles as a child or spend time outdoors with loved ones. Many participants spoke at length about their positive experiences. All but one participant expressed a strong connection to animals, whether related to pets or experiences with nature.[13]

Beyond a love of animals, all but two participants discussed how conservation is important and shared knowledge of the impacts of illegal trade on wild populations (n=24). Some vendors also had formal training in conservation from university or through work directly with conservation organizations (n=4). One vendor described their involvement with conservation groups. "I'm so dedicated to reptiles. A lot of my, most of my relationships outside of work are built on meeting people through either conservation projects, conservation work, herpetoculture… my social circles are pretty much all reptile people…" [7607]. Some

[13] The participant that did not express a love of animals appeared to see animals a bit more as a commodity to be used as part of their business, but still expressed concern for their welfare overall.

participants also actively work in education, providing programming for children or outreach to the community about reptile husbandry or conservation (n=7). For some, conservation perspectives shaped their disapproval of wildlife trafficking. “Yeah, it’s smuggling—wildlife trafficking. I have a background in conservation biology, sciences. So that’s so so important to me and I don’t like seeing that side of things.” [2298].

Although vendors generally felt that conservation was important, the aspects of conservation they discussed varied. One of the most prominent conservation issues that emerged during interviews was invasive species (n=20), particularly of red-eared sliders (*Trachemys scripta*).[14] Most participants were acutely aware of the negative impacts invasive species can have on the environment. Some lamented that red-eared sliders had taken over local ponds and were detrimental to native wildlife, so there is a move towards not selling them anymore. “And so the red-eared sliders. There's a lot of people that don't want any pet shops to sell them anymore. Because they're coming up [from the U.S.]. They're becoming an invasive species in Quebec and in the rest of Canada, and they compete with our native turtles.” [5524].

Some vendors also described a desire to rescue TFTs. For example, one vendor described how they tell people who say they have a Blanding’s turtle (a threatened native species in Ontario, COSSARO, 2017) to “bring it in right away” and then they “take [it] out to the botanical garden… they have a natural habitat built already for them there … and I know they will be taken care of.” [7137]. Other vendors will take in rescues and try to rehome them, particularly red-eared sliders.

Another theme that emerged regarded concerns about habitat destruction. Some remarked that it is a much bigger threat to TFTs than trade.

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[14] See Appendix A for description of environmental harms associated invasive species.

> "I'm more concerned with habitat loss now than smuggling. I think that's the big issue. And also not just smuggling, but smuggling is on the lower end. And I mean, they always push that as a big excuse why turtles are going. It's habitat destruction, actually and people eating this stuff." [2220]

Concern for conservation was often linked to captive breeding with discussions of how some species would die in the wild, so it is better if we collect them so that they can at least be bred. They saw captive breeding as a tool to possibly save species from extinction and re-populate the wild.

Animal Welfare

Most people selling turtles in this study put a lot of care into their animals. Breeders wanted to wait until the animals were the appropriate age to sell. Some breeders were highly selective in whom they sold to (mentioned in Chapter 4), allowing only responsible pet owners to purchase one of their animals. Here a breeder describes the care they put into ensuring the welfare of the animals they sell.

> "People, sometimes it's happened that they sent me a picture of their setup that I'm like, 'Oh, don't do that'. And [they say] 'oh, my God, you, you really love your babies' and temperatures not good. That's not the right substrate .... dada da. I love them, I want them to be good, you know, I want them to have a good life. And so they actually I, you know, they get out of the egg and they... you know, I raise them and make them grow them before they leave, they leave after two months, usually a month and a half to two months. So I grow them a bit before. So, they they're stronger. So you know, you don't want to send a baby that is just hatched, because very often they're more... they're not as strong and they tend to fall on their back more easily. They're more clumsy. And then, you know, yeah, when it gets bigger, then they start to be more agile a bit. If, you can say that for a tortoise. But they can get back on their feet more easily than a baby. And also, if they started to grow a bit and they're stronger, you see the difference. They have growth lines, and they eat better and are more likely to thrive." [5301]

Retailers also described concerns about customers having the capacity to care for their pets, often citing that they are not suitable for young children and lamenting the poor care they frequently received in the past.

> "So of course, red-eared sliders being one that you could buy back in the 70s and 80s and even into the 90s. They were in every store, not just pet stores like they were in toy

> stores, general stores, gas stations. I've had people tell me, and they would be like a dime a dozen. These tiny little guys, they'd throw them in a bucket. And they would either survive and eventually die, of course… I've had people come in and asked me if we have those turtles that '[I] used to get when I was a kid, and they don't get very big, and they don't live very long.' Like yeah, okay, you mean the one you killed?" [8755]

Throwing a turtle in a bucket may have been considered sufficient in the past, but the bulk of store owners in this study want to see the animals survive and thrive.

> "They're not designed to just live in a cage. They're not designed to live in a box. They've adapted for millions of years to live in a very specific environment. So it's our job to emulate that environment. That realization has allowed us to expand on what sort of species we can keep and how successfully we can keep them." [8755]

As a result, many of the stores, similar to breeders, described an unwillingness to sell to uneducated customers or customers they deemed incapable of caring for the animal properly. Although they lamented that big chain retailers were not as scrupulous and sold to anyone to the detriment of pets and the industry.

Participants were also concerned about poor animal welfare conditions. They described how traffickers would tape the legs of turtles inside their bodies or leave them for long periods without food or water during shipment. "Smuggling of turtles is pretty nasty… they tape them all up so they can't get out of their shell and it's not very nice." [4130]. In one interview, the participant described how they purchased from a smuggler, but the animals did not survive.

> "We bought a pair [of TFTs] and the fellow we bought from was really sketchy, I guess we didn't know but he ended up getting arrested… he was called the turtle man… he was caught at the border with dozens of turtles duct taped to his legs. And this is coming through, and some of them died. And the ones we got from him didn't survive… We fought hard to keep them, but they died. It was so sad." [8322]

Neutralizations

Despite participants describing support for conservation and animals welfare, more than half (n=16) described ways that someone might neutralize the purchase of a TFT that was likely sourced illegally. Many had also purchased animals they believed to have been illegally sourced

(n=7?).[15] This is despite broad recognition that smuggled animals often experience horrendous conditions while being smuggled and that there are negative impacts on the environment. The techniques described varied from person to person but largely fell into nine categories that fit within Kaptein & van Helvoort's (2019) model of neutralization techniques (Table 6.1). Of the participants using neutralization techniques, many described more than one throughout their discussion (range 1-7 techniques, average 2.8).

*Table 6.1: Neutralization Techniques (based on model by *Kaptein & van Helvoort, 2019)*

Category	Code	Description	Examples	Technique*
Denying Deviant Behaviour				
Distorting the Facts	Not illegal	What I am doing is not considered illegal, so it is ok. Someone else was doing the illegal part, so not my fault, they were already in the country.	"like if you do buy a smuggled turtle there's nothing that can really be done about it at that point"[8584]	Externalizing blame Also fits with Blaming limited role
	Low Harm	The harm to people or the environment is low. The harm does not affect me directly.	" the people that are actually doing it, what are they? Are they worth it? … did they affect the society? Do they affect anybody else?" [9197] "I don't know whether he imported them legally or not you know, that they were definitely all little. Captive-bred though." [9789]	Denial of Consequences
Negating the Norm: Reducing norms to facts	Illegitimate Law	The laws are not legitimate.	"I don't' believe the laws are right there. And I don't agree with them" [8322]	Reduction to an invalid norm.
Negating the Norm: Appealing to another norm	Rescue Animal	The animals are suffering, so I need to save them.	"I've actually bought animals in thinking that I'm rescuing them from a bad situation." [7607]	Appealing to another norm: good intentions, higher goals.

[15] This number reflects participants that at some point in time have acquired an animal that was likely imported illegally, but it does not mean that they are continuing to acquire these animals. Many stated that they no longer purchase animals that they think could have been illegally sourced.

Table 6.1 (cont'd)

Category	Code	Description	Examples	Technique*
Denying Deviant Behaviour				
Negating the Norm: Appealing to another norm	Contribute to Conservation	People having these as pets makes them care about the ones in the wild more. Captive breeding stops trade in wild-caught animals.	"it's [having more in captivity to breed] also going to stop them from taking them from the wild in their native country and it'll make so our population of captive turtles is larger" [8584]	Appeal to higher goals
Negating the Norm: Relativizing the norm	Other Harms are Worse	Other conservation threats (e.g., habitat loss) are more harmful than the removal of wild animals for pet trade less.	"Populations are completely getting destroyed, but due to lumber, pretty much nothing else." [3381]	Relativizing the norm
Denying Responsibility				
Blaming Circumstances	No Other Option	These species are other unavailable or hard to access, so not other options for getting them. Need to improve bloodlines.	"they always had the stuff no one else has ever heard of…" [8755]. "They can't get them legally" [9547]	Blaming limited option
	Competition	My competition is selling them, need to maintain a competitive edge, no other option.	"… I want to be able to compete and the client is demanding it." [9197]	Blaming limited choice
Hiding behind oneself	Didn't Know	I didn't know that they were illegally sourced. I didn't ask, so I can deny I know they were illegally sourced. Turn a blind eye to the smuggling. Or pretending not to know. Turning a blind eye.	"…if they don't ask questions, they don't know. They never ask a question. As long as the person on their paper says its captive-bred or whatever, they just don't say anything." [9197]	Hiding behind imperfect knowledge

Not Illegal

The application of WAPPRIITA generally means that only the act of illegally importing an animal is sanctioned. Once the animal is in the country it becomes difficult to prove that it was brought in illegally (as discussed in Chapter 4). Although there are examples where

enforcement officers followed-up on cases where the animal was obviously imported illegally (e.g., fly river turtles, *Carettochelys insulpta* which do not breed well in captivity), there is a general belief among participants that purchasing an illegally sourced animal is ok if they were not the person who smuggled it across the border. Here the person describes the origin of their turtles as likely smuggled into Canada, but notes that selling their offspring is ok because that isn't technically illegal.

> "So I've got 3 striped mud turtles and red cheek mud turtles… If you were to look at them, probably originally, they were, you know, smuggled into Canada, and bred. But you know the way the law works because they're not CITES listed is, ummm. The original smuggled animals are always considered smuggled, but if their offspring are produced in Canada now, they are Canadian born. Those are, you've legalized smuggled [animals]. The offspring are now legal, the originals are still smuggled. So, if you're working with, you know first generation, you know. Second generation I've now produced you know, my own second generation. You know they're now considered. You know, legal…" [1042]

When describing the purchase of illegal sourced animals, the blame is placed on the smuggler rather than the buyer themselves. In this case the vendor goes on to describe the need for due diligence but emphasizes that they can't be held responsible for the other person's lies. They note that they've done the best they can to not support trade in wild-caught species (which also falls under *appeal to good intentions* – see below).

> "So if you're purchasing turtles I think you have to do your due diligence if somebody <pause> like for me, I always get an invoice because I'm a business, and I have to have on that invoice that they are captive breeding in Canada. Yeah, you know, I specifically asked that question. You know I need an invoice that [is] signed. That states that, and then I'm covered for myself. I can't force somebody to tell me the truth… That I've done the best that I can do, and I've tried to make sure that I'm not supporting the wild. You know, smuggling, trade." [1042]

Some plainly avoid due diligence and do not ask questions about the origin of the animal.

> "There's no proof, like you just buy things off Kijiji from [someone] out of [location name]. You don't keep a record of that. You just meet them at the local Walmart. Take your animal and go about your business." [7065]

Another vendor explained that although they don't want to support illegal trade, they also don't question where the animal came from "… you wouldn't want to support that [illegal trade]. But I don't think <pause> I don't really quiz people" [6722].

Low harm

For some, the harm is not immediately obvious or directly connected to their purchase. They are distant enough from the harm that even when they recognize that it occurs, they still feel removed.

> "…it's when you hear about, you know, the guy [at the] border here with 70, you know, baby tortoises sewn inside his pants and his coat. You know, it's when you hear those type of circumstances, but they're so far removed. I think from what's happening on regular basis, you know, you hear things happening overseas, and you see picture, but then it's a one shot, and then it's gone." [7137]

Although there is a recognition that taking TFTs from the wild is bad, one individual described how smuggled animals might actually come from "a really good captive breeding program somewhere in the U.S." [8322]. They don't see the illegal import of this animal as harmful since the animal is captive-bred and likely came from a good responsible breeder.

Despite most participants being concerned about wildlife conservation, there were a couple respondents that seemed less concerned about animals disappearing from the wild (n=2). For one, he saw law enforcement's role as protecting people, not necessarily the environment.

> "I think, I think they [sanctions for TFT illegal trade] aren't severe enough. But I think that at the end of the day, even if it they would be severe. What would it give the society? Like, I mean, you're just, you're stopping those turtles being here, which is the goal. Yeah. Like you're stopping, like illegal trade. But at the end of the day, like, I don't know, like, I don't I don't see it protecting people." [9197]

Illegitimate Law

The legitimacy of the law repeatedly arose during interviews. Some saw it as legitimate; others thought it was ridiculous that TFTs were banned from import due to salmonella risk, a risk that they deem to be very low. Interestingly one participant described how they needed people to

illegally import TFTs so that they would have access to rare species, but at the same time, saw the law as good and legitimate as it kept prices high for the offspring they produced.

Rescue Animals

The desire to save animals or rescue them for some respondents rationalized the purchase of animals that likely came from illegitimate sources, even though they recognized that they did not want to feed into the demand. The following respondent noted that if they were offered a sick animal, they would want to save it despite that fact that another animal might just take its place in the trade (note this respondent also described purchasing turtles that they thought likely to have been illegally sourced).

> "… I've actually bought animals in thinking that I'm rescuing them from a bad situation… where I bought an animal that was like, oh I need to get that thing. Unhealthy… I would rather save an animal than boycott an unscrupulous business dealer. Yeah, then to let an animal perish if I thought that animal's gonna be dead if I don't get it home and take care of it. … Which sucks, because then that's just feeding the demand for that to happen again… If I'm buying an animal out of bad conditions and this is going to get those conditions are going to be replenished, where that person is going to now go get another animal. I'm probably not going to see that. So for me, it's kind of like, I'm looking at animals that's like, on death's door, and I feel like I have the skill set and the experience to save it., Then I might tend towards that." [7607]

Contribute to Conservation

A contribution to conservation, whether a personal contribution or by keeping species that could be used for future conservation efforts, was another neutralization technique. For example, one vendor describes the conservation role of captive breeding animals that had been smuggled.

> "The main thing is if we do buy that we know has been [smuggled]… it's kind of stopped the train from happening. Kind of thing. And [we can] try to breed it. Because if you can breed it here, then it's going to stop the need to like, continue with that. Yeah, it's also going to stop them from taking them from the wild in their native country." [8584]

Although not always used as neutralization techniques specifically, many cited the different ways that pet keeping can contribute to conservation by creating assurance colonies and ensuring that people have a connection to animals and therefore want to protect them in the future.[16]

Other Harms are Worse

Much like the previous technique, this one relativizes the norm, minimizing the harm in comparison to other environmental damages such as habitat destruction. "… they often think that the reason for the population decline is collection, and sometimes it is but most of the time it's not. Most of the time, it's some other industry..." [3381]. Here the respondent goes on about how the timber industry destroys habitat. Much like *Contribute to Conservation*, *Other Harms are Worse* was a common topic discussed in relation to the loss of wildlife, although not always specifically as a neutralization for a specific behaviour.

No Other Option

One of the most common techniques used blamed limited options. These animals are hard to get, so there is nowhere else to buy them - what are they to do? One vendor said, "And, you know, we need to get our animals somewhere" [4130]. Another stated, "they always had the stuff no one else has ever heard of…" [8755]. The low supply and lack of variety in species forced motivated buyers to look for alternative sources, especially when seeking rare species.

Competition

Blaming limited choice largely centred around the need to stay competitive in the business environment. If your competitors are selling these animals, you have no other option but

[16] Assurance colonies are a form of in-situ conservation that establishes a captive population with the aim of reintroduction when ex-situ conditions are suitable (e.g., following habitat restoration).

to do the same if you want to stay afloat. At the end of the day, it is an economic choice, as described by this vendor.

> "And you would, … acknowledge … like we wouldn't know for sure what not, but we had our doubts, but we would still buy them. Because at the end of the day, it's your business, you're competing against all the other suppliers and whatnot." [9197]

Didn't know or ask

Verifying if something is captive-bred in Canada can be a challenge. The following quote is from a breeder. Earlier in their interview, they discussed the types of questions one could ask to ascertain if an animal has been captive-bred, but then, contradicting themselves, described how difficult it is to know where an animal came from while discussing a purchase from a known smuggler.

> "… we didn't know at the time that they were smuggled. We're about day or two days drive almost from [city name omitted], we can't go and see them. … So, it's a risk, especially on Kijiji as to whether you're actually going to get what you're paying for, or get anything to call and when you're paying for things. But if, if it's something you want in Canada and that's the situation you're in, it's your best judgment as to whether you're actually going to get anything. Or if you can figure out whether it's somebody that's legitimate and has a breeding colony or whether it's smuggled, it's very difficult to… [there are people out there] that have very old breeding groups that they've had for a decade. And things are, it's very difficult to know where things are coming from… You never get any background information from anybody, rarely get a receipt. Like it's, it's difficult." [8322]

Some discussed how they simply didn't know or didn't ask if the animal was illegally sourced. For many respondents, it is widely known who the actors are that trade in animals that are likely illegally sourced, but people will turn a blind eye and not report the individual. This technique was one of the most pervasive (n=8).

6.2 Discussion

Participants in the study all described beliefs supporting wildlife conservation and/or animal welfare, and some also explained how it would be wrong to violate the law. Most also

discussed the salience of negative impacts of illegal wildlife trade on the environment (e.g., loss of biodiversity, threat of invasive species) and animal welfare (e.g., animals with limbs taped inside their bodies while being smuggled). However, almost one-third described incidents where they had purchased animals that were likely or suspected to be illegally sourced. More than half of the participants also articulated neutralizations that in some way compensated for their (or another person's) purchase of illegally sourced TFTs. This implies that beliefs about animal welfare and conservation do not necessarily inhibit the purchase of illegally sourced TFTs.

Before discussing the results, I wish to acknowledge the limitations. Results are based on a small sample size and cannot be generalized to the broader population. Although it is possible that the neutralizations provided to the interviewer were fabricated (Hindelang, 1970), the consistent and repeated use of the same neutralization techniques within and between interviews suggests these are common narratives used to compensate for norm violations. Many participants discussed their beliefs at multiple points throughout the interview, even when asked questions not directly pertaining to conservation, animal welfare or neutralization. The results presented here are intended to provide a starting point from which we can begin to understand decision-making in the Canadian TFT trade.

Morality, Conservation and Animal Welfare

As noted in Chapter 5, some participants described how they would abide by the law and could not see why someone would not do the same. Participants also subscribed to other norms by describing support for conservation and animal welfare. One of the most remarkable yet unsurprising results is that all participants genuinely cared for and loved animals (feelings often rooted in their childhood). This implies that pro-environmental and animal welfare beliefs related to TFTs may be consistent with literature that shows that childhood experiences with nature are

connected to pro-environmental attitudes and behaviour (Cheng & Monroe, 2012; Evans, Otto & Kaiser, 2018). Although it is not clear how early childhood attitudes and beliefs shape adult behaviour, these early experiences were salient to study participants and are worthy of further inquiry.

Beyond experience during childhood, many participants spoke at length about their love of TFTs, other reptiles and animals in general, particularly breeders. Some became highly emotional at the prospect of losing their animals if the laws changed or enforcement officers seized their animals. Many also described pro-environmental/animal welfare behaviour (see value-belief-norm, Stern, 2000) by working to actively protect animal welfare (e.g., by trying to ensure animals are sold to responsible pet owners with the proper equipment or taking in rescue animals) and conservation (e.g., working with a conservation organization). In this regard, it seems that participants held strong beliefs in support of conservation and animal welfare, which in some cases, led to pro-environmental/animal welfare behaviour. However, some participants still described how one might neutralize the acquisition of an animal that was likely sourced illegally.

Neutralization

In total, nine sub-techniques were used to neutralize behaviour in the TFT supply chain. Techniques used in this study fell into distorting the facts, negating the norms, and blaming circumstances beyond one's own control (Kaptein and van Helvoort, 2019). The conceptualization of the techniques used was unique to wildlife trade, but all of the techniques aligned with Kaptien & van Helvoort (2019)'s model. Some of the techniques also aligned with other studies of wildlife crime, such as Eliason and Dodder (2000) finding that poachers denied responsibility and used metaphor of the ledger. Some of the vendors saw the law as illegitimate,

similar to farmers denying the necessity of the law to rationalize badger culling in England (Enticott, 2011). When they negated the norms, they often described how the laws are illegitimate, the harm is minimal, or how they might actually be doing something good for the animal or nature.

Most of the participants described more than one neutralization technique, demonstrating how multiple strategies may be used simultaneously to neutralize participation in an illegal supply chain. The use of multiple techniques has been found in other areas of neutralization research (e.g., honour crimes, Baak et al., 2018). It is not clear at what point the neutralization happens (e.g., prior to the purchase of an animal or following the purchase) nor how or why different techniques are combined. However, recognizing that techniques can be layered is important for understanding how they manifest in the real world. From a theoretical perspective, this raises questions about why and how neutralizations arise and if there are points in the supply chain where people are more likely to layer techniques. It also has implications for possible behaviour change interventions that may wish to target common neutralization techniques or avoid unintentionally reinforcing them.

Results also raise questions about how neutralizations might be used to conserve one's image as a responsible TFT vendor. Neutralization may help maintain one's identity by creating a narrative that allays feelings of guilt or responsibility (Giddens, 1991; Maruna & Copes, 2005). It is possible that they may do this to maintain their identity in herpetoculture or as a legitimate businessperson by aligning with their pro-environmental beliefs and other norms. This may be indicative of a broader culture or perceptions within the reptile industry and herpetoculture that may consider it ok to trade illegally sourced TFTs as long as you are not the person who actually smuggled the animal.

As described above, some of the neutralization techniques were environmental or welfare focused, reflecting the idea of CGB by compensating for one environmentally damaging act by doing another beneficial act (Hope et al., 2018). Norms related to conservation and animal welfare are not generally considered when studying neutralization of crime. Yet these norms are widely held by those at the centre of the TFT supply chain. On the surface, one might expect that people who care about animal welfare or conservation would be deterred from purchasing illegally sourced TFTs if they have knowledge of the harms associated with IWT. However, this is not necessarily the case. Importantly, some neutralizations pointed to these very norms to rationalize participation in illegal trade. For example, rescuing sick animals or building captive-bred populations that could one day be re-released in the wild. In this way, they may be supporting their pro-environmental beliefs and absolving themselves of the potential guilt. In a study of attitudes to international wildlife trade, some participants felt that trade was acceptable for the conservation of animals removed from "polluted, over-exploited or degraded environments" (Contina et al., 2021, p. 185). Moorhouse and colleagues (2017) found that messaging on animal welfare and conservation was not associated with willingness to buy. Given the complexity of attitudes towards wildlife trade, perhaps conservation messaging has the opposite intended effect by tapping into CGBs or other neutralizations. This raises important questions about how we deliver messaging on conservation impacts and animal welfare and the potential to unintentionally reinforce or legitimize neutralization techniques.

Neutralization & the Supply Chain

Neutralizations described by participants were framed in the context of acquiring an animal that may have been sourced illegally, but they did not describe neutralizations when selling the animal on to end buyers. Why would they neutralize the purchase of an animal but not

the re-sale? Perhaps this is an artefact of the interview protocol, which did not ask specific questions about the morality of re-selling illegally sourced animals, although the interview did ask questions about sales to end customers. It is also possible that there is a perception that it is not illegal to sell a TFT that was imported illegally. It is possible that there is no need to further neutralize the sale because they have already rationalized their acquisition. Ultimately, where neutralization in the supply chain occurs and how it occurs requires further investigation to determine how it influences willingness to purchase illegally sourced animals and if it changes depending on the position in the supply chain.

Implications for Theory

This study suggests that there is likely a link between neutralization, pro-environmental attitudes and beliefs, environmental concern, and participation in the illegal wildlife supply chain. In the literature, neutralizations have been shown to have a moderating effect on behaviour. Uba and Chatzidakis (2016), in their discussion of the relationship between neutralization and car use, posited that neutralization (and counter-neutralization) techniques would moderate intention. Further inquiry could look at the possible moderating effects of neutralizations on willingness to purchase illegally sourced animals. Neumann and Mehlkop (2022)'s study of the relationship between environmental concern and green energy usage found that neutralizations had a moderating effect on environmental attitudes and negatively interacted with normative expectations. But importantly, when they relied on neutralizations, the normative expectations of family were no longer important. This has implications for how we think about the role of informal deterrence (see Chapter 5) in the presence of neutralization and lays the foundation for further investigation into potential interactive (or moderating) effects.

To advance our understanding of the relationship between pro-environmental/animal welfare beliefs, theories from other disciplines, for example, the theory of planned behaviour, which looks at the role of behavioural, normative and control beliefs on intention and, ultimately behaviour (Ajzen, 1991), and value-beliefs norm (VBN) theory of environmental behaviour (Stern, 2000) could also be used to consider how people give up personal beliefs for the sake of the environment and where neutralization could occur in the decision-making process. For example, Stern (2000)'s *environmental concern* was connected to *awareness of consequences*, followed by *ascription of responsibility* and *personal norm*s, at each of these stages, different techniques of neutralization described by Kaptien & van Helvoort (2019) may occur. Integration of these frameworks could improve the conceptualization of the decision-making process in IWT.

Implications for Scale Development

In this chapter, I outlined various techniques used to neutralize participation in illegal TFT supply chains. Moving forward, it is important to think about how we operationalize these constructs in a manner that is relevant to IWT. For environmental beliefs and behaviour, we can look at the conservation literature, for example, the NEP that measures environmental concern (see Hawcroft & Milfont, 2010 metanalysis). These scales focus on broader environmental harms (such as energy and climate policies) and would not be appropriate for the IWT context, but it may be possible to adapt them in future work.

For neutralizations, Maruna and Copes (2005) critiqued previous scales as being too broad or abstract. Although existing scales tested neutralization in the context of green criminology (Tabar et al., 2022), they require substantial modifications for use in IWT. Qualitative information, as provided in this chapter, is key to the development of reliable indices

(Maruna & Copes, 2005). Importantly, this research allows for careful consideration when building and pilot testing scales to measure pro-environmental beliefs and neutralizations. The rarity of the species could influence the use of neutralization techniques (e.g., blame limited options). As such, these results provide a baseline from which we can develop appropriate scales to empirically test the relationships between neutralizations and pro-environmental and pro-animal welfare beliefs or other norms. Based on the information from this project, we will be better equipped to advance research on the causal and temporal relationships between variables that influence offender and non-offender decision-making in IWT.

CHAPTER 7: CONCLUSIONS

7.1 Summary

At the outset of this project, little was known about the legal and illegal trade in TFTs in Canada, and no systematic work had been done to identify or characterize those participating in the supply chain. Chapter 4 (Part I) takes important first steps to describe the supply chain structure and identify points of sale for TFTs in the Canadian market and where overlaps between legal and illegal supply chains occur. It is a complex system involving myriad actors moving at different stages of the trade. Notably, once TFTs are in the country, it becomes extremely difficult to identify animals that have been imported illegally. For these reasons, the description of the supply chain structure provides essential context for understanding factors influencing compliance and non-compliance with laws regulating TFT trade. It highlights the need to consider how different theories from multiple disciplines may be needed to explain and understand decision-making in the supply chain.

Chapter 5 (Part II) studied deterrence and how perceptions may influence compliance or non-compliance. This was not a test of deterrence theory, but it points to several issues worthy of further exploration, notably a heterogeneity in risk perceptions. Perspectives of the certainty and severity of punishment differed among study participants; some saw the certainty and severity as high, while others saw it as extremely low. Results suggested that those who perceive the risks as high tended to learn about illegal trade from secondary sources such as the news media. In contrast, others discussed why smuggling continued, noting that authorities are unlikely to catch them. Several participants spoke of smugglers that were repeat offenders that returned to illegal trade despite having been caught in the past, raising questions about the nature and extent of recidivism in IWT. Informal sanctions also emerged as a potentially useful tool to reduce participation in the illegal supply chain. However, there was also a willingness to turn a

blind eye and a reluctance to intervene. Ultimately, the potential social and economic consequences of informal and formal sanctions were salient to study participants, but so too were the benefits of high-profit margins and a perceived low likelihood of being caught or reported.

In Chapter 6 (Part III), I explored pro-environmental beliefs and the morality of participating in the supply chain where there are illegally sourced animals. Almost all participants described support for animal welfare and conservation and recognized the damage that illegal trade can have to both, but many described techniques to neutralize participation in illegal TFT supply chains. In some circumstances, they drew on their beliefs about conservation and animal welfare as support for participation in the illegal supply chain (e.g., rescuing animals or contributing to a captive assurance population). Importantly this chapter emphasizes the need to include measures for norms related to pro-environmental and animal welfare attitudes and beliefs to understand the intrinsic factors that influence compliance and how neutralization can be used to violate these norms.

7.2 Limitations

Study results are framed under several important limitations (in addition to those mentioned earlier). This is a small sample that captures the perceptions of those involved in the trade in TFTs. Results focus on perceptions of the trade rather than actual behaviour, which means it is not possible to make inferences on objective deterrence or pro-environmental behaviour. However, this work lays the foundation for understanding the decision-making processes underpinning participation in the Canadian TFT trade.

Although efforts were made to triangulate information with enforcement records, the opinions and perceptions of the drivers and mechanisms of trade contain biases associated with the recording of official records and the personal bias of those who agreed to participate in the

study. It is possible that participant responses contained social desirability bias; however, many participants spoke candidly about sensitive topics (e.g., illegal trade) and responded consistently throughout the interview, often offering information unprompted (see Appendix B for a detailed discussion). It is also possible that those who declined participation or were not identified in the sampling process would hold perspectives outside of those shared in the study.

Although this work has limitations, it is important to recognize that this is a common challenge for IWT research. Data is often hard to access or, in many circumstances, is non-existent. There are few records on the trade in wildlife outside the U.S. (where it is mandatory to declare imports and exports), and even the data that is collected is often flawed (Petrossian et al., 2016; Prestridge et al., 2011; Rhyne et al., 2017). Gaining access to enforcement records and individuals involved in the trade, particularly vendors, is rare, and while the data presented here has limitations, this is one of the few studies to begin to unpack these issues in IWT and identify intersection points between legal and illegal trade, particularly in the Canadian context. Results align with the extant literature on IWT and street crime and also provide new insights into the supply chain structure, formal and informal sanction threats, and the role of pro-environmental beliefs, laying the foundation for future empirical inquiry. This is an important and necessary step for advancing quantitative theory testing for environmental crimes (see Lynch et al., 2017).

7.3 Advancing Theory

One of the goals of this project was to address Lynch and colleagues' (2017) critique of the lack of systematic theory testing in environmental crime research. Using the Panada framework that recognizes the complex and multi-faceted nature of IWT, I sought to explore how multiple theories may be needed to explain crime within the supply chain (Boratto & Gibbs, 2021). The framework is centred around the need to build a solid description of the context and

actors driving illegal wildlife trade, followed by in-depth theoretical inquiry. This project has taken important first steps to describe the nature of TFT trade and explore the applicability of multiple theoretical approaches to understanding the decision-making process of actors in the trade from a *wide* rational choice perspective (Svensson et al., 2017). Findings suggest that multiple factors drive decision-making in the supply chain and are perceived uniquely by different actors. A single theory, such as deterrence, would be insufficient to explain compliance and non-compliance, and there is a need to dig further into the extrinsic factors (e.g., sanction threats and social networks) as well as intrinsic factors (e.g., perspectives on wildlife conservation).

Throughout this dissertation, I also outlined several other areas of theory from within criminology (e.g., life course theories, (Sampson & Laub, 1992), and outside criminology (e.g., Theory of Planned Behaviour (Ajzen, 1991), Value-belief-norm theory (Stern, 2000)) that may help us better understand and measure decision-making in IWT. For example, a number of participants described people who repeatedly smuggled TFTs and other wildlife across the border and only stopped when they got old and sick or died. Sampson and Laub (1993, 2003, 2005), in their age-graded theory, found that as people grow older, they experience turning points (e.g., marriage, higher education) which shift them away from crime through increased informal social control, changes in opportunity, and a commitment to a new life. However, in the wildlife crime context, it is unclear if offenders follow these same patterns. Some described the reptile trade as a tightly linked community with informal sanctions, but these could be undermined by a willingness to turn a blind eye. Continued participation in legal and illegal reptile trade may reinforce opportunity structures for illegal trade as the person expands their social and criminal capital. If they consider the detection and sanction risk to be low, then

perhaps there is a lack of incentive to move away from illegal trade despite experiencing turning points, such as marriage or higher education. It may be that the life course of some wildlife offenders is more similar to white-collar crime offenders who are often older, educated, employed and married (Piquero & Piquero, 2016). Ultimately, further life course research on wildlife offenders is needed to understand what might influence desistance.

Research is also needed to unpack the decision-making process that occurs at different stages of the supply chain. Results from this study could be used to inform the construction of surveys in a follow-up study to test how proximity to offenders or illegal trade influences sanction risk perceptions to develop a deeper understanding of the mechanisms and nuance behind perceptual deterrence (see Apel, 2021). For example, results from this study suggest that there may be a link between proximity to illegal trade and perceptions of sanction certainty and severity. Future research could test possible hypotheses, such as whether more knowledge of (or experience with) TFT smuggling is associated with lower perceived certainty of being detected.

There is also an opportunity to look at the relationship between pro-environmental beliefs and neutralizations and how techniques may vary based on one's position in the supply chain or even based on one's current stage in the supply chain (e.g., neutralizations used at the point of purchase but not point of re-sale). Future research could also look at the possible moderating role that neutralizations play when vendors choose to (or not to) purchase or sell illegally sourced animals (as proposed by Uba and Chatzidakis (2016) in their discussion of car use). Next logical steps could also look at end buyer behaviour to examine drivers of demand and how this demand influences other stages of the supply chain. Surveys that explore and test the various motivations for participation in the trade can be targeted to specific audiences identified in this study (e.g., new-experience seekers or collectors).

7.4 Advancing Practice

The world's TFTs are being rapidly depleted (Stanford et al., 2020). Recent events, such as the U. S. Fish and Wildlife Service Collaborative to Combat the Illegal Trade in Turtles Workshop (2023) (which included representation from Canada), highlighted the dire state of North America's turtles and the vulnerability to overexploitation for the illegal pet trade. Yet there is little research to support practitioners in their work to end over-harvesting and illegal trade, particularly when it comes to crime prevention [pers. comm. 2023]. Practitioners working on IWT call for harsher punishments (Gogo, 2016; Heinrich et al., 2017), but this narrative is not supported by the extant literature (Wilson & Boratto, 2020), and the results of this study suggest that this approach is unlikely to achieve the desired outcomes given that those participating or close to illegal trade may see the certainty of being caught as low and the punishment as inconsequential. Recognizing that there is heterogeneity in perceptions of the certainty and severity of sanction threats, policymakers and practitioners could explore alternatives to formal sanctions, such as working with industry to develop campaigns designed to increase informal sanctions or reduce the excuses for buying illegally sourced turtles by challenging commonly used neutralization techniques. Shifting the demand of vendors and buyers away from these animals through campaigns similar to anti-smoking and drunk driving could open new avenues to prevent the rapid decline in TFTs. Moving forward, research by social scientists will continue to inform the development of effective crime prevention and conservation strategies.

7.5 Conclusion

As illegal wildlife trade continues unabated at an alarming rate, and populations are pushed closer to extinction (e.g., the critically endangered Ploughshare tortoise, Mandimbihasina et al., 2020), there is an urgent need for a deeper understanding of those involved and the

structure of the supply chains. This project is one of the few to look at the perceptions of vendors and their perspectives on deterrence and how intrinsic factors, such as neutralization, influence the decision-making process. Results from this study demonstrate the complexity and nuance behind IWT and provide the prerequisite backbone for developing relevant scales and measures specific to the unique nature of wildlife trade, without which models could be mis-specified. This is an important first step for developing research designed to inform evidence-based demand reduction and enforcement strategies. Ultimately, if we want to implement effective criminal justice reforms, campaigns, or interventions to disrupt IWT, we must continue to study drivers of compliance and non-compliance.

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APPENDIX A: IMPACTS OF ILLEGAL TFT TRADE

1. *Population Collapse*

   TFTs have a life history with low fecundity and low nest survival rates associated with long-lived species (Congdon, Dunham & van Loben Sels, 1993). Given the long lifespans of TFTs, even if numerous adults remain, the population will collapse without new recruitment (Lovich et al., 2018). As a result, large trade volumes and restricted island endemics leave populations susceptible to over-exploitation (Natusch & Lyons, 2012).

2. *Loss of Biodiversity*

   Loss of TFT biodiversity can have cascading environmental impacts. TFT contribution to biomass is at least an order of magnitude greater than that of other reptiles, so population declines can alter ecosystem structure and have substantial impacts on wetland and terrestrial environments (Lovich et al., 2018). TFTs perform important ecological functions, including 1) ecosystem mineral cycling and bioaccumulation; 2) acting as a predator and prey; 3) influencing plant biodiversity through seed dispersal and germination; and 4) acting as ecosystem engineers (e.g., their burrows provide shelter for hundreds of other animals) (Lovich et al., 2018).

3. *Invasive Species & Zoonotic Diseases*

   IWT risk is also associated with the spread of invasive species (García-Díaz et al., 2017). Some TFTs have become invasive when unwanted pets are released into the wild. In the absence of natural co-evolved predators or parasites, these exotic species may outcompete native species (Taniguchi et al., 2017) or spread pathogens that could threaten local populations (Chomel et al., 2007; Travis et al., 2011).

4. *Cultural Impacts*

TFT's have cultural significance in many societies (Turtle Conservation Coalition, 2018). For example, in China, turtles have a long history in traditional medicine, as a source of currency and luxury products, and are kept as a symbol of longevity and wealth (Zhou & Jiang, 2008). In North America, the turtle is an important part of indigenous natural heritage and creation stories, with evidence in the archeological records dating back to 4000-3000 B.C. (Pearce, 2005). "…losing them would not only degrade ecosystems and contribute to the widespread loss of biodiversity; it would destroy an important piece of our culture." (Turtle Conservation Coalition, 2018, p. 2).

APPENDIX B: POSITIONALITY & BIAS

Copes and colleagues (2020) critiqued qualitative studies in criminology for omitting discussion on the possible impacts of positionality. Given that there are strong opinions for and against using wildlife and keeping wildlife, perceptions of the interviewer's position could influence the results. To reduce bias, the study was presented to participants as taking an ecocentric approach that does not take a position on the use of wildlife.[17] Some interview participants (n=9) asked questions before, after, and sometimes during the interview about the positionality of the study and the interviewer. In some cases, participants were concerned that the study was affiliated with animal rights groups that are interested in banning all trade in wildlife, while in other cases the participant was curious about the interviewer's position on the keeping of wildlife as pets. When a participant asked questions about the interviewer's position on wildlife trade the interviewer noted that the study is not designed to prevent the use or trade in wildlife and has no affiliation with or funding from animal rights groups. They were assured that their opinions and perspectives were important and that results are analyzed under a lens that considers the value of both the environment and human use of wildlife. The goal was to assure them that this is a scientific study that is designed to improve our understanding of the pet trade and include their voice. Although the interviewer made every effort to maintain neutrality on the use of wildlife, it is still possible that the participant could assume that one perspective (bio- eco- anthro-) is more important to the interviewer and shape their answers accordingly.

The risk of social desirability bias, where a participant shapes their responses based on their perceptions of what is socially acceptable, creating a mismatch between their true

[17] An *anthropocentric* perspective places human needs above those of nature, a *biocentric* perspectives places prioritizes the environment and wildlife, an *ecocentric* perspective aims for a balanced approach by recognizing the needs of both humans and the environment (Wyatt, 2013).

perceptions and their response to an interviewer (Grimm, 2010), extends beyond perceptions on the use of wildlife and may include perceptions of sanctions. While it is impossible to fully mitigate this threat to validity, several techniques were used to minimize its effect. Many questions were asked indirectly, probing about the behaviour of others rather than the participant's own behaviour (Bergen & Labonté, 2020). Participants were also provided assurances about confidentiality, and responses to sensitive questions were followed by prompts for more information or requests for examples (Bergen & Labonté, 2020). Participants often provided information on illegal trade unprompted (e.g., while responding to other questions), and responses to related questions were consistent. To further limit bias, responses were triangulated with enforcement records. There was consistency between these records and interviews; for example, discussions of smuggling techniques matched closely with case files

APPENDIX C: SPECIES TRADED IN CANADA

Species in trade in Canada (2008-2022)

Genus	Species	Canada Pet Trade^	Bred in Canada*
Apalone	ferox	yes	unknown
Astrochelys	radiata	yes	unknown
Batagur	borneoensis	yes	unknown
Carettochelys	insculpta	yes	unknown
Centrochelys	sulcata	yes	yes
Chelodina	mccordi	yes	yes
Chelonoidis	denticulatus	yes	yes
Chelonoidis	carbonarius	yes	yes
Chelydra	serpentina	yes	unknown
Chrysemys	picta	yes	conservation
Claudius	angustatus	yes	unknown
Cuora	amboinensis	yes	unknown
Cuora	flavomarginata	yes	yes
Cuora	mouhotii	yes	yes
Cuora	galbinifrons	yes	yes
Cuora	trifasciata	yes	unknown
Emydoidea	blandingii	maybe	conservation
Emydura	subglobosa	yes	yes
Emys	orbicularis	yes	unknown
Geochelone	elegans	yes	yes
Geoclemys	hamiltonii	yes	yes
Geoemyda	spengleri	yes	yes
Glyptemys	insculpta	yes	yes
Graptemys	caglei	yes	unknown
Graptemys	pseudogeographica	yes	yes
Graptemys	geographica	yes	yes
Heosemys	grandis	yes	unknown
Indotestudo	elongata	yes	yes
Kinixys	belliana	yes	yes
Kinixys	erosa	maybe	unknown
Kinosternon	subrubrum	yes	unknown
Kinosternon	scorpioides	yes	yes
Kionosternon	baurii	yes	yes
Macrochelys	temminckii	yes	unknown

Table Appendix C (Cont'd)

Genus	Species	Canada Pet Trade^	Bred in Canada*
Malaclemys	terrapin	yes	yes
Malacochersus	tornieri	yes	unknown
Malayemys	subtrijuga	maybe	unknown
Mauremys	japonica	yes	unknown
Mauremys	mutica	yes	yes
Mauremys	reevesii	yes	yes
Mauremys	sinensis	yes	unknown
Pelodiscus	sinensis	yes	unknown
Pelusios	subniger	maybe	unknown
Pelusios	castaneus	maybe	maybe
Phrynops	hilarii	yes	unknown
Phrynops	tuberosus	yes	unknown
Platysternon	megacephalum	yes	yes
Pseudemys	concinna	yes	unknown
Pseudemys	peninsularis	yes	unknown
Pseudemys	rubriventris	maybe	unknown
Rhinoclemmys	pulcherrima	yes	yes
Sacalia	bealei	yes	yes
Siebenrockiella	crassicollis	yes	yes
Staurotypus	triporcatus	yes	unknown
Sternotherus	minor	yes	yes
Sternotherus	odoratus	yes	yes
Sternotherus	carinatus	yes	yes
Stigmochelys	pardalis	yes	yes
Terrapene	triunguis	yes	yes
Terrapene	carolina	yes	yes
Testudo	graeca	yes	yes
Testudo	hermanni	yes	unknown
Testudo	kleinmanni	yes	yes
Testudo	marginata	yes	yes
Testudo	horsfieldii	yes	yes
Trachemys	scripta	yes	yes

^ Species listed as being maybe were discovered during attempted imports, unknown if the species is in Canadian trade.

* Bred in Canada *Yes* includes breeder claims that they captive-bred the species – it is possible that breeders were dishonest. Additional verification of captive breeding may be merited.

Some species are known to be bred in Canada for conservation purposes.

An additional 10 species were identified as possibly being in trade (e.g., identified through online ads and informal conversations), but their presence in trade was not confirmed by the data collected in this study.