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A PSYCHOLOGICAL PERSPECTIVE ON INTERNATIONAL ENVIRONMENTAL LAW

BY

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DISSERTATION

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ABSTRACT

The current body of literature on law and psychology has largely overlooked the potential influence of psychology within the realm of international environmental law (IEL). This dissertation seeks to address this gap by integrating insights from international law and the psychology of environmental law to examine how states respond to transboundary environmental harms. The central argument asserts that incorporating psychological perspectives can significantly enhance our understanding of the decision-making process within IEL. This study proposes a theoretical framework termed the "psychology of international environmental law," which highlights the unique psychological dynamics at play in IEL. Specifically, it focuses on how psychological factors that shape state officials' decision-making regarding transboundary governance and environmental impacts. By applying this framework, it becomes possible to interrogate the underlying motivations guiding state actions related to treaty formation, negotiation processes, and adherence to legal obligations and commitments. This dissertation includes three case studies: the 1946 Whaling Convention, the negotiation of the WTO Environmental Goods Agreement, and Taiwan's unilateral compliance to climate legislation. These case studies illustrate the intricate interplay between psychology and IEL.

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TABLE OF CONTENTS

INTRODUCTION.....	1
CHAPTER 1. LOCATING THE PSYCHOLOGY OF INTERNATIONAL ENVIRONMENTAL LAW WITHIN EXISTING SCHOLARSHIP AND APPROACHES	4
CHAPTER 2. IDENTIFYING THE HEART OF THE FIELD: THE PSYCHOLOGY OF TRANSBOUNDARY GOVERNANCE ON ENVIRONMENTAL HARM.....	48
CHAPTER 3. THE PSYCHOLOGY OF TREATY FORMATION: THE CASE OF INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING.....	102
CHAPTER 4. THE PSYCHOLOGY OF NEGOTIATION AND THE WTO ENVIRONMENTAL GOODS AGREEMENT	136
CHAPTER 5. THE PSYCHOLOGY OF COMPLIANCE: THE CASE OF TAIWAN IN INTERNATIONAL CLIMATE COMPLIANCE	180
CONCLUSION	217
REFERENCES.....	220

INTRODUCTION

The integration of psychological studies into the field of law has enriched our understanding of legal studies for decades. The law and psychology approach, coupled with empirical observations, enrich both general domestic and international laws; nonetheless, the precise application of this approach to international environmental law remains unclear. The question of what function does law and psychology play in international environmental law is raised by this gap.

General research in law and psychology has deepened our understanding of how people think about the law,¹ and area-specific analysis has delved into how cognition, motivation, emotion, and social context play a vital role in legal domains such as contract law, intellectual property law, criminal law, and legitimacy.² In the last decade, this interdisciplinary approach has extended into international law, linking psychological observations with international legal mechanisms.³ This interdisciplinary discourse offers the potential of enhancing our understanding of international formation, compliance, and state behavior. Most recently, the field of environmental law and psychology has emerged, positing that environmental impacts characterized by diffusion, complexity, and non-human agency could evoke specific psychological responses. The finding adds to our understanding of how environmental factors might influence legal processes and cause specific psychological reactions in individuals.

¹ See generally, TOM TYLER, WHY PEOPLE OBEY THE LAW (2006).

² See generally, ANDREAS KAPARDIS, PSYCHOLOGY AND LAW: A CRITICAL INTRODUCTION (2010); Tom Tyler, *The Psychology and Rule Adherence: A Psychological Perspective on the Antecedents and Consequences of Legitimacy*, in THE PSYCHOLOGY OF JUSTICE AND LEGITIMACY 251 (D. Ramona Bobocel et al., eds., 2010).

³ Jean Galbraith, *Treaty Options: Towards a Behavioral Understanding of Treaty Design*, 53 VA. J. INT'L L., 209 (2013); Anne van Aaken & Tomer Broude, *The Psychology of International Law: An Introduction*, 4 EUR. J. INT'L L. 1225 (2019).

Although emerging scholarship in the psychology of international law and the psychology of environmental law offer valuable insights on which to build, no scholar has yet attempted to integrate psychological insights as they apply to the distinctive and technical field of international environmental law. To address these gaps, this dissertation proposes to identify the distinctive contribution of psychology to the domain of international environmental law.

International environmental law can be defined as the regulatory control of transboundary environmental harm.⁴ This definition distinguishes international environmental law from environmental law and international law, despite their shared characteristics.

Organized into five chapters with an introduction and a conclusion, this dissertation identifies the contours of the psychology of international environmental law in its **first** chapter, introducing the concept of psychology of international environmental law, delineating the definition of international environmental law, and highlighting the lack of structural discussion on the psychology of international environmental law. The **second** chapter addresses gaps in the literature and argues that international law and environmental law are integral to the psychology of international environmental law. This chapter identifies six psychological features underpinning international environmental law and which arise from transboundary environmental harm governance: diffusion, complexity, and non-human interaction from environmental impact; and voluntariness, fragmentation and political borders from transboundary governance. Collectively,

⁴ Prior to the 1970s, resource management, or ownership, constituted the majority of early international environmental law. See, e.g., the 1946 International Convention for the Regulation of Whaling. Then did environmental harm become a factor. For example, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.

these six features spell out the structural dialogue of the psychology of international environmental law.

In order to obtain an important and beneficial understanding, case studies are used in Chapters Three, Four, and Five to apply the previously mentioned theoretical framework. Chapter *three* examines the 1946 Whaling Convention, focusing on the psychology of treaty formation and discussing “why whales enjoy exclusive attention from international legal mechanisms and how Japan undervalued and violated the protection of whales.” This chapter demonstrates how psychological observations help understand the treaty formation and relevant violation. Chapter *four* analyzes the WTO Environmental Goods Agreement negotiation, demonstrating how psychological insights enhance understanding of state’s value-preference behavior in balancing economic and environmental interests. From the case study, this dissertation claims that psychological studies enhance the understanding of negotiation processes and interest considerations of a state. Finally, chapter *five* explores Taiwan's climate compliance as a case study. Given Taiwan’s disputed status, Taiwan is a distinctive entity under international law. However, Taiwan continues to comply with climate change treaties unilaterally under its contested political circumstances. This dissertation project indicates that psychological observations can deepen comprehension of Taiwan's costly compliance behavior. These applications may improve our knowledge of the international environmental law decision-making process and strengthen the psychology of international environmental law.

The dissertation concludes by discussing the implications of its theory and outlining directions for future research in the psychology of international environmental law.

CHAPTER 1. LOCATING THE PSYCHOLOGY OF INTERNATIONAL ENVIRONMENTAL LAW WITHIN EXISTING SCHOLARSHIP AND APPROACHES

This chapter describes the contours of a psychological approach to international environmental law (IEL). It posits that the realm of psychology of IEL resides within the intricate convergence of three distinct domains of legal study: environmental law, international law, and law and psychology (see Figure 1). This project specifically targets the juncture of these disciplines, which is situated at the core intersection depicted in the figure below.

This chapter consists of three distinct sections in support of its thesis. In the initial section, this chapter explains the contour of the psychology of IEL, as depicted in figure 1. Following the *second* section delves into the area of IEL, exploring its multifaceted dimensions worthy of exploration. This section also introduces scholarly discussion on IEL, ranging from perspectives in law and economics to those in law and psychology. A comprehensive understanding of the current literature review aids in the subsequent development of the psychology of IEL in the following chapters. Lastly, the *third* section, offers a brief conclusion highlighting the psychological potential for transboundary environmental governance.

The first section will establish the foundational framework of the psychology of IEL. This section elaborates on Figure 1 and offers a brief yet comprehensive analysis to identify the approach. This part also explores the relationship between law and psychology, with a specific focus on environmental law and international law.

The next section will introduce and discuss the content of IEL. As a field of public international law, IEL shares characteristics with both international law and environmental law as

depicted in Figure 1. However, due to its emphasis on addressing transboundary environmental harm governance, certain legal features and domains of IEL differ from those of domestic environmental law and public international law. This section will delineate the essence of IEL and engage in relevant scholarly discussion on compliance to enrich our understanding of the subject. Through this review, this research contends that IEL, particularly in treaties and customary international law, presents ample opportunities for integrating psychology, thereby offering a valuable perspective. Nonetheless, the lack of a structured psychological discussion in IEL leads to a scholarly gap between psychological approaches and IEL. To address this potential gap, this research proposes the psychology of IEL in Chapter Two.

1.1 DRAWING THE CONTOUR OF THE PSYCHOLOGY OF IEL

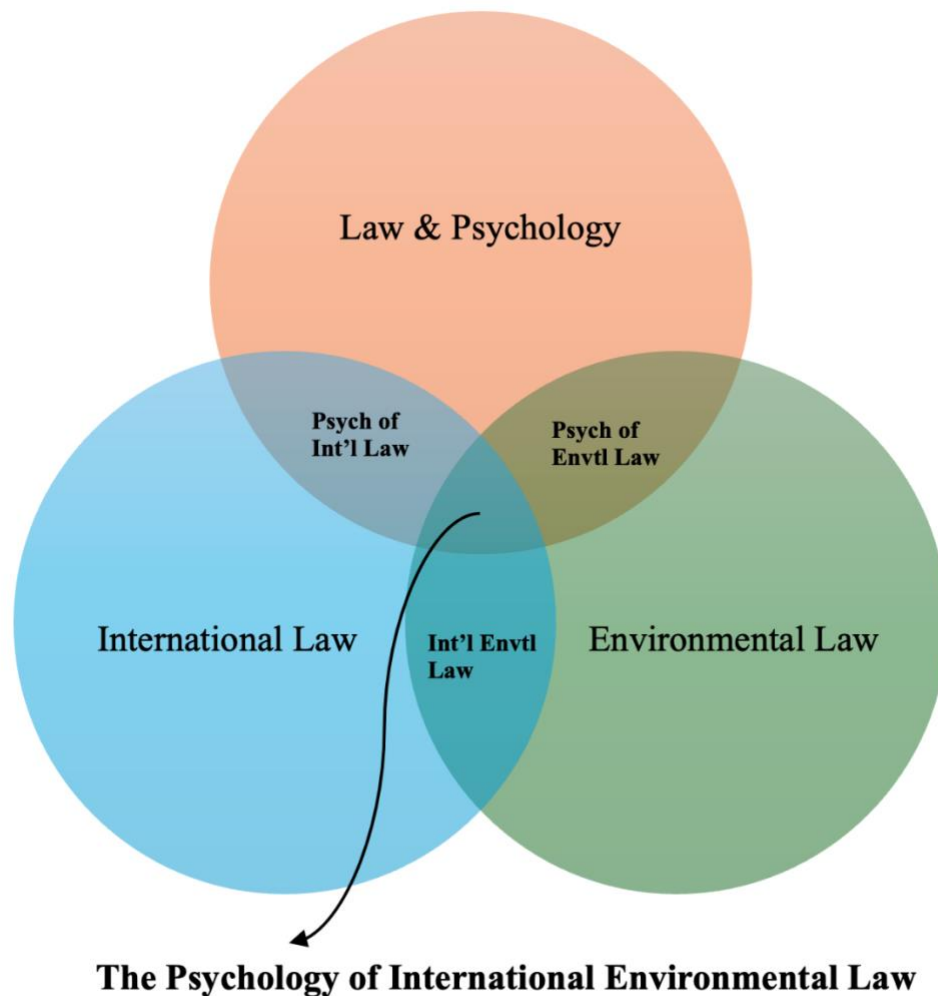


Figure 1: The Location of the Psychology of International Environmental Law

To establish the foundation for the integration of law and psychology, the first step will be to identify key methods, approaches, and controversies within each substantive field. The next step will be to discuss the extent to which the legal scholarship has already developed and intersected

with two of these fields, aiming to draw insights that can inform the analysis of the central area depicted in the diagram: the psychology of IEL.

This chapter commenced by introducing Figure 1, which serves as a visual representation of the conceptual framework underpinning the discussion. Initially, it offers a concise introduction to each outer circle and their overlapping regions. The central argument of this research posits that the psychology of IEL resides at the core of this diagram. Therefore, it is essential to have a foundational understanding of each area before I delve deeper into further analysis. Following this overview, a thorough literature review will be conducted, with a particular focus on the intersecting domains. Specifically, this chapter will have separate explorations of the literature on IEL and the psychology of environmental law, unpacking their respective nuances and connections for the discussion of psychology of IEL.

First, consider the contours of the substantive fields that are essential to the discussion of the psychology of IEL: environmental law, international law, and law and psychology.

Environmental law is law that regulates and manages the use of environment and tries to strike a balance between human activities and natural ecosystem within one's jurisdiction.⁵ According to Richard Lazarus, "[e]nvironmental law is concerned, in the first instance, with impacts on the natural environment."⁶ Lazarus identifies ecological injury as the common denominator among environmental laws and posits it as the common source of the specific challenges that environmental law presents for lawmaking. Importantly, Lazarus highlights that ecological injuries are often irreversible, catastrophic, and persistent; are both physically and temporally distant; implicate uncertainties and risks; have multiple causes; and have a

⁵ ARDEN ROWELL & JOSEPHINE VAN ZEBEN, A GUIDE TO U.S. ENVIRONMENTAL LAW 15-6 (2021).

⁶ Richard Lazarus, *Restoring What's Environmental about Environmental Law in the Supreme Court*, U.C.L.A. L. REV. 47, 708-812 (2000).

“noneconomic, nonhuman character.”⁷ Environmental law encompasses a wide spectrum of issues, ranging from pollution to biodiversity conservation, addressing concerns such as air and water pollution, waste management, biodiversity conservation to climate change mitigation.⁸ Its scope extends beyond environmental protection alone; it must also navigate the complex terrain of economic development, especially considering that many pollutants derive from industrial activities.⁹

International law, formed through the consent of states, reflects the collective agreement of the international society.¹⁰ The international society, comprised of sovereign states, shapes the decentralized and fragmental nature of the international legal system. Hence, without a superior authority above states, international law binds solely through state consent.¹¹ A key challenge in international law relates to enforcement; lacking a higher power than the state sovereignty exists, the enforcement of violations or compliance depends solely on the voluntariness of states.¹² Because of these challenges, a fundamental puzzle within international law revolves around understanding factors that lead states to consent to and comply with international law norms.

One influential account, articulated by Jack Goldsmith and Eric Posner, suggests that states are rational actors that seek to maximize their benefits and interests.¹³ Other scholars have offered alternative accounts: Andrew Guzman, for instance, suggests that reputation in international society could also be one factor that states care about;¹⁴ while Abram Chayes and Antonia Handler

⁷ *Id.* 748.

⁸ ROWELL & VAN ZEBEN, *supra* note 5, pp. 57-71.

⁹ *Id.* at 86.

¹⁰ Anne-Marie Slaughter, *International Law in a World of Liberal States*, 6 EUR. J. INT’L L. 503 (1995).

¹¹ Andrew Guzman, *The Consent Problem in International Law*, UC BERKELEY: BERKELEY PROGRAM IN LAW AND ECONOMICS (2011).

¹² Jack Goldsmith & Daryl Levinson, *Law for States: International Law, Constitutional Law, Public Law*, 122 HARV. L. REV. 1791 (2009).

¹³ JACK GOLDSMITH & ERIC POSNER, *THE LIMITS OF INTERNATIONAL LAW* 7 (2005).

¹⁴ Andrew T. Guzman, *Reputation and International Law*, 34 GA. INT’L & COMP. L. 379 (2006).

Chayes offer a managerial perspective on treaty dynamics that can induce compliance;¹⁵ Harold Koh critiques the over-simplification of motivations of states and suggests that the dynamics of the international society lead to state compliance;¹⁶ Thomas Franck suggests that the perceived fairness of international norms attracts state compliance;¹⁷ and Anu Bradford proposes that the market power of a jurisdiction could incentivize compliance and adoption of regulations.¹⁸

The psychological approach to law, or *law and psychology*, is an empirical methodology that uses psychological research in the legal sphere.¹⁹ As part of the “empirical turn” in the contemporary legal scholarship, the field of law and psychology seeks to enhance our understanding and prediction of individual behavior by relying on observations of individuals’ psychological motivations, emotions, and cognition.²⁰ Law and psychology has proven to be particularly helpful in shedding lights on how people perceive law, what results in individual compliance or violation, and how emotion figures into decision making.²¹ In addition, as Janice Nadler explained in her seminal article “Flouting the Law,” individuals’ perceptions of the law significantly affects their compliance of legal regime.²²

The second chapter of this dissertation focuses on the intersection of these three elements which sketches out the contour and explains the area of the psychology of IEL, which falls at the

¹⁵ ABRAM CHAYES & ANTONIA HANDLER CHAYES, *THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS* (1995).

¹⁶ Harold Koh, *Why do Nations Obey International Law*, 106 YALE L. J., 2599 (1997).

¹⁷ See generally, THOMAS M. FRANCK, *FAIRNESS IN INTERNATIONAL LAW AND INSTITUTION* (1995).

¹⁸ See generally, ANU BRADFORD, *THE BRUSSELS EFFECT: HOW THE EUROPEAN RULES THE WORLD* (2020).

¹⁹ See generally, TOM TYLER, *ADVANCED INTRODUCTION TO LAW AND PSYCHOLOGY* (2022).

²⁰ Thomas Ulen, *The Importance of Behavioral Law*, in *THE OXFORD HANDBOOK OF BEHAVIORAL ECONOMICS AND THE LAW* 93-124 (E. Zamir & D. Teichman eds., 2014).

²¹ MICHAEL J. SAKS, *Applying Social Psychology to Law and the Legal Process*, in *THE ROOTS OF MODERN PSYCHOLOGY AND LAW: A NARRATIVE HISTORY* 44-5 (Thomas Grisso & Stanley L. Brodsky eds. 2018) (ebook).

²² Janice Nadler, *Flouting the Law*, 83 TEXAS L. REV., 1399 (2005).

intersection of environmental law and international law and has a robust history as a field of legal research.

International environmental law (IEL) comprises legal frameworks that address transboundary environmental harm across sovereign jurisdictions. The Trail Smelter arbitration marked a significant milestone, as it was the first case to bring transboundary environmental harm before an international tribunal,²³ raising awareness within the international society that a legal exercise of a domestic territory could cause injuries to foreign neighbor states. Subsequent cases in the International Court of Justice, such as²⁴ Gabčíkovo-Nagymaros,²⁵ Pulp Mills,²⁶ and Silala River dispute,²⁷ further underscored the governance and utilization challenges associated with transboundary environmental harm. These cases showed how lawful land use within one nation's borders could result in transboundary damage affecting other states, prompting recognition among nation-states that domestic actions carry international legal implications for the environment.

Subsequent years saw increasing awareness of other transboundary environmental harms, including ozone layer depletion, global warming, cross-border pollution, and biodiversity loss. At the same time, as with other areas of public international law, the decentralized nature of international environmental agreements and international institutions poses significant challenges for enforcement and compliance.²⁸

²³ James R. Allum, "*An Outcrop of Hell*": *History, Environment, and the Politics of the Trail Smelter Dispute*, in TRANSBOUNDARY HARM IN INTERNATIONAL LAW LESSONS FROM THE TRAIL SMELTER ARBITRATION 13-26 (Rebecca M Bratspies & Russell A. Miller eds., 2009).

²⁴ See, e.g., Case Concerning the Gabčíkovo-Nagymaros Project (Hung. v. Slov.), Judgment, 1997 I.C.J. Rep., p. 7 (Sep. 25); Case Concerning Pulp Mills on the River Uruguay (Arg. v. Uru.), Judgment, 2010 I.C.J. Rep., p. 14 (Apr. 20) (explain why this is relevant).

²⁵ *Id.* Gabčíkovo-Nagymaros Project, p. 7.

²⁶ Pulp Mills, *supra* note 24.

²⁷ Dispute over the Status and Use of the Waters of the Silala (Chile v. Bolivia), 2022 I.C.J. Rep., p. 614 (Dec. 1).

²⁸ U.N.G.A. International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, A/CN.4/L.702, July 18, 2006.

The *psychology of environmental law*—addressing the intersection of environmental law and law and psychology—has historically received limited attention but has recently garnered interest among legal scholars. In their 2021 book *The Psychology of Environmental Law*, Arden Rowell and Kenworthy Bilz introduced a psychological approach to understanding environmental law.²⁹ They argue that environmental law addresses environmental injuries, possess three psychologically distinctive qualities: diffusion, complexity, and nonhuman impact, all of which interact with human psychology.³⁰ For example, different sources of pollution might trigger varying human psychological reactions. Pollutants that are familiar, natural, and locally associated may provoke less attention and concern compared to novel or artificial pollutants—even when the measurable harm from both types of pollution is identical.³¹

Psychological insights such as these can offer descriptive, prescriptive, and normative implications for the management of environmental harm through legal mechanisms.³² Thus far, this research has primarily focused on domestic legal applications, although its focus on environmental injury means potential applicability to environmental injuries that cross international borders.³³ Given the nascent stage of the field, central questions are still emerging, and these include inquiries into whether law can serve as a tool to mitigate bias, the interplay between the psychology of environmental law, and the generalizability of psychological research when applied to non-Western contexts.³⁴

²⁹ See generally, ARDEN ROWELL & KENWORTHY BILZ, *THE PSYCHOLOGY OF ENVIRONMENTAL LAW* (2021).

³⁰ *Id.* p. 13.

³¹ *Id.* pp. 170-3.

³² *Id.* p. 5.

³³ Arden Rowell et al., *Environmental Law and Psychology*, in *THE RESEARCH HANDBOOK IN LAW AND PSYCHOLOGY* (forthcoming 2024).

³⁴ Rowell & Bilz, *supra* note 29, pp. 85 & 118.

The area of the *psychology of international law*—at the intersection of law and psychology and international law—has also recently emerged as a focal point of scholarly investigation. Employing a psychological lens, it seeks to shed light on the complexity of international law, such as understanding how a state leader perceives international legal issues or how to conclude a treaty that binds contracting parties. Scholars like Anne van Aaken,³⁵ Tomer Broude,³⁶ Jean Galbraith,³⁷ and Rose McDermott³⁸ explore how insights from psychological and behavioral research on individuals can be extrapolated to the realm of states. Given that states are abstract entities guided by individuals, a central question arises: how and to what extent can the motivations, emotions, and cognitive processes of individuals be applied to inform “state” decision-making and judgment?

The premise of this dissertation is that the intersection of all of these fields—the *psychology of IEL*—can be illuminated by insights from each of these areas. However, the dissertation also contends that the psychology of IEL confronts unique challenges that warrant independent understanding and evaluation, distinct from the related fields of IEL, environmental law and psychology, and the psychology of international law.

In particular, this dissertation argues that the psychology of IEL can be best understood by examining both its environmental character and its source in international law. Environmental legal scholars have long noted that environmental law is distinct from other areas of law because of the characteristics of environmental injury.³⁹ More recently, as highlighted above, scholars have also argued that characteristic injuries of environmental law possess psychological distinctiveness, and that understanding the psychology of environmental injury can enhance the efficiency of

³⁵ van Aaken & Broude, *supra* note 3.

³⁶ Tomer Broude, *Behavioral International Law*, 163 U. PA. L. REV. 1099 (2014).

³⁷ Galbraith, *supra* note 3.

³⁸ See generally, ROSE MCDERMOTT, *POLITICAL PSYCHOLOGY IN INTERNATIONAL RELATIONS* (2004).

³⁹ Lazarus, *supra* note 6.

domestic environmental law.⁴⁰ This theory has not yet, however, been extended or evaluated in the context of IEL.⁴¹

In order to gain a deeper understanding of the psychology underlying IEL, it is essential to delve into its subfields. This research contends that the psychology of IEL encompasses a combination of IEL, the psychology of environmental law, and international law. To fully grasp this concept and develop a comprehensive understanding of the psychology of IEL, further literature review is necessary.

In the upcoming section, this research will commence with a literature review focused on IEL. This review will introduce key aspects of IEL, including its definition, sources, scope, formation, and discussions on compliance.

1.2 THE SUBSTANCE AND DIALOGUE OF IEL

This part outlines the definition and methodology of IEL. The first part of this section spells out the definition of IEL, which, as part of international law, shares similar legal sources with international law. The detailed source of IEL will be discussed in the following. The second part of this section complements the current scholarly discussion on IEL. From an economic approach to a market approach to a psychology approach, this section attempts to delineate the potential for the psychological intervention in IEL.

Before the following discussion delves into the specifics of the definition and discussion of the IEL methodology, having a general understanding of IEL serves as valuable groundwork.

⁴⁰ Rowell & Bilz, *supra* note 29, p. 118.

⁴¹ Rowell et al., *supra* note 33.

IEL is a comparatively new area of law. The 1945 UN Charter did not include environmental protection in its stated purposes and principles.⁴² It was not until the 1970s that the United Nations Environment Programme (UNEP) was created as a dedicated body for environmental issues.⁴³ Due to rising awareness of the global dimension of environmental challenges and growing concerns about environmental issues in developed countries, international environmental law started to gain support in the late 1960s and early 1970s. During this period, nations engaged in negotiations aimed at resolving a range of environmental concerns, including oil pollution in the ocean, the trade of threatened species, disposal of hazardous waste at sea, preservation of wetlands, and the protection of World Heritage Sites. In these discussions, non-governmental organizations (NGOs) and international organizations both had important roles to play. The UN 1972 Stockholm Conference on the Human Environment was among the first of several significant conferences,⁴⁴ which also included the 2002 Johannesburg World Summit on Sustainable Development⁴⁵ and the 1992 Rio Conference on Environment and Development.⁴⁶ The UNEP, which has its headquarters in Nairobi, was established as the first global environmental entity following the Stockholm Conference.⁴⁷

Although IEL is a relatively young field within international law, it stands out from other areas of international law due to its specific focus on addressing transboundary environmental

⁴² See generally, Charter of the United Nations, 59 Stat. 1031, June 26, 1945.

⁴³ Donald Kaniaru, *The Development of the Concept of Sustainable Development and the Birth of UNEP*, in INTERNATIONAL ENVIRONMENTAL LAW—MAKING AND DIPLOMACY 17 (Tuomas Kuokkanen et al., eds., 2015).

⁴⁴ United Nations, United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm, at <https://www.un.org/en/conferences/environment/stockholm1972>.

⁴⁵ United Nations, World Summit on Sustainable Development, 26 August-4 September 2002, Johannesburg, at <https://www.un.org/en/conferences/environment/johannesburg2002>.

⁴⁶ United Nations, United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992, at <https://www.un.org/en/conferences/environment/rio1992>.

⁴⁷ Daniel Bodasky, Jutta Brunnée & Ellen Hey, *International Environmental Law: Mapping the Field*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 4 (Daniel Bodasny et al., eds., 2008).

harm.⁴⁸ This focus has several important implications, as outlined by Daniel Bodansky, Jutta Brunnée, and Ellen Hey. Firstly, transboundary issues in IEL often stem from private actions, rather than solely from state activities, presenting a challenge as IEL must regulate private actors alongside state entities.⁴⁹ For instance, activities such as air pollution, sewage discharge, and endangered species protection are frequently associated with business or economic endeavors.⁵⁰ Secondly, IEL is closely intertwined with technological advancements, as transboundary environmental harm, such as climate change and ozone depletion, is closely tied to technological developments, such as the emission of chlorofluorocarbons (CFCs) and greenhouse gases.⁵¹

Thirdly, transboundary environmental harm is characterized by uncertainty stemming from complex cause-and-effect relationships, necessitating careful navigation within the legal framework of IEL to ensure effective governance. Fourthly, transboundary environmental harm is dynamic, with intricate and constantly evolving connections between causes and effects,⁵² demanding flexibility in IEL governance to address the changing nature of environmental challenges.⁵³ Lastly, transboundary environmental harm in IEL is not only connected in terms of cause and effect but also involves historical aspects.⁵⁴ Environmental problems often manifest years or decades after their initial causes, requiring IEL to address historical injustices or reconcile

⁴⁸ *Id.*, pp. 7-8.

⁴⁹ Jesse Medlong et al., *Nonstate Actors in International Environmental Law*, 37 NATURAL RESOURCES & ENVIRONMENT, 41 (2023).

⁵⁰ Nwala Paul, *Legal Challenges of International Environmental Law Enforcement on transnational Boundary Pollution*, 21 ARTS & SOCIAL SCIENCE RESEARCH 25 (2022).

⁵¹ William Brune, *The Ozone Story: A Model for Addressing Climate Change?*, 71 BULLETIN OF THE ATOMIC SCIENTISTS, 75 (2015).

⁵² Michael Mason, *The Governance of Transnational Environmental Harm: Addressing New Modes of Accountability/Responsibility*, 8 GLOBAL ENVTL POLITICS, 8 (2008).

⁵³ Rakhyun Kim & Brendan Mackey, *International Environmental Law as a Complex Adaptive System*, 14 INT'L ENVTL AGREEMENTS: POLITICS, L. & ECONOMICS, 5 (2013).

⁵⁴ Kal Raustiala, *The "Participatory Revolution" in International Environmental Law*, 21 HARV. ENVTL L. REV. 537 (1997).

issues related to wealth and poverty within its treaties.⁵⁵ These five features highlight the unique nature of IEL within international law, showcasing both its challenges and the complexities involved in formation, negotiation, and compliance processes.⁵⁶

With all the distinctions, IEL is a group of international law that focuses on the governance of transboundary environmental harm.⁵⁷ The term "transboundary environmental harm " refers to damages incurred in the territory or jurisdiction of another state instead of the one of origin.⁵⁸ Traditionally, IEL addresses interactions between states or state-like entities in managing transboundary environmental harm. IEL is the law that is agreed and complied by states and that regulates the relationship between states in the international community and addresses the problem of transboundary environmental harm governance.⁵⁹ This is different, to some extent, from transnational environmental law (TEL). Transnational environmental law, though also focusing on transboundary environmental harm governance, involves actors other than states, including non-governmental organizations, individuals, activists, etc. It encompasses national laws that regulate cross-border environmental matters as well.⁶⁰ Therefore, TEL overlaps with international law but extends its jurisdiction to national jurisdiction and non-state actors.

However, the development of IEL demonstrates the ambiguity between traditional IEL and TEL. The evolving international legal framework exhibits three key characteristics that signify

⁵⁵ Louis Kotzé, *International Environmental Law and the Anthropocene's Energy Dilemma*, 35 ENVTL & PLANNING L. J., 437 (2019).

⁵⁶ Daniel Bodasky, Jutta Brunné & Ellen Hey, *supra* note 47, pp. 7-8.

⁵⁷ Lavanya Rajamani & Jacqueline Peel, *Reflections on a Decade of Change in International Environmental Law*, 10 CAMBRIDGE INT'L L. J., 6 (2021).

⁵⁸ UN International Law Commission, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries, A/56/10 (2001), art. 2(c).

⁵⁹ Günther Handl, *International Accountability for Transboundary Environmental Harm Revisited: What Role for "State Liability"?*, 37 ENVTL. POL'Y & L. 116 (2007).

⁶⁰ VEERLE HEYVAERT, TRANSNATIONAL ENVIRONMENTAL REGULATION AND GOVERNANCE: PURPOSE, STRATEGIES AND PRINCIPLES 1-17 (2019).

significant shifts in the global system: the integration of public and private international law, reflecting the growing influence of the private sector; the increasing prevalence of nonbinding legal instruments, signaling the broaden scope of issues in international negotiations involving non-state actors; and the convergence of international and domestic law, highlighting the interconnectedness and globalization of the world.⁶¹ This expansion sees public international law encroaching into areas traditionally governed by private international law, while private international law now addresses matters once deemed primarily governmental responsibilities.⁶²

In the domain of international environmental law, a pivotal development for the future lies in the evolving interplay between intergovernmental environmental law and transnational environmental law, primarily shaped by entities like the International Standards Organization⁶³ and the private sector.

This study primarily concentrates on traditional IEL. Although TEL, akin to IEL, centers on addressing transboundary environmental damage, it is anticipated future investigations will explore the connections between them. However, for the scope of this dissertation, the focus begins with the intersection of international law, leaving the exploration of TEL for subsequent research. TEL involves the application of domestic or supranational laws (such as European Union regulations) and has emerged as a governance tool due to the globalization of economic and social interactions.⁶⁴ In essence, TEL does not fall neatly within the traditional category of IEL, which centers on state-centered approaches to addressing transboundary environmental harm governance. The aim of this research is to explore the role of psychology in IEL; thus, it focuses

⁶¹ Paul Schiff Berman, *From International law to Law and Globalization*, 43 COLUM. J. TRANSNAT'L L. 485 (2005).

⁶² Mark Janis, *Individuals as Subjects of International Law*, 17 CORNELL INT'L L. J. 61 (1984).

⁶³ Edith Brown Weiss, *The Emerging Structure of International Environmental Law*, in THE GLOBAL ENVIRONMENT 60-78 (Norman Vig & Regina Axelrod eds., 1999).

⁶⁴ HEYVAERT, *supra* note 60, p. 53.

solely on traditional IEL. Discussions about other aspects of TEL may arise in the future, but they are not within the scope of this research.

The ongoing discussion lies at the definition of IEL, which is an abstract concept that needs further definition before we delve into further chapters concerning the psychology of IEL.

1.2.1 Sources of IEL

To enhance the comprehension of IEL, it is beneficial to provide a description of what constitutes IEL, specifically focusing on the legal sources that define IEL. The sources of IEL present untapped potential for exploring psychological aspects that merit further discussion. The definition of international law source refers to where the binding source is. Yet due to the decentralization of international law, no superior institution has the power to render such conclusion. The sources of international law are various. The most common and recognized source of international law comes from Article 38 of the Statue of International Court of Justice (ICJ).⁶⁵ Article 38 offers legal source for the ICJ to determine a case at issue, and these descriptions are later considered the categorization of the source of international law.⁶⁶

Five categories of documents are regarded as fundamental sources of international law, including IEL. These five sources include: 1) treaties and conventions; 2) customary international law; 3) general principles of law; 4) judicial decisions; and 5) opinions from highly qualified scholars.⁶⁷ The first three are considered primary sources of international law while the latter two serve as the supplementary means for determining legal norms.⁶⁸ The paragraph below introduces each of these sources. While all of these sources can be important, this dissertation focuses on the

⁶⁵ Statue of the International Court of Justice art. 38, Oct. 24, 1945, 188 U.N.T.S. 137.

⁶⁶ Christopher Greenwood, *Source of International Law: An Introduction*, United Nations Treaty Collection (2008), at https://legal.un.org/avl/pdf/ls/greenwood_outline.pdf.

⁶⁷ *Supra* note 65.

⁶⁸ *Id.*, art. 38 1(d).

formation of, negotiation of, and compliance with the treaties and conventions that form the primary source of IEL.

Treaty and Convention

While the precise definition of a treaty may vary, scholars generally agree that criteria of a treaty incorporate: 1) written form; 2) international agreement; 3) between states; and 4) subject to international law.⁶⁹ Article 38 of the ICJ Statute, for example, defines an international treaty as “international conventions, whether general or particular, establishing rules expressly recognized by the contesting states.”⁷⁰ Similarly, the 1969 Vienna Convention on the Law of Treaties (VCLT) defines a treaty as “an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation.”⁷¹

An international treaty is thus commonly understood as a formal written accord explicitly endorsed by states, establishing international rights and obligations. This definition applies equally to international environmental treaties, which are agreements ratified by states to manage and mitigate transboundary environmental harm. There are several famous examples of international environmental treaties. The United Nations Framework Convention on Climate Change (UNFCCC), for example, is the structural convention that addresses the global climate change.⁷² Meanwhile, both the Kyoto Protocol and the substitutive Paris Agreement stand as annex treaties under the framework of UNFCCC.⁷³ These three documents are international treaties that bind

⁶⁹ JAN KLABBERS, THE CONCEPT OF TREATY IN INTERNATIONAL LAW 37-55 (1996).

⁷⁰ *Supra* note 65, art. 38 1(a).

⁷¹ Vienna Convention on the Law of Treaties art. 2(1)(a), May 23, 1969, 1155 U.N.T.S. 331.

⁷² United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 30822.

⁷³ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 30820; Paris Agreement under the United Nations Framework Convention on Climate Change, Dec. 12, 2015, 3156 U.N.T.S. 54113.

contracting parties, yet the extent of their binding force and substantive obligations depend on specific language and context within each treaty.

The legal validity of a treaty originates from the consent of states, a concept that has psychological significance. Without voluntary consent or adherence, a treaty holds no binding authority over those states that have not signed and ratified it – unless the provisions of such a treaty may be found to constitute customary international law.⁷⁴ Due to the decentralized structure of international law, there exist no mechanisms in place to compel states into agreement or compliance. Thus, the consent of states greatly influences the binding nature of international law, a trait further echoed in the criteria employed to assess treaties.⁷⁵

Another significant aspect to consider is the distinction between treaties and soft law. Soft law includes non-binding instruments, guidelines, instruments, or standards that lack legally binding obligations but nonetheless wield significant influence over behavior and norm establishment.⁷⁶ Soft law instruments, unlike hard law instruments such as legally binding treaties and agreements, are frequently employed to establish norms, foster collaboration, and guide methodologies across diverse fields including environmental protection, human rights, and international relations. While soft law lacks the enforceability of hard law, it can nonetheless exert significant moral, political, and practical influence, ultimately resulting in voluntary adherence to and the evolution of customary practices.⁷⁷ In essence, while states may consent to specific documents, the precise language and context ultimately determine the extent of their legal

⁷⁴ KLABBERS, *supra* note 69 pp. 72-5.

⁷⁵ CARMEN PAVEL, *LAW BEYOND THE STATE: DYNAMIC COORDINATION, STATE CONSENT, AND BINDING INTERNATIONAL LAW* 177 (2021).

⁷⁶ Andrew Guzman & Timothy Meyer, *International Soft Law*, 2 J. LEG. ANALYSIS, 171 (2010).

⁷⁷ Alan Boyle, *Soft Law in International Law-making*, in *INTERNATIONAL LAW* 118-128 (Malcom Evans ed., 2014).

obligations. Despite not possessing the same level of binding authority as treaties, soft law still contributes to shaping the international legal framework.

Because domains in IEL are diverse, they sometimes may conflict—a phenomenon known as fragmentation.⁷⁸ For example, both the Convention on Long-Range Transboundary Air Pollution and the Montreal Protocol govern substances that contribute to the ozone depletion, demonstrating the decentralized structure of international environmental law. Despite potential competition or overlaps in goals, these treaties function concurrently and independently, with neither considered subordinate to the other. Compliance with one treaty obligation cannot excuse non-compliance with another treaty obligation.⁷⁹

Customary International Law

Customary international law is an “international custom, as evidence of a general practice accepted as law.”⁸⁰ Customary international law encompasses a corpus of legal guidelines and precepts that originate from regular state practices and that are generally acknowledged as binding by the international community. These rules and norms evolve over time through the repeated actions of states in specific areas of international relations. Regardless of whether a state has explicitly consented to a treaty or adheres to these principles, customary international law is regarded as binding for all states.⁸¹

Two primary criteria are essential for the formation of customary international law: state practice and *opinio juris*. Customary international law is typically defined as a "general and

⁷⁸ U.N.G.A. International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, A/CN.4/L.702, July 18, 2006.

⁷⁹ Thomas Prehi Botchway, *The Balanced Obligation and the Basis for Compliance in International Law: Reflection on the Question of International Obligation*, 12 J. POL. & L. 23 (2019).

⁸⁰ *Supra* note 65, art. 38(1)(b).

⁸¹ MALCOM SHAW, INTERNATIONAL LAW 51, 53 (2017).

consistent practice of states followed by them from a sense of legal obligation."⁸² For customary international law to be established, there must be a consistent and widespread practice observed by nations. Additionally, states must participate in this practice due to a belief in their legal obligation to do so. This second criterion, commonly known as *opinio juris*, forms the core concept of customary international law.⁸³ *Opinio juris* pertains to the rationale behind a state's adherence to a consistent pattern of behavior, often described as the "psychological" aspect of customary international law.⁸⁴ In other words, establishing customary international law necessitates both objective practices and subjective perceptions and beliefs.

A prominent example of customary international law is the prohibition of the use of force. The ICJ has ruled that the prohibition of the use of force in Article 2(4) of UN Charter is customary international law.⁸⁵ Additionally, the Court offered that it is widely acknowledged that during peacetime, states have the right to navigate their warships through straits used for international navigation between two parts of the high seas without prior authorization from a coastal state, provided the passage is innocent. Unless specified differently in an international treaty, a coastal state does not have the authority to prohibit such passage through straits during peacetime.⁸⁶

Arguably, some scholars contend that the precautionary principle is also part of customary international law in transboundary environmental harm governance.⁸⁷ The precautionary principle states that action should not be delayed by a lack of complete scientific certainty when there is a

⁸² Restatement (Third) of the Foreign Relations Law of the United States § 102(2) (ALI 1987).

⁸³ Jack Goldsmith & Eric Posner, *A Theory of Customary International Law*, 66 U. CHI. L. REV. 1113, 1116 (1999).

⁸⁴ IAN BROWNLIE, *PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 7-9 (1990); ANTHONY A. D'AMATO, *THE CONCEPT OF CUSTOM IN INTERNATIONAL LAW* 47-55, 66-73 (1971).

⁸⁵ Christine Gray, *The ICJ and the Use of Force*, in *THE DEVELOPMENT OF INTERNATIONAL LAW BY THE INTERNATIONAL COURT OF JUSTICE* 236-261 (Christian Tams & James Sloan eds., 2013).

⁸⁶ *Corfu Channel case*, Judgment, 1949, I.C.J. Rep. p. 4, at 28 (Apr. 9).

⁸⁷ James Cameron & Juli Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 B.C. INT'L & COMP. L. REV. 1, 20-21 (1991).

risk of significant or irreversible environmental harm. The International Tribunal for the Law of the Sea (ITLOS) has recognized the customary nature of the precautionary principle, as evident in its decision of the New Zealand and Australia in the Bluefin Tuna Case.⁸⁸

Customary international law can become codified as an international treaty. For example, the environmental impact assessment, originally considered a customary international law was later codified in treaties.⁸⁹ In the Pulp Mill case, the court claimed that as stated in Article 41(a) of the Statute of the River Uruguay, the duty to safeguard and maintain shall be interpreted in accordance with a recent practice that has acquired general recognition among states. To summarize, the environmental impact assessment in Statute of the River Uruguay is part of customary international law. An environmental impact assessment is now required where there is a possibility that proposed industrial operations might seriously affect a shared resource in a transboundary context, since this practice has become part of customary international law.⁹⁰

General Principles of Law

In international law, general principles of law refer to fundamental legal concepts that are generally accepted and implemented across numerous legal systems. These concepts are not specific to any treaty or convention but rather stem from shared legal traditions, court decisions, and legal literature. General legal principles provide a core framework for international legal norms and are frequently used to bridge gaps in international treaties or to govern the interpretation and implementation of international law. General principles of law include equality, good faith,

⁸⁸ Southern Bluefin Tuna Cases (N.Z. v. Japan, Austl. v. Japan), Provisional Measures, para. 89, INT'L TRIB. L. OF THE SEA, <http://www.itlos.org> (last visited Mar. 2, 2011); Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area: Advisory Opinion, 132-33, INT'L TRIB. L. OF THE SEA.

⁸⁹ Alan Boyle, *Developments in International Law of EIA and Their Relation to the Espoo Convention*, at https://unece.org/fileadmin/DAM/env/eia/documents/mop5/Seminar_Boyle.pdf.

⁹⁰ Pulp Mills *supra* note 24, para. 204.

nondiscrimination, and due process.⁹¹ The ICJ Statute also provides general principles of law, which are “the general principles of law recognized by civilized nations.”⁹²

Examples of general principles of law are diverse. One notable instance is encapsulated in the VCLT Article 26, *pacta sunt servanda*,⁹³ which asserts that treaties must be executed in good faith by parties and in accordance with their terms.⁹⁴ This principle serves as a cornerstone of international treaty law. Another illustrative example can be found in United Nations Charter,⁹⁵ where the principle of peaceful settlement of disputes holds significant recognition and acceptance within international law.⁹⁶ This principle emphasizes that states are encouraged to resolve their disputes through peaceful means such as negotiation, mediation, arbitration or other international judicial tribunals. The use of force or the resort to war is deemed unacceptable under current international law.⁹⁷

In the context of IEL, certain principles are considered general principles of law and integrated throughout the IEL legal framework. One principle is that of the good neighbor principle. The idea of good neighborliness requires countries to refrain from hurting the environment. It is intrinsically linked to the need to cooperate in investigating, recognizing, and preventing environmental harm. Many international environmental agreements include provisions requiring cooperation in the exchange of scientific, technological, socioeconomic, and commercial

⁹¹ JAMES CRAWFORD, *BROWNIE’S PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 31-5 (2019).

⁹² *Supra* note 65, art. 38 1(c).

⁹³ BIN CHENG, *GENERAL PRINCIPLES OF LAW: AS APPLIED BY INTERNATIONAL COURTS AND TRIBUNALS* 112 (1987).

⁹⁴ *Supra* note 71, art. 26.

⁹⁵ *Supra* note 42, art. 2.

⁹⁶ Tymur Korotkyi, *Principle of Peaceful Settlement of Disputes as a General Principle of Law*, 2 EURO. POLITICAL & L. DISCOURSE, 376 (2015).

⁹⁷ W. Michael Reisman, *Criteria for the Lawful Use of Force in International Law*, 10 YALE J. INT’L L., 279 (1984).

information. However, this cooperative requirement is contingent on local concerns, such as patent protection, and is not absolute.⁹⁸

Another important general principle of law under IEL is the principle of common but differentiated responsibility.⁹⁹ The preserving of the environment poses a global challenge for governments worldwide. Given different economic courses and shared responsibility for environmental degradation, certain countries may be required to carry a greater burden in protecting and preserving environmental quality. This principle underscores the necessity for governments to meet international environmental obligations in a fair and consistent manner, acknowledging their collective yet distinct responsibilities and capacities. This notion was included in the Rio Declaration as principles four and seven.¹⁰⁰ The Kyoto Protocol further embodies the principle of shared but differentiated responsibility, with developed countries bearing a higher share of the responsibility for reducing greenhouse gas emissions.¹⁰¹

While general principles of law are an important source of international law, their binding authority is lower than that of treaties and customary international law. Additionally, they provide additional opportunities for interpretation. One explanation for this lies in the fact that these foundational legal principles may sometimes feature confusing phrasing that makes them difficult to enforce directly from their conceptualization.¹⁰² Consequently, a formal translation into a treaty or agreement is often required to confer binding status upon the principle. The preceding examples,

⁹⁸ Max Valverde Soto, *General Principles of International Environmental Law*, 2 ILSA J. INT'L & COMP. L., 193, 197 (1996).

⁹⁹ *Id.* at 205.

¹⁰⁰ U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), annex I (Aug. 12, 1992), at 4 & 7.

¹⁰¹ Paul Harris, *Common but Differentiated Responsibility: The Kyoto Protocol and United States Policy*, 7 NYU ENVTL L. J., 27 (1999).

¹⁰² Joseph Raz, *Legal Principles and the Limits of Law*, 81 YALE L. J., 823 (1971).

such as the Kyoto Protocol and the UN Charter, exemplify this predicament. As a result, in most practical scenarios, broad legal principles are utilized to illustrate existing standards.¹⁰³

Judicial Decisions and Teachings of Highly Qualified Scholars

The definition of judicial decision and teaching of highly qualified scholars refers to, according to the ICJ Statute, “judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.”¹⁰⁴ Based on the provision, these two types of documents complement the primary source of international law, offering evidence of existing international laws; However, they do not inherently impose binding obligations. States cannot invoke them to pursue remedies in international tribunals.

Judicial decisions often serve as evidence in interpreting primary international particularly within ICJ. The court argued in the Pulp Mill case that the interpretation of the duty to safeguard and maintain, as stipulated in Article 41(a) of the Statute of the River Uruguay, should be guided by a recently adopted practice that has gained widespread recognition among states. In situations where proposed industrial operations may have a significant impact on a shared resource across international borders, an environmental impact assessment is now mandatory, as this practice has become customary under general international law.¹⁰⁵ Similarly, the International Tribunal for the Law of the Sea (ITLOS) recognized the customary law character of the precautionary principle, evident in its ruling favoring New Zealand and Australia in the Bluefin Tuna Case.¹⁰⁶ These judicial pronouncements exemplify the dynamic interaction between international tribunals and

¹⁰³ CHENG, *supra* note 93, 376.

¹⁰⁴ *Supra* note 65, art. 38 1(d).

¹⁰⁵ Pulp Mills *supra* note 24, para. 204.

¹⁰⁶ Southern Bluefin Tuna Cases, *supra* note 88; Advisory Opinion, *supra* note 88.

primary sources of international law. International scholars frequently reference these cases when explaining the legal status of customary international law.¹⁰⁷

Prominent legal scholars, including ICJ judges like James Crawford, Christopher Greenwood, Hisashi Owada, and Thomas Buergenthal, as well as international legal scholars like Sean Murphy, Martti Koskenniemi, and Malcom Shaw, are frequently referenced in scholarly discourse. However, while the ICJ itself rarely rely on these scholars' works for its jurisprudence, their insights significantly contribute to scholarly discussions, primarily within academic forums such as journals and conferences. Their insights into international law are undoubtedly valuable for the advancement of international legal principles.

1.2.2 Academic Discourse in IEL

Following the introduction to the sources of IEL, the subsequent section delves into the academic discourse surrounding IEL. IEL is primarily geared towards addressing transboundary environmental harm, a complex issue that presents a multitude of challenges and topics for discussion. In the forthcoming discussion, this study aims to integrate scholarly dialogues concerning the compliance aspects of IEL. It is essential to understand how and why states govern transboundary environmental harm governance to effectively incorporate psychological perspectives. Presently, scholarly discourse either entirely lacks discussions on the psychology of IEL or only partially covers them. This academic gap presents an opportunity for this research to

¹⁰⁷ For example, Yoshifumi Tanaka, *The Requirement of Urgency in the Jurisprudence of ITLOS concerning Provisional Measure*, in INTERPRETATIONS OF THE UNITED NATIONS CONVENTION ON THE LAW OF SEA BY INTERNATIONAL COURTS AND TRIBUNALS 107-204 (Angela del Vecchio & Roberto Virzo eds., 2019); Howard Schiffman, *The Precautionary Approach at the International Tribunal for the Law of the Sea: The Southern Bluefin Tuna Cases*, 5 INT'L J. GLOBAL ENVTL ISSUES, 78 (2005); Melissa Kor, *Provisional Measures and the Facilitative Role of ITLOS*, 22 U. C. DUBLIN L. REV. 1 (2022).

incorporate a psychological approach, offering a distinct and insightful viewpoint on the evolution of IEL.

International law stands out among various legal frameworks because it bears on the relationships between states and obligations they entail. Perhaps understandably, therefore, traditional approaches to international law have predominantly centered on how states make decisions,¹⁰⁸ making them inherently “state-based.” However, ensuring compliance with international law poses challenges, particularly due to the decentralized nature of international organizations.¹⁰⁹ As of now, no effective enforcement mechanism applies across all spheres of international law. Thus, how to increase the compliance of international law becomes an important area of inquiry for international scholars.

While states are clearly important to international law, exclusive focus on the state decision making may obscure how decisions made by actors other than states can also affect how international law functions, and even potentially how international law is made. An emerging approach to international law exemplified by Anu Bradford, proposes that international law sometimes operate through the mechanism of market power rather than solely relying on state action, implementation, or obligation.¹¹⁰ This “market-based approach” suggests that markets can be particularly important in influencing compliance with international laws—even in cases where states fail to acknowledge or enforce their obligations.

A broader approach to international law might also encompass what this research terms an “individual-based approach” to international law. This approach acknowledges that individual

¹⁰⁸ Andrew Guzman, *A Compliance-Based Theory of International Law*, 90 CALIF L. REV., 1823 (2002).

¹⁰⁹ Beth Simmons, *International Law and State Behavior: Commitment and Compliance in International Monetary Affairs*, 94 AM. POLITICAL SCIENCE REV., 819 (2000).

¹¹⁰ BRADFORD, *supra* note 18, 25-40.

decision making can significantly impact international law.¹¹¹ States are composed of individuals, who are subject to various behavioral, cognitive, psychological, and social constraints and pressures; understanding these constraints and pressures may aid in predicting and explaining how international laws are perceived, internalized, evaluated, and (sometimes) complied with—even in the absence of state enforcement.¹¹² It may also help inform the behaviors of individuals who act on behalf of the state.

This section expands on the compliance discussion in IEL, addressing two key aspects. First, it outlines the traditional approach to compliance with international law. Following, it introduces the “individual-focus approach” to international law compliance, which encompasses three main components: law and economic, behavioral Law approach, and law and psychology method.

Traditional Viewpoint of IEL Compliance

International law refers to the legal framework of states, regulating the interaction and cooperation between members in the international society.¹¹³ Compliance of international law depends on the voluntariness of international members given no supreme or superior authority other than states.¹¹⁴ International laws become effective when there is consensus among states. Thus, the supreme authority under international law is the willingness of the state. This phenomenon leads to the issue of how to enhance the compliance of international law.

The compliance with international law spans a spectrum, with one end relying on the incentives of states to fulfill their international obligations, and the other one involving

¹¹¹ ROBERT JERVIS, *HOW STATESMAN THINK, THE PSYCHOLOGY OF INTERNATIONAL POLITICS* 125 (2017).

¹¹² Anne van Aaken, *Behavioral International Law and Economics*, 55 HARV. INTL. L. J., 421 (2014).

¹¹³ Slaughter, *supra* note 10.

¹¹⁴ Beth Simmons, *Compliance with International Agreements*, 1 ANNUAL REV. OF POLITICAL SCIENCE, 75 (1998).

international institutions authorized by states to enforce these obligations.¹¹⁵ The former, known as primary compliance, prevails in international law. Upon entering into a treaty, states comply with the agreed obligations based on their willingness to comply. Various incentives drive states to comply with international law, with reputation being a significant factor. According to scholars of international politics, states adhere to international obligations to enhance their reputation in the international community.¹¹⁶ The concept of reputation varies from states to states, encompassing both self-interests and intangible credit.¹¹⁷

Furthermore, states consider the costs and benefits of complying with obligations. If the benefit of performing an obligation could outweigh the cost of non-compliance, states are more likely to comply.¹¹⁸ From a Law and Economics perspective, states act rationally and opt for the most advantageous course of action. Thus, if compliance yields benefits, states are inclined to comply with international obligations to maximize more benefits.

On the other end of the spectrum, states voluntarily agree to abide by decisions made by international organizations as a means of compliance.¹¹⁹ States confer their power to international organizations and promise to act in conformity with the obligation.¹²⁰ For example, article 94(2) of the Charter of the United Nations articulating the Security Council may address the non-compliance cases under the International Court of Justice.¹²¹ Similarly, cross-retaliation under the

¹¹⁵ Christina L. Davis, *The Political Logic of Dispute Settlement: Introduction to the Special Issue*, 10 THE REV. INT'L ORGANIZATION 107 (2015).

¹¹⁶ George W. Downs & Michael A. Jones, *Reputation, Compliance, and International Law*, 31 THE JOURNAL OF LEGAL STUDIES, 95 (2002).

¹¹⁷ *Id.*

¹¹⁸ Guzman, *supra* note 108.

¹¹⁹ Davis, *supra* note 115.

¹²⁰ Emilie M. Hafner-Burton et al., *Political Science Research on International Law: The State of the Field*, 106 AM. J. INT'L L., 47 (2012).

¹²¹ *Supra* note 42, art. 94 (2): "If any party to a case fails to perform the obligations incumbent upon it under a judgment rendered by the Court, the other party may have recourse to the Security Council, which may, if it deems necessary, make recommendations or decide upon measures to be taken to give effect to the judgment."

World Trade Organization also provides another avenue for enforcing trade-related violations.¹²² The International Tribunal for Law of the Seas stands as an enforcement mechanism for resolving maritime disputes. These international tribunals, from the League of Nations to the United Nations, have consistently been considered viable avenues for enforcing international law. Hundreds of cases brought before these tribunals have contributed to the development of international jurisprudence. While international tribunals play an important role in implementing and reviewing international law compliance, they cannot fully address the limitations of centralized international organizations.

States promise to comply international laws voluntarily. Conversely, states can choose not to abide by international laws as well. The willingness is like a coin with two sides, with compliance and non-compliance both depending on the discretion of states. This feature of compliance leads to the debate of the insufficiency of international law compliance given that no other power could override the sovereignty of states under international law.

Market power offers a unique perspective on the state-centric discourse surrounding international law. It has the potential to amplify the reach and impact of international laws even without direct state enforcement.¹²³ An example of this phenomenon is illustrated by Anu Bradford's analysis of the unilateral and extraterritorial application of EU regulations in the global society,¹²⁴ known as the Brussels effect. Importantly, the Brussels effect can manifest unintentionally, emerging from a set of market-driven conditions rather than the EU's deliberate efforts to export its regulations.¹²⁵

¹²² Understanding on Rules and Procedures Governing the Settlement of Disputes art. 22, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401.

¹²³ BRADFORD, *supra* note 18, pp. 25-35.

¹²⁴ *Id.* 99-131.

¹²⁵ *Id.* 1.

The Brussels effect shows how market power influences international law compliance. EU regulations can affect all products and production processes subject to them, provided they are destined for sale within the EU. According to Bradford, the Brussels effect extends across various domains, including competition, privacy, environmental protection, and health and food safety. However, this approach may have its limitations, particularly concerning the scope of regulation. Only products, services, and production processes falling within the purview of EU regulations can be subject to the Brussels effect; anything beyond this scope does not apply. The requirement of the Brussels effect also restrains the application. The market power, the strictness of the regulation, and the ideology of civilians control the formation of the Brussels effect. Thus, not every international law applies to this effect. Further observation is needed.

Individual-focused Approach

Although the development of international law is a state-centered system given how international law regulates the state and is agreed by states, however, actions of individuals attract the attention of the international society. After the World War II, international society realized that individual activities could contribute to mass atrocity crimes, and therefore, the inclusion of individual in the international law system was put into discussion.

Beginning with the London treaty, which established the Nuremburg Tribunal, international criminal law saw significant development, culminating in the codification of the International Criminal Court in 1998. This framework delineated four crimes—war crimes, crimes against humanity, genocide, and the crime of aggression—specifically targeting individual actions. Moreover, international law expanded its purview to illicit activities through instruments such as

the 2005 UN Convention against Corruption,¹²⁶ and endeavors such as the illegal drug trafficking.¹²⁷ Consequently, individual actions have become integral to ensuring compliance with international law.

The individual-based approach focuses on the nature of individual decision making and its role in compliance mechanisms. Although international law traditionally centers on states as primary actors, it is ultimately individuals within the state who make decisions. Departing from this traditional perspective, this summary provides three avenues that underscore the significance of individuals in international law compliance. First, this summary introduces the Behavioral Law and Economics approach, emphasizing the significance of individual decision-making process. Second, it incorporates the psychological approach to elucidate how individuals influence international law compliance. Last but not least, this paper illustrates the market power approach that broadens the application of international law compliance.

Law and Economic in IEL

With the focus on states, Goldsmith and Posner provide an economics model to explain the mechanism of cooperation and competition between states.¹²⁸ They reason that international law emerges from states acting rationally to maximize their interests based on their perceptions of the interests of other states and the distribution of state power.¹²⁹ By the state interest, it means the state's preferences regarding interactional outcomes.¹³⁰ Based on this premise, they argue that there are four possible models to explain the interaction of states: coincidence, coordination,

¹²⁶ United Nations Convention against Corruption, Oct. 31, 2003, 2349 U.N.T.S. 41.

¹²⁷ United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, Dec. 20, 1988, 1582 U.N.T.S. 95.

¹²⁸ See generally, GOLDSMITH & POSNER, *supra* note 13.

¹²⁹ *Id.* p. 3.

¹³⁰ *Id.* p. 6.

cooperation, and coercion.¹³¹ The coincidence refers to a pattern of behavior resulting from each state acting in its self-interest without considering the action of other states.¹³² The coordination involves two or more conflicting states collaborating to resolve a conflict.¹³³ A third possible explanation for the border is cooperation. Both states could benefit from the cooperation and refrain from breaching agreements.¹³⁴ And lastly, coercion occurs when a powerful state (or coalition of states with convergent interests) forces weaker states to engage in acts that are contrary to their interests.¹³⁵ In their book, the authors acknowledge that decision-making entities are individuals, yet they prioritize the interests of the state. They believed states interests are collective and identifiable via specific domestic institutions and evidence. State interests are consequentialist, meaning that the desired outcome may guide state actions.¹³⁶

However, they also agreed that individual leaders negotiate treaties and decide whether to comply with or breach them. Because the existence of a state and the state action ultimately depend on individuals' beliefs and actions, one could reject the assumption that states possess agency and assert that any theory about the behavior of states must be grounded in a theory of individual choice.¹³⁷ However, this does not alter the fundamental nature of decision-making; that is, individuals remain the root of decision-making processes.

This perspective extends to IEL, Scott Barrett argues that states are rational and self-interested entities driven to maximize their interests.¹³⁸ In Barrett's empirical study, he has

¹³¹ *Id.* p. 13

¹³² *Id.* p. 12

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.* p. 5.

¹³⁷ *Id.* p. 4.

¹³⁸ Scott Barrett, *An Economic Theory in International Environmental Law*, in *THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW* 234 (Daniel Bodansky et al. eds., 2012).

developed a theory of IEL, particularly focusing on treaty instruments, utilizing concepts from economics and game theory. He highlights the underlying incentive problem that necessitates states to practice mutual restraint and emphasizes the primary role of treaties in restructuring incentives. Treaties can adjust incentive through various means, and the most effective approach depends on the specific circumstances of the problem at hand. Barrett concludes that there is no universal solution for every environmental issue; rather, it depends on the normative end of the treaty.¹³⁹

Rational choice theory, or the law and economic approach, excludes the possible intervention from preferences, biases, and cognitions and assumes that individuals are rational enough to maximize their self-interests in every action. However, further research from behavioral law and economic finds out the “limited rationality” that exists in individuals’ decision-making processes.

Behavioral Approach in IEL

The legal compliance issue by individuals could be explained through the lens of Behavioral Law and Economics (BL&E). BL&E challenges the traditional rationale choice model in economics by incorporating the influence of heuristic reactions on individual decision-making processes. In essence, individuals do not always make rational decisions; heuristic reactions can significantly impact their choices. This perspective, articulated by Kahneman, reframed the rationale model of economic theories.¹⁴⁰ Jolls, Sunstein and Thaler applied this approach to the law and economics, providing that individuals have bounded rationality, willpower, and self-

¹³⁹ *Id.* p. 260.

¹⁴⁰ Daniel Kahneman & Vernon Smith, *Foundation of Behavioral and Experimental Economics*, 1 Nobel Prize in Economics Documents, 1 (2002).

interest, offering a fresh outlook on law and economics whereby heuristic thinking could affect legal compliance.¹⁴¹

The BL&E approach could shed light on individual compliance with international law. BL&E relates to individual decision-making processes, predicting and explaining how and whether individuals choose to comply with the law or not. This approach could also apply to international environmental law due to the subject matter in making decisions in international law still involving individuals.¹⁴² Moreover, BL&E can also shed light on group-decision-making processes.¹⁴³

However, there is a notable absence of further elaboration and application of BL&E principles to IEL. While scholarly discussions have hinted at potential opportunities within international law, the realm of transboundary environmental harm governance remains largely unexplored. BL&E, which merges economic and psychological perspectives, delineates the unique aspects of individual behavior, offering valuable insights for both international law and IEL. The absence of BL&E in IEL also highlights the academic gap between psychology and IEL, suggesting a need for further integration and exploration of these disciplines.

Current Psychological Observation on IEL

The field of study concerning the psychology of international law, which explores the interaction between psychology and international law, has recently gained significance as a subject of academic investigation. Despite the fact that psychological approach in international law is a

¹⁴¹ Christine Jolls, Cass Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, (1998).

¹⁴² van Aaken, *supra* note 112.

¹⁴³ *Id.* p. 436

relatively young area, several research projects have offered their viewpoints and argued for the potential for further psychological intervention in this conversation.

This section delves into the intersection of law and psychology within the realm of international law, covering various aspects from general introductions to specific areas like international criminal law, international economic law, and treaty design. Presently, research on psychology and international law is unorganized, often concentrating on specific and individual topics. Towards the conclusion of this section, the argument is made that adopting a structured perspective on the psychology of international law can enhance our comprehension in this field. However, prior to that, the potential for a psychological approach in international law is explored in the ensuing discussions.

The Potential of Psychology in IEL

The psychology of international law—at the intersection of law and psychology and international law—has also only recently emerged as an important area of scholarly inquiry. Scholars such as Anne van Aaken,¹⁴⁴ Tomer Broude,¹⁴⁵ Jean Galbraith,¹⁴⁶ and Rose McDermott¹⁴⁷ ask how psychological and behavioral research on individuals applies to states. This approach sheds light on many puzzles of international law (and IEL), such as inquiries of how a state leader perceives a dispute or how a treaty that binds more contracting parties can be concluded. States are abstract entities that are led by individuals,¹⁴⁸ so an open question is how and to what extent the motivation, emotion, and cognition of individuals can be applied to “state” decision-making

¹⁴⁴ van Aaken & Broude, *supra* note 3.

¹⁴⁵ Broude, *supra* note 36.

¹⁴⁶ Galbraith, *supra* note 3.

¹⁴⁷ See generally, MCDERMOTT, *supra* note 38.

¹⁴⁸ Andrew Moravcsik, *Taking Preferences Seriously: A Liberal Theory of International Politics*, 51 INTERNATIONAL ORGANIZATION, 513 (1997).

and judgment. The psychology in international law helps answer these questions and explain deviations from rational choice assumptions by using empirical evidence to provide a closer look into how policymakers actually behave.¹⁴⁹

A key finding in the psychology in international law is that states are not always rational.¹⁵⁰ This contrasts with rational choice theory in international law, which assumes that states are rational actors seeking to maximize their interests.¹⁵¹ Accordingly, the decision-making process of states relies solely on interest valuation under rational choice theory. The preferences and biases of individuals are not included in rational choice theory. However, state leaders are individuals who have preferences and perceptions that could be potential factors in decision-making.¹⁵² Received information and heuristic reactions alter an individual's state of mind, resulting in a person who is not always entirely rational.¹⁵³ Individuals' actions result in the behavior of states,¹⁵⁴ and research tells us that preference and bias may have an impact on individuals. Hence, understanding the psychology of individuals may illuminate the drafting, interpretation, application, and enforcement of international law.

Anne van Aaken and Tomer Broude referenced this psychological dialogue and offered an introduction to this scholarly debate. Scholarship in public international law has progressively incorporated more social science theories and methodologies. In their work, they outline important psychological perspectives while also emphasizing the limitations of applying psychology to international law and conducting experiments to explore the international law. Notwithstanding

¹⁴⁹ van Aaken & Broude, *supra* note 3, at 1227.

¹⁵⁰ ALEX MINTZ ET AL., BEYOND RATIONALITY: BEHAVIORAL POLITICAL SCIENCE IN THE 21ST CENTURY 45-64 (2022).

¹⁵¹ GOLDSMITH & POSNER, *supra* note 13, p. 5.

¹⁵² JERVIS, *supra* note 111, pp. 15-39.

¹⁵³ MINTZ ET AL., *supra* note 150 pp. 45-64.

¹⁵⁴ GOLDSMITH & POSNER, *supra* note 13, p. 4 (2005).

these challenges, they offer that behavioral research has yielded valuable insights that may significantly enhance our comprehension of international law.¹⁵⁵ Their contribution opens the door to a psychological discourse within international law. However, despite the effectiveness of cognitive research and behavioral economics in domestic legal contexts and their potential application in public international law, their potential ramifications have yet to be thoroughly studied.

Psychology in Particular International Law Discussion

Along with van Aaken and Broude, scholarly discussions have explored how psychology influences the legal dimension(s) of international laws. Tomer Broude and Inbar Levy discuss decision-making in international humanitarian law contexts, particularly in scenarios involving targeting and other operational decisions. Their focus lies on the individual level of decision-making, such as a military commander or legal counselor, and the interactions between these actors and international law.¹⁵⁶ Focusing on international "nudges" or low-cost, choice-preserving remedies to regulatory challenges, Doron Teichman and Eyal Zamir explore the application of behavioral legal theory to the international arena.¹⁵⁷ Using existing research, they explore repercussions for individuals failing to opt out of or into international treaties. Their work describes the effectiveness of "nudge" strategies such as deadlines, rankings, and goal setting in the context of international law and relations.¹⁵⁸ The potential for psychological biases in international adjudication and the implementation of international rules is of particular concern to Sergio Puig. Puig's research concentrates on international economic law, where he shows how "affiliation

¹⁵⁵ van Aaken & Tomer Broude, *supra* note 3.

¹⁵⁶ Tomer Broude & Inbar Levy, *Outcome Bias and Expertise in Investigations under International Humanitarian Law*, 30 EUR. J. INT'L L., 1303 (2019).

¹⁵⁷ EYAL ZAMIR & DORON TEICHMAN, BEHAVIORAL LAW AND ECONOMICS 423-5 (2018).

¹⁵⁸ Doron Teichman & Eyal Zamir, *Nudge Goes International*, 30 EUR. J. INT'L L., 1263 (2019).

effects" can influence the decisions of party-appointed arbitrators in international investment law and proposes the use of "blinding" appointments to counteract cognitive biases favoring the appointing party.¹⁵⁹

In Ford's article, he argues that a social psychology model better explains individuals' perceived legitimacy of international criminal tribunals.¹⁶⁰ The perceived legitimacy by the affected population is significant in determining the rightfulness of an international criminal tribunal. Ford suggests that the perceived legitimacy of affected population can be more effectively understood through a social psychological approach.¹⁶¹ He proposes using questionnaires answered by affected population to gauge their views on the indictment of the tribunal and their identification with different sides of the conflict.¹⁶² After the examination he conducted in his paper, Ford concludes this approach indeed offers a better explanation of the interaction between affected civilians and the indictment made by tribunals. He supports his argument by citing examples such as the International Criminal Tribunal for former Yugoslavia and the Khmer rouge Tribunal.¹⁶³ Later he furthers this approach by contending that this approach can be extended to other transitional justice reform mechanisms.¹⁶⁴ Employing this approach could align the establishment of a tribunal more closely with the thoughts of the affected population, thus facilitating better reconciliation between the affected population and the conflict. The social psychology model predicts that when an affected group identifies strongly with one side of a conflict and holds a dominant internal narrative absolving responsibilities for the conflict and any

¹⁵⁹ Sergio Puig, *Debiasing International Economic Law*, 30 EUR. J. INT'L L. 1339 (2019).

¹⁶⁰ Stuart Ford, *A Social Psychology Model of the Perceived Legitimacy of International Criminal Courts: Implications for the Success of Transitional Justice Mechanisms*, 45 VAND. J. TRANSNAT'L L. 405, 447 (2012).

¹⁶¹ *Id.*

¹⁶² *Id.* at 440-4.

¹⁶³ *Id.* at 448-52.

¹⁶⁴ *Id.* at 475-76.

ensuing crimes, indicting members of that group will cause the group to view the court negatively.¹⁶⁵ The psychology approach provides a window of opportunity for scholars to have a better understanding of the compliance to international law.

Sergio Puig argues that psychological biases could influence international economic law. In his study, he demonstrates three ways that hidden biases can influence international tax, trade, and investment issues. He proposes “debiasing tools” for international adjudication, prioritizing their role as information coordinators rather than solely focusing on correcting cognitive habits. These psychological biases may undermine trust in the dispute settlement system, making international economic law an appropriate setting to test interventions due to concerns about sovereignty and negotiated solutions.¹⁶⁶

From Jean Galbraith’s perspective, how treaty options are presented holds significant influence, which contradicts rational choice theory but aligns with findings in behavioral economics. This discovery carries significant implications for treaty formation theories, laws, procedures, and our understanding of state conduct.¹⁶⁷

The ongoing discussions on psychology in international legal discourse indicate promising prospects for the advancement of both international law and psychology. Through the lens of social science, we gain insights into international law concerning its creation, compliance, negotiation, and decision-making processes. States’ behavior in international law is subject to preferences and biases, offering a nuanced understanding of individual evaluations, perceptions, and preferences and informing appropriate actions within public international law. However, the current scholarly

¹⁶⁵ *Id.* at 440.

¹⁶⁶ Puig, *supra* note 159.

¹⁶⁷ Galbraith, *supra* note 3.

discussion lacks a deeper structural understanding. This study contends that international law possesses distinctive characteristics that might evoke individual psychological responses.

1.2.3 The Demand for a Structured Discussion on the Psychology of International Environmental Law

This research maintains that a structural psychological analysis can lead to a better understanding of IEL. The source and substance of IEL present numerous opportunities to incorporate psychological perspectives. Factors such as treaty consent and *opinio juris* in customary international law entail subjective psychological perceptions and valuations. Integrating a psychological approach into IEL could enhance academic comprehension of the state conduct under IEL and facilitate better development, negotiation, and compliance with IEL.

Opinio juris allows psychologists to observe state behavior through a new perspective. A state's subjective belief or perception of an international legal norm is influenced by various factors such as information processing, valuation, perception, cognition, preferences, and biases towards its own group or the international community. Psychology can provide a deeper understanding of these dynamics compared to other disciplines, along with its empirical research and findings.

While the existing scholarly discourse touches on certain aspects of psychological discussions, it lacks organization. However, such lack of organization presents an opportunity for this research to contribute by addressing the gap. The research asserts IEL encompasses interconnected characteristics that are psychologically relevant. Current studies tend to concentrate on specific facets, but with the structural framework proposed in this research, a more thorough and comprehensive comprehension of the psychological phenomena within IEL can be achieved.

To initiate this structured dialogue, let us delve into the content of IEL. The normative objective of IEL aims to tackle environmental effects that transcend national boundaries.¹⁶⁸ Consequently, this discussion focuses on two pivotal aspects: *environmental impact* and *transboundary governance*. These two aspects are directly related to environmental law and international law, respectively. These realms form the essence of IEL and hold psychological significance. This research argues that the psychology of IEL should align with the normative goals of IEL.

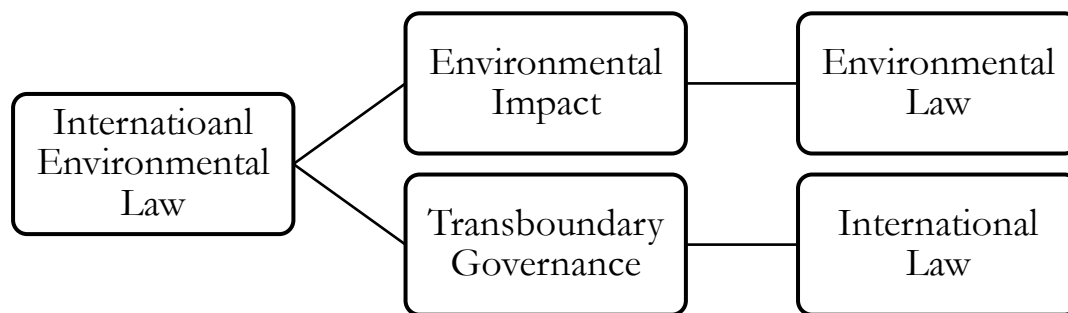


Figure 2: The Criteria of International Environmental Law

The psychological relevance of the environmental impact is introduced and analyzed by Arden Rowell and Kenworthy Bilz in their book “The Psychology of Environmental Law.”¹⁶⁹ In the next section, this research continues the psychological discussion in environmental impact and expand their analysis to encompass matters concerning transboundary governance. Therefore, this dissertation suggests the inclusion of the psychology of international law.

Preliminary research at the intersection of international law and psychology has revealed several opportunities to apply concepts from both fields to international legal contexts. While they have provided an overview of potential applications of psychological research in international law,

¹⁶⁸ Oscar Schachter, *The Emergence of International Environmental Law*, 44 J. INT’L AFFAIRS, 457 (1991).

¹⁶⁹ See generally, Rowell & Bilz, *supra* note 29.

they have not yet approached the topic systematically. The aim of this dissertation is to present a systematic approach to understanding issues related to international law that can benefit from insights from both legal and psychological perspectives.

This dissertation delves into the fundamental aspects of the psychology of international law, laying a crucial groundwork for understanding the psychology of international environmental law (IEL). International legal scholars have been exploring the use of psychological perspectives in international law as a novel approach, viewing it as a potential alternative viewpoint in the development of international law. Research that arises from such incorporation of a psychological perspective adds depth to international law and paves the way for potential advancements in international legal formation and compliance decisions. However, there has not yet existed a systematic approach to integrating psychology into international law and IEL. This chapter contends that the nature and source of IEL presents an opportunity for psychological intervention. Building upon this understanding, the chapter develops a systematic and structured framework for incorporating psychology into the study of IEL.

A structured framework for understanding the psychology of IEL is crucial for several reasons. Firstly, it provides a systematic and organized approach to grasp the psychological factors that inform decision-making and behavior under international legal contexts. This framework enables researchers and practitioners to categorize and analyze various psychological aspects such as cognition, motivation, emotion, and social context in a coherent manner.

The nature of IEL is characterized by voluntariness, fragmentation, political borders, diffusion, complexity and non-human characteristics. These features are interconnected and relevant to each other. For instance, when one discusses psychological reactions resulting from the fragmentation of international law, it is challenging to separate them from the voluntariness of the

state willingness. Psychological responses of states within IEL are intricately linked to state leaders' perceptions and preferences. Simply focusing on one aspect of international law might overlook other pertinent factors, leading to an incomplete grasp of the psychology of international law. Therefore, a structured framework on the psychology of IEL allows scholars to comprehend psychological phenomena within IEL from a more comprehensive perspective.

Secondly, a structured framework also aids in pinpointing gaps and areas that require further research at the intersection of IEL and psychology. It helps clarify the linkages between psychological theories and legal principles, encouraging interdisciplinary collaboration and the exchange of knowledge. For instance, in the realm of global climate change governance, the current challenge lies in meeting emission reduction targets worldwide. Through a systematic psychological approach, researchers can more easily identify potential psychological issues inherent in IEL. It involves analyzing the fragmentation of international law to gain insights into the intricate legal structures governing greenhouse gases. Additionally, it entails exploring how state leaders perceive transboundary environmental governance, extending beyond political borders. The structural psychology of IEL provides an opportunity for researchers to delve into essential puzzles and propose potential solutions accordingly.

Last but not least, a structured framework supports the development of effective strategies and interventions informed by psychological insights to address challenges and enhance outcomes in IEL. It assists policymakers, negotiators, and legal professionals in understanding how psychological dynamics influences negotiations, dispute resolution, and enforcement of international agreements. Jean Galbraith identified that states are subject to salient bias under the compulsory jurisdictional clause in an agreement.¹⁷⁰ This pertains to the aspect of voluntariness

¹⁷⁰ Galbraith, *supra* note 3.

within the psychology of international law. The capacity of state leaders to comprehend and implement a treaty provision can influence their willingness to accept the treaty as a whole. A structured approach to the psychology of IEL is beneficial in this context, as it allows for the identification of pertinent questions and potential psychological phenomena within international law. This insight can be valuable for informing future research and guiding policymakers.

In summary, a structured framework focusing on the psychology of IEL improves our comprehension of how psychological factors impact legal processes and outcomes. This leads to a more informed decision-making process and the formulation of more effective policies and practices within the realm of IEL.

Finally, chapter 2 will build upon this chapter to argue that the psychology of IEL consists of the intersection of the psychology of international law (which relates to transboundary governance features) and the psychology of environmental law (which relates to the characteristics of environmental harm).

1.3 KEY TAKEAWAYS

IEL presents an opportunity for a psychological approach, yet the absence of a structured psychological observation creates a gap in discourse for future research. This research seizes the opportunity to advance the discussion by delving into the psychology of environmental law further and extending it to the realm of IEL.

IEL encompasses a collection of international laws aimed at managing transboundary environmental harm. Its framework primarily consists of a combination of treaties and customary international law. In a decentralized context, IEL thrives through collaborative efforts among states. Numerous treaties address various aspects of transboundary environmental issues, spanning

from air pollution and climate change to international watercourses and biodiversity conservation. This development in IEL marks a pivotal era for transboundary governance.

While different scholars offer diverse perspectives on enhancing IEL, the psychological aspect remains largely overlooked. The psychology of IEL holds crucial significance as treaty consent and *opinio juris* involve subjective valuation, perception, cognition, preference, and bias. However, existing literature fails to systematically address these psychological dimensions. Recent research on the psychology of environmental law partially addresses this academic gap by shedding light on the characteristics of environmental harm. Scholars such as Arden Rowell and Kenworthy Bilz have highlighted the systematic nature of environmental harm, which can trigger specific psychological reactions in individuals, influencing decision-making in environmental law. However, despite these advancements, the current discussion on psychology in environmental law does not adequately consider the "transboundary governance" aspect of IEL, which is central to its thesis on transboundary environmental harm governance.

In the second chapter, this thesis expands upon the literature review by examining the systematic nature of the psychology of IEL. It argues that the psychology of IEL embodies characteristics such as voluntariness, fragmentation, political borders, diffusion, complexity and non-human characteristics. These six aspects of IEL can elicit specific psychological responses from individuals and subsequently impact decision-making within the realm of IEL.

CHAPTER 2. IDENTIFYING THE HEART OF THE FIELD: THE PSYCHOLOGY OF TRANSBOUNDARY GOVERNANCE ON ENVIRONMENTAL HARM

The essence of the psychology of international environmental law (IEL) lies in the governance (or management) of transboundary environmental harm, integrating features and principles of both psychology of international law (pertaining to transboundary governance) and environmental law (addressing environmental impact). Following the introduction of the general psychology discussion in international law, this chapter attempts to articulate the distinctive psychological aspects inherent in the transboundary governance of environmental harm and to outline a thesis of IEL governance: asserting that IEL must effectively manage and address the overlapping psychological challenges of environmental harm (e.g., diffusion, complexity, and non-human characteristics) and of transboundary governance (e.g., voluntariness, fragmentation, and the crossing of political borders).

To understand the chief goals of this chapter, it is once again helpful to consider the contours of this figure (see Figure 1 above) representing the fields supporting international environmental law.

The center circle of Figure 1 depicts the psychology of IEL, which incorporates elements of public international law, environmental law, and law and psychology. This junction of the three areas leads to the psychology of IEL, which shares features with all the fields, including the psychology of international law, environmental law, and IEL.

As outlined in chapter 1, IEL includes several sources that could potentially offer a psychological intervention. According to Rowell and Kenworthy, environmental impact is

diffused, complex, and frequently involves interactions with non-human characteristics. Similarly, transboundary governance possesses unique characteristics that can evoke psychological phenomena, especially in terms of voluntariness, fragmentation, and political borders.¹⁷¹ Building on these discussions, this chapter asserts that the psychology of IEL must encompass and integrate/amalgamate these individual elements. Their integration forms the normative foundation of IEL: the transboundary governance of environmental harm.

This research asserts that developing an account of the psychology of IEL holds two significant advantages. First, this psychological approach reveals the psychological phenomena that individuals representing a state could experience when confronted with transboundary environmental harm governance. Similar to broader environmental impacts, transboundary environmental harm is characterized by its diffuse nature, complexity, and interactions with non-human objects.¹⁷² However, IEL specifically regulates transboundary environmental harm, such as cross-border air and water pollution, global biodiversity preservation, and climate change, introducing additional considerations regarding transboundary governance. The intersection of transboundary and environmental consideration could trigger distinct psychological phenomena, influencing states' approaches to governing transboundary environmental harm. This observation is likely to spark more investigation.

Second, this research argues that the psychology of IEL may play an auxiliary role in elucidating how and why nations come to value transboundary environmental harms as they do. Evaluation is crucial to the decision-making process, though economic discourse covers partially the conversation. Yet, psychology provides further insight into people's thought processes,

¹⁷¹ Psychological borders are political concept intuitively. However, political borders could also be a psychological relevant factor, details will be provided in the following section.

¹⁷² Rowell & Bilz, *supra* note 29, pp. 31, 63 & 93.

perceptions, and value attributions by empirical methods, that economics does not cover. By highlighting psychological processes and phenomena that influence decision-making, this approach offers a framework for understanding the rationale behind states' decisions and actions. It does so by delving into processes that govern human decision-making.

The rest of this chapter explores the psychology behind transboundary governance of environmental harm, bringing together six key characteristics: those related to environmental law (i.e., diffusion, complexity, non-human elements), and those related to international law (i.e., voluntariness, fragmentation, and the crossing of political borders). These attributes collectively define the governance of transboundary environmental harm. The chapter details how these features are employed in the context of transboundary environmental harm governance and form the psychology of IEL. Following this application, the chapter addresses the two primary aspects, transboundary governance and environmental impact, in the final section. It concludes that a psychological perspective can enhance our understanding of the processes that influence state governance of transboundary environmental harm.

2.1 THE PSYCHOLOGY OF TRANSBOUNDARY ENVIRONMENTAL HARM GOVERNANCE—ENVIRONMENTAL HARM CHARACTERISTICS

The nature of transboundary environmental harm governance is both cross-border and environmental. Environmental harm that extends beyond political borders is classified as transboundary environmental harm. As a result, the governance of transboundary environmental harm governance has both *environmental* and *international* law dimensions. Based on this framing, this dissertation contends that transboundary environmental harm governance characters represent

a distinct subset of transboundary environmental harm, separate from environmental law. The psychology of international law could help us understand the nature of transboundary governance. Transboundary governance shares the cross-border quality with the psychology of international law. It possesses voluntariness, fragmentation, and political borders characteristics. However, the psychological aspects of international law do not specifically cover the environmental dimension of managing transboundary environmental harm. Rowell and Bilz's framework systematically outlines the psychological aspects of environmental impact.¹⁷³ Transboundary environmental harm exhibits comparable characteristics to those of environmental impact. Therefore, for a comprehensive discussion on the psychology of IEL and governance of transboundary environmental harm, it is crucial to adapt their framework to the context of transboundary environmental harm.

In this section, this chapter elaborates the psychology of transboundary environmental harm governance (environmental law), suggesting that factors such as diffusion, complexity, nonhuman character; transboundary nature, voluntariness, fragmentation, and political border, all contribute to the psychological distinctiveness of transboundary environmental harm governance within the framework of international law. Understand the psychology of transboundary environmental harm governance could better our comprehension on the decision-making, behavior, and valuation processes under IEL.

2.1.1 Diffusion

As Rowell & Bilz describe the *diffusion* of transboundary environmental harm in time and space may contribute to the undervaluation of such harms. Geographically, the diffusion of

¹⁷³ Rowell & Bilz *supra* note 29.

transboundary environmental harm spreads across national borders. The lawful usage of national territory in the United States may bring harm to neighboring Canada.¹⁷⁴ The causation of environmental impact in a cross-border context could be even more complicated. For example, the building of dam upstream could imperil the foreign ecosystem downstream.¹⁷⁵ The distance involved in transboundary environmental harm makes it harder for individuals to perceive the importance of protecting endangered species worldwide. For example, air pollutants from China contribute to the air pollution in South Korea.¹⁷⁶ Temporally, similar to regular environmental harm, carcinogenic pollutants could last for decades and endanger subsequent generations.¹⁷⁷ These geographical and temporal characteristics cause some people to disregard the environmental impact. Studies into cognitive limitations offer abundant research about this phenomenon. The availability heuristic refers to when one evaluates frequency, items that are often simple to recall are often perceived as abundant.¹⁷⁸ The less obvious, urgent, and vivid a risk or event is, the more likely people are to underestimate its severity, according to the availability heuristic research.¹⁷⁹ Transboundary environmental harm exhibits similarities to these psychological effects. Cross-border pollution is almost always considered less pressing to address and more difficult to identify. Consider ozone depletion in the 1970s. It was not until 1985 that the international community

¹⁷⁴ Trail Smelter Arbitration (United States v. Canada), Arbitral Award, 3 U.N.R.I.A.A 1907 (1941).

¹⁷⁵ Gabčíkovo-Nagymaros, *supra* note 24, p. 75.

¹⁷⁶ Min Jae Kim, *The Effects of Transboundary Air Pollution from China on Ambient Air quality in South Korea*, 5 HELIYON, PMC6926254 (2019).

¹⁷⁷ Rowell & Bilz, *supra* note 29, p. 53-55; Richard L. Revesz, Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives, 9 COLUM. L. REV., p. 941-1017 (1999); Arden Rowell, *The Cost of Time: Haphazard Discounting and the Undervaluation of Regulatory Benefit*, 85 NOTRE DAME L. REV., 1505, 1666 (2010).

¹⁷⁸ Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCHOLOGY, 207-232 (1973); Paul Slovic, *Perception of Risk*, 236 SCIENCE, 280-285 (1987).

¹⁷⁹ DANIEL KAHNEMAN ET AL., JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 32-48 (1982); Timur Kuran & Cass Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV., 683-768 (1999); Elke U. Weber, *Experience-based and Description-based Perceptions of Long-term Risk: Why Global Warming Does Not Scare Us (yet)*, 77 CLIMATE CHANGE, 103-120 (2006); Jonathan B. Wiener, *The Tragedy of the Uncommons: On the Politics of Apocalypse*, 7(S1) GLOBAL POLICY, 67-80 (2016).

recognized the issue and drafted a global treaty to regulate chlorofluorocarbons. Temporal diffusion also results in a challenge to perception. It could take decades for humanity to recognize the destructive effects of dumping plastic waste into oceans. Individuals cannot easily comprehend the extensive damage to marine ecology caused by such pollution due to its temporal dimension. Therefore, the diffusion associated with transboundary environmental harm results in the undervaluation of environmental concern under IEL.

The possibility of global climate change provides an opportunity to trigger an availability cascade.¹⁸⁰ Monitoring and comprehending the climate as a whole can be challenging, but isolated climate-related phenomena are readily identifiable. Media attention often focuses on the frequency of tornadoes, hurricanes, heat waves, and floods. Whether a specific climatic event is caused by climate change, the persistent coverage of related phenomena in local or global news helps people recall weather events and may exaggerate the rate of severe climate change. This availability cascade has the potential to lead to a misinterpretation of climate change and could have significant repercussions on the policymaking process.¹⁸¹

Individuals naturally gravitate towards forming and maintaining social collectives, aligning themselves with these groupings, and displaying a preference for them over those who outside the group. These groups are social constructions comprising individuals who regard themselves as members of the same social category and consequently share a collective identity with others in that category.¹⁸² Due to this innate human tendency to form groups, it becomes easier to emphasize the benefits for those within the group while disregarding or neglecting the adverse effects of

¹⁸⁰ Kuran & Sunstein, *id.*

¹⁸¹ Jeffrey Rachlinski, *The Psychology of Global Climate Change*, 2000 U. ILL L. REV. 299 (2000).

¹⁸² Michael Hogg & John C. Turner, Intergroup Behaviour, *Self-stereotyping and the Salience of Social Categories*, 26 BRITISH J. SOCIAL PSYCHOLOGY, 325 (1987).

environmental factors on individuals outside the group. Moreover, in the most harmful expressions of in-group/out-group dynamics, it may even lead individuals to derive satisfaction from causing harm to those perceived as outsiders. The consequences of in-group/out-group dynamics become more severe when scarcity becomes a factor in the environmental issue.¹⁸³ For instance, deforestation has detrimental repercussions for both Brazil and global society. Forests are essential in the process of absorbing and sequestering carbon dioxide, a greenhouse gas that significantly contributes to climate change. Brazil, home to approximately 50% of the Amazon Forest, possesses vast forested regions; however, Brazilians have the capacity to exploit these forests for purposes such as livestock grazing, mining, and extracting various other forest commodities. Regrettably, these actions result in the devastation of the forest and the associated release of carbon emissions. The deforestation activities undertaken by Brazilian corporations and the government primarily serve to boost their domestic economy, benefiting the local population, while simultaneously adversely affecting individuals beyond Brazil's borders.

In addition, the diffusion-induced phenomenon known as the "identifiable victim" effect exacerbates the challenge of generating attention to environmental issues. Altruistic behavior involves willingly sacrificing personal advantages or enduring difficulties to prevent harm to others. The inclination to make such sacrifices for others is influenced by various individual and contextual factors.¹⁸⁴ Individuals who are physically distant from others, especially those whose identities are unclear or difficult to understand, may receive less understanding and compassion compared to victims who are nearby when extensive environmental effects occur. Loewenstein and Lerner conducted a study that found that individuals personally identified as victims are more

¹⁸³ Rowell & Bilz, *supra* note 29, p. 54.

¹⁸⁴ Louis A. Penner et al., *Measuring the Prosocial Personality*, in ADVANCES IN PERSONALITY ASSESSMENT 147-63 (J. N. Butcher & C.D. Spielberger eds., 1995).

inclined to show empathy and seek help for them, as opposed to victims represented solely by statistics or who stay anonymous.¹⁸⁵ Non-governmental organizations have long recognized that displaying the names and images of individuals affected by poverty or famine increases contributions. Kogut and Ritov's experiment revealed that including a victim's name, age, and photo in a fundraising appeal led to a significant 60% increase in donations.¹⁸⁶ It is extremely challenging for individuals to establish a clear connection between the negative impacts of their activities and any specific individual, let alone specific humans, because of the widespread diffusion of many transboundary environmental harms. In cases like the ozone depletion and climate change, the impacts on unidentifiable objects are hard to observe. The potential victims of the transboundary damage could be described as the mass majority. In essence, assigning empathy to a specific individual or group victim is challenging. Such circumstances might lead countries to allocate fewer resources and focus less on the governance of transboundary environmental harm.

Hedonic forecasting, another cognitive phenomenon caused by diffusion, serves as a prime example of how individuals underestimate the importance of governance for transboundary environmental harm. This behavioral pattern demonstrates that people are poor futurists because they tend to prioritize the present, often neglecting future mitigation or adaptation efforts.¹⁸⁷ In the case of transboundary environmental harm, this temporal diffusion or bias could lead to negligence regarding pollution and its management. Consider the impact of long-term nuclear radiation; people did not fully comprehend how harmful nuclear radiation was until historical precedents

¹⁸⁵ George Loewenstein & Jennifer S. Lerner, *The Role of Affect in Decision Making*, in HANDBOOK OF AFFECTIVE SCIENCE 619-42 (Davidson R. et al., eds., 2003).

¹⁸⁶ Tehila Kogut & Ilana Eitov, *The "Identified Victim" Effect: An Identified Group, or Just a Single Individual?*, 18 J. BEHAVIORAL DECISION MAKING, 157 (2005).

¹⁸⁷ Timothy D. Wilson et al., *Focalism: A Source of Durability Bias in Affective Forecasting*, 78 J. PERSONALITY & SOCIAL PSYCHOLOGY, 821-836 (2000).

revealed its severity.¹⁸⁸ Present bias also skews individuals' perception of environmental impact, as they prioritize immediate gratification over long-term consequences.¹⁸⁹ Essentially, people work hard to avert imminent harm, which further altering their assessment of environmental value and impact. Transboundary environmental harm may be diluted by its temporal diffusion, obscuring the precise effects and hindering effective control measures.

2.1.2 Complexity

The second feature relates to *complexity*. The formation of a transboundary environmental harm is complex. One cause could be influenced by another causation, and one may be nested in the other. This complexity may distort individual psychological perceptions of causes and effects.¹⁹⁰ Individuals may have difficulties understanding the environmental complexity due to cognitive limitations. This challenge leads to the short-cut heuristic preference when individuals process certain information. For example, individuals care more about salient factors when an environmental impact has several factors and causations.¹⁹¹ Causation could hence be simplified as a linear relation, with the reality being obscured.

The complex constitution of transboundary environmental harm could lead to a simplification heuristic reaction, resulting in a lower estimation of environmental harm. Put another way, the longer people wait, the easier it is for them to undervalue the impact of damage.¹⁹²

¹⁸⁸ Dan Listwa, *Hiroshima and Nagasaki: The Long Term Health Effects*, COLUMBIA CENTER FOR NUCLEAR STUDIES (2012), at <https://k1project.columbia.edu/news/hiroshima-and-nagasaki>.

¹⁸⁹ Ted O'Donoghue & Matthew Rabin, *Doing It Now or Later*, 89 AMERICAN ECONOMIC REV., 103–124 (1999); Shane Frederick et al., *Time Discounting and Time Preference: A Critical Review*, 40 J. ECONOMIC LITERATURE, 351–401 (2002); David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 QUANTITATIVE J. ECONOMICS, 443–478 (1997).

¹⁹⁰ Rowell & Bilz, *supra* note 29, p. 68-75.

¹⁹¹ Shelley E. Taylor & Susan T. Fiske, *Salience, Attention, and Attribution: Top of the Head Phenomena*, in, ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY 249-88 (L. Berkowitz ed., 1978).

¹⁹² Richard H. Thaler, *Some Empirical Evidence on Dynamic Inconsistency*, 1 QUASI RATIONAL ECONOMICS, 127–136 (1991).

The environment is a classic complex system¹⁹³, characterized by a nesting hierarchy that extends from individual units to entire ecosystem.¹⁹⁴ For instance, the ecosystem contributes to the climate and vice versa. This interacting dynamics between the climate and the ecosystem plays an important role in the constitution of environment. The system becomes even more complicated if we factor human behavior into it. Consider the example of sunscreen, which has been found to have a deadly impact on marine coral. A regulator may wish to ban the use of sunscreen;¹⁹⁵ however, the substances endangering coral could be numerous, and sunscreen just one of them. Therefore, it is challenging for a policymaker to precisely and accurately predict the environmental impact.

Furthermore, a considerable proportion of individuals exhibit a deficiency in mathematical proficiency, with their deficiency in fundamental numerical abilities being comparable to mathematical illiteracy.¹⁹⁶ Inadequate proficiency in numerical operations results in increased error rates when it comes to identifying hazards and performing probability calculations; it also exacerbates the influence of framing effects, which means individuals make decisions based on how the issue is presented.¹⁹⁷ It may cause individuals to develop a distorted perception of their legal responsibilities in relation to risks.¹⁹⁸ Similarly, while numbers that are exceedingly minute or enormous do not inherently confound the concepts they represent, the majority of individuals simply lack the capacity to grasp the magnitude at such extremes.¹⁹⁹ This limitation appears

¹⁹³ RICARD V. SOLÉ & JORDI BASCOMPTE, SELF-ORGANIZATION IN COMPLEX ECOSYSTEM 1-16 (2006); Simon A. Levin, *Ecosystems and the Biosphere as Complex Adaptive Systems*, 1 ECOSYSTEMS, 431 (1998).

¹⁹⁴ J. B. Ruhl, *Thinking of Environmental Law as a Complex Adaptive System: How to Clean up the Environment by Making a Mess of Environmental Law*, 34 HOUSTON L. REV., 933 (1997).

¹⁹⁵ Robert B. Raffa et al., *Sunscreen Bans: Coral Reefs and Skin Cancer*, 44 JOURNAL OF CLINICAL PHARMACY AND THERAPEUTICS, 134 (2019).

¹⁹⁶ Ellen Peters et al., *Numeracy and Decision Making*, 17 PSYCHOL. SCI. 407 (2006).

¹⁹⁷ Andrea D. Gurmankin et al., *The Effect of Numerical Statements of Risk on Trust and Comfort with Hypothetical Physician Risk Communication*, 24 MEDICAL DECISION MAKING, 265 (2004).

¹⁹⁸ Arden Rowell & Jessica Bregant, *Numeracy and Legal Decision Making*, 46 ARIZ. ST. L. J., 191 (2014).

¹⁹⁹ Peters et al., *supra* note 196.

inherent, akin to the early psychophysical notion of the "just noticeable difference" threshold. For instance, a slight prolongation in the duration of a light flash is discernible after a brief preceding flash, but the equivalent increase from an initial flash that is considerably longer is undetectable.²⁰⁰ General innumeracy and difficulties in understanding extremes of scale compound the challenge of comprehending environmental. This is particularly problematic for transboundary environmental harms, which are often unpredictable, probabilities that may be miniscule, even though the consequences can be unimaginably large. As a result, people may struggle to translate information about transboundary environmental harm information into legal conclusions, leading to errors in cause-and-effect reasoning.

In addition, individuals are more inclined to attribute negative consequences to reasons they already consider harmful or immoral, and they are unwilling to believe that what they subjectively view as good could result in negative outcomes. Furthermore, some individualists may doubt the validity of climate change science because they fear the implications of global acceptance on climate change issue. Under this, anything that might provide a legal justification for the state to govern industries will be viewed as suspicious. In contrast, liberalists and communitarians may accept the science of climate change not because they are more educated, but because the conventional top-down method of regulation is consistent with their ideas of government.²⁰¹ Therefore, the subjective belief could contribute to individual perception.

Another psychological interaction when individuals are faced with a complex environmental impact is pattern detection and simplifying heuristics. The evolved human brain is

²⁰⁰ Brian Butterworth, *A Head of Figures*, 284 SCIENCE 928 (1999).

²⁰¹ Dan M. Kahan et al., *They Saw a Protest: Cognitive Illiberalism and the Speech-conduct Distinction*, 64 STANFORD L. REV., 851 (2012).

endowed with superior template-processing intelligence.²⁰² The cognitive process of discovery templating enables individuals to simplify complex concepts into basic templates. When this procedure is effective, discovering templates enables us to categorize a few fundamental qualities and reduce them to their most essential components. This skill allows us to find our way and regulate our environment as well as grasp complex events and phenomena. However, this simplification could also generate some drawbacks. For example, industrial carbon emissions are considered harmful to climate change, thus prompting expectations and demands for corresponding regulations. In the U.S., the Clean Air Act exempts carbon emissions from wildfires. Despite this exemption, wildfires significantly contribute to 112 million metric tons of CO₂, with California alone accounting for over 75% of the total carbon emissions.²⁰³ The tendency towards templating behavior or the availability heuristic bias could result in further misperceptions of environmental risks, potentially undermining the effectiveness of environmental regulations.

Additionally, there is a psychological barrier to mitigating the danger of global climate change because of the unknown effects of using fossil fuels.²⁰⁴ The human tendency to interpret new knowledge in light of preexisting belief systems makes those belief systems highly robust and resistant to ready change. The unintentional, and sometimes unexpected, results of this tendency are referred to as biased assimilation, a tendency to accept information that supports one's ideas while rejecting data that contradicts those beliefs.²⁰⁵ One result of biased assimilation is that the presentation of conflicting data tends to reinforce rather than challenges people's pre-existing

²⁰² Mark P. Mattson, *Superior Pattern Processing is the Essence of the Evolved Human Brain*, 8 FRONTIERS IN NEUROSCIENCE, 265 (2014).

²⁰³ California Air Resources Board, *Fire is Part of the Earth's "Natural" Carbon Cycle; Combustion of Fossil Fuels is not*, at <https://ww2.arb.ca.gov/resources/documents/frequently-asked-questions-wildfire-emissions>.

²⁰⁴ Rachlinski, *supra* note 181.

²⁰⁵ Charles Lord et al., *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 J. PERSONALITY & SOCIAL PSYCHOLOGY, 2099 (1979).

beliefs on subjects that they feel passionate about. In terms of climate change, scientific data demonstrates that human activities heavily influence the global climate,²⁰⁶ but divergent beliefs about climate change still persist. Some experts thought the data highlighted the severity of climate change, but others held contrasting views.²⁰⁷ This debate may culminate in the adoption of preventive measures in global climate change policy.

2.1.3 Non-human Characteristics

The third feature pertains to *non-human characteristics*. Transboundary conservation and governance involve the interaction between human and nonhuman objects, triggering psychological reactions that influence the valuation and assessment of transboundary environmental harm. Human beings exhibit variable, unstable valuation processes concerning non-human objects. For example, pollution that is familiar or naturally occurring may induce less anxiety compared to novel or manmade pollutants.²⁰⁸ This phenomenon could be attributable to factors such as the size or prevalence of animals involved, or it could be driven by concerns for animal protection. An example of this is the anthropomorphization of the environment, where nonhuman entities are endowed with human-like characteristics. This tendency becomes more pronounced for animals that share common features or similarities with humans.²⁰⁹ Small mammals with traits similar to human infants might consequently receive greater attention and environmental regulatory protection.²¹⁰

²⁰⁶ Robert K. Kaufmann & David I. Stern, *Evidence for Human Influence on Climate from Hemispheric Temperature Relations*, 388 NATURE, 39 (1997).

²⁰⁷ Aaron M. McCright & Riley E. Dunlap, COOL DUDES: THE DENIAL OF CLIMATE CHANGE AMONG CONSERVATIVE WHITE MALES IN THE UNITED STATES, 21 GLOBAL ENVIRONMENTAL CHANGE, 1163 (2011).

²⁰⁸ Rowell & Bilz, *supra* note 29, p. 159.

²⁰⁹ *Id.* p. 98.

²¹⁰ J. W. Bradshaw & E.S. Paul, *Could Empathy for Animals Have Been an Adaptation in the Evolution of Homo Sapeins*, 19 ANIMAL WELFARE, 107 (2010); Konrad Lorenz, *Die Angeborenen Formen Möglicher Erfahrung (The inborn forms of possible experience)*, 5 ZEITSCHRIFT FÜR TIERPSYCHOLOGIE (JOURNAL OF ANIMAL PSYCHOLOGY), 235 (1943).

Recognizing similarities to oneself can also evoke a feeling of intrinsic value. Research indicates that our tendency to assist others and our capacity for empathy towards them are shaped by the extent to which we perceive them as similar to ourselves. Multiple investigations provide strong empirical evidence for this hypothesis.²¹¹ Nevertheless, there are inconsistencies in the results of the interactions involving unfamiliar individuals.²¹² The spectrum of variation between humans and nonhumans spans from subtle to substantial differences. Still, these discrepancies are consistently juxtaposed with comparisons among humans themselves. This may explain the significant body of empirical evidence supporting the existence of a similarity-empathy effect in relation to nonhuman beings.

According to a study conducted by Westbury and Neumann,²¹³ it was demonstrated that human participants exhibited markedly greater degrees of empathy towards primates compared to birds when presented with footage of suffering animals. This research found a direct correlation between the animals' level of physiological empathy and their proximity to humans in terms of evolutionary development. Additionally, it is worth considering the degree to which humans can readily form a bond with animals that share similarities with human children.²¹⁴ Thus, the extent to which individuals perceive intrinsic value in environmental benefits, such as the conservation of certain animal species, is heavily influenced by their personal affiliation towards them.

²¹¹ Lisa Brown et al., *Affective Reactions to Pictures of Ingroup and Outgroup Members*, 71 BIOLOGICAL PSYCHOLOGY, 303 (2006); D. Krebs, *Empathy and Altruism*, 32 J. PERSONALITY & SOC. PSYCHOLOGY, 1134 (1975); Ezra Stotland, *Exploratory Investigations of Empathy*, 4 ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY, 271 (1969).

²¹² Daniel Batson et al., *Similarity and Nurturance: Two Possible Sources of Empathy for Strangers*, 27 BASIC & APPLIED SOCIAL PSYCHOLOGY, 15 (2005).

²¹³ H. Rae Westbury & David Neumann, *Empathy-related Responses to Moving Film Stimuli Depicting Human and Non-human Animal Targets in Negative Circumstances*, 78 BIOLOGICAL PSYCHOLOGY, 66 (2008).

²¹⁴ John W.S. Bradshaw & E.S. Paul, *Could empathy for animals have been an adaption in the evolution of Homo Sapiens?*, 19 ANIMAL WELFARE, 107 (2010).

The interaction with the natural environment holds significant but often overlooked benefits. Human beings are significantly affected by the various ways in which they interact with the environment.²¹⁵ Research indicates that spending time in natural environments yields measurable emotional and psychological advantages. According to an empirical study,²¹⁶ simply observing a tree can help reduce anxiety, irrespective of one's location within a metropolis. Additional research suggests that looking at motionless nature photographs can have a soothing effect on the mind and emotions.²¹⁷ A study conducted by Maple and Morris²¹⁸ suggests that visiting naturalistic leisure destinations such as zoos, aquariums, and botanical gardens can enhance cognitive performance and overall wellness. Conversely, exposure to negative environmental settings is associated with heightened levels of mental and emotional distress.²¹⁹ However, despite the benefits we gain from nature, individuals tend to neglect environmental concerns. Although the emotional and psychological benefits of engaging with nature can be objectively quantified after they are observed, these effects typically occur without the perceiver's conscious awareness.²²⁰ The awareness of benefits could further impact the codification and decision in policy making process. Under transboundary environmental harm context, how we perceive the natural environment could profoundly impact our valuation and governance on the cross-border damages.

²¹⁵ Terry Maple & Megan Morris, *Behavioral Impact of Naturalistic and Wilderness Settings*, in ENVIRONMENTAL PSYCHOLOGY AND HUMAN WELL-BEING 253-79 (Ann Sloan Devlin ed., 2018).

²¹⁶ Bin Jiang et al., *A Dose-Response Curve Describing the Relationship Between Urban Tree Cover Density and Self-Reported Stress Recovery*, 48 ENVIRONMENT & BEHAVIOR, 607 (2016).

²¹⁷ Magdalena M.H.E. van den Berg et al., *Autonomic Nervous System Responses to Viewing Green and Built Settings: Differentiating Between Sympathetic and Parasympathetic Activity*, 12 INT'L. J. ENVIRON. RES. PUBLIC HEALTH, 15860 (2015).

²¹⁸ Maple & Morris, *supra* note 215.

²¹⁹ Jules Pretty et al., *The Mental and Physical Health Outcomes of Green Exercise*, 15 INT'L J. ENVIRON. HEALTH RES., 319 (2005); Kayleigh Wyles et al., *Factors that Can Undermine the Psychological Benefits of Coastal Environments*, 48 ENVIRON. BEHAVIOR., 1095 (2016).

²²⁰ Gregory Bratman et al., *The Impacts of Nature Experience on Human Cognitive Function and Mental Health*, ANNALS OF THE N.Y. ACADEMY SCI. J., 118 (2012).

Another factor that influences valuation is the uniqueness and scarcity of non-human objects. People prefer unique or rare objects, often associating them with those objects they prefer.²²¹ This kind of preference could extend to environmental valuation, as natural environments are inherently irreplaceable. For example, marine resources in the Pacific Ocean are different from those in the Atlantic, and the glacier environment in Alaska cannot simply substitute for the presence of the Jakobshavn Glacier in Greenland. People treasure scarce objects more than other objects.²²² This explains the protection of landscapes such as Mount Fuji, Mammoth Cave, and Crater Lake. Preference also applies to endangered species, such as the Giant Panda, the Northern Spotted Owl, and Malabar Mahogany.

Cultural and religious influences also play an important role in valuation.²²³ In a wide-ranging multinational research study spanning nine countries, findings revealed that while individualism exhibited a slightly negative correlation with climate change denial, environmental identification did not, climate change denial was correlated negatively by environmental identity, horizontal collectivism,²²⁴ and individualism,²²⁵ and positively by vertical individualism.²²⁶ Additionally, individuals who perceive a spiritual connection with the land are more likely to enhance the legitimacy of environmental regulations.²²⁷ Feelings of environmental sacredness

²²¹ Geoffrey J. Leonardelli et al., *Optimal Distinctiveness Theory: A Framework for Social Identity, Social Cognition, and Intergroup Relations*, 43 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY*, 63 (2010).

²²² Luigi Mittone & Lucia Savadori, *The Scarcity Bias*, 58 *APPLIED PSYCHOLOGY*, 453 (2009).

²²³ JEROME BRUNER, *ACTS OF MEANING* 33-65 (1990); Stephanie de Oliveira & R.E. Nisbett, *Culture Changes How We Think about Thinking: From "Human Inference" to Geography of Thought*, 12 *PERSPECTIVES ON PSYCHOLOGICAL SCIENCE*, 782 (2017).

²²⁴ Horizontal collectivism (HC) is a tendency to engage in very strong interactions and interdependence with own in-groups.

²²⁵ Horizontal individualism (HI) implies an intention to be unique and independent of other people's expectations.

²²⁶ Vertical individualism (VI) is competitiveness and a desire to be the best; Sofya K. Nartova-Bochaver et al., *The Role of Environmental Identity and Individualism/Collectivism in Predicting Climate Change Denial: Evidence from Nine Countries*, 84 *JOURNAL OF ENVIRONMENTAL PSYCHOLOGY* (2022).

²²⁷ Paul Deal & Gina Magyar-Russell, *Sanctification Theory: Is Nontheistic Sanctification Nontheistic Enough?*, 10 *PSYCHOLOGY OF RELIGION AND SPIRITUALITY*, 244 (2018); BRON TAYLOR, *DARK GREEN RELIGION: NATURE SPIRITUALITY AND THE PLANETARY FUTURE* ch 2 (2010).

leads to higher motivation for environmental protection given that people with such convictions are more likely to attend pro-environment activities.²²⁸ The valuation of environment changes according to personal beliefs.²²⁹ For instance, climate change skeptics who harbor uncertainty regarding the underlying science may seek guidance from reputable figures in their social sphere to uphold socially appropriate viewpoints in order to maintain social continuity.²³⁰ Furthermore, the environmental views and pro-environmental activities of individuals may differ from country to country. The diverse cultural, social, and political landscapes of countries affect individual attitudes toward the environment, their sense of efficacy within their unique political and physical contexts, and the feasibility and relevance of engaging in various pro-environmental behaviors.²³¹ Psychological methods provide a means of comprehending how non-human interaction influences the way individuals value the environment.

2.2 THE PSYCHOLOGY OF TRANSBOUNDARY ENVIRONMENTAL HARM GOVERNANCE—TRANSBOUNDARY GOVERNANCE CHARACTERISTICS

This section focuses on the transboundary dimension (international law feature) of the psychology of IEL, asserting that three key elements within transboundary governance contribute significantly to the psychological discourse in IEL. IEL shares common ground with public international law notably in terms of voluntariness, fragmentation, and political borders.

²²⁸ Nalini Tarakeshwar et al., *The Sanctification of Nature and Theological Conservation: A Study of opposing Religious Correlates of Environmentalism*, 42 REV. OF RELIGIOUS RESEARCH, 387 (2001); Taylor, *id.*

²²⁹ HOWARD MARGOLIS, DEALING WITH RISK: WHY THE PUBLIC AND THE EXPERTS DISAGREE ABOUT ENVIRONMENTAL ISSUES 72-9 (1996).

²³⁰ Hunter Gehlbach et al., *Leveraging Cognitive Consistency to Nudge Conservative Climate Change Beliefs*, 61 JOURNAL OF ENVIRONMENTAL PSYCHOLOGY 134 (2019).

²³¹ Lindsay B. Miller et al., *Relationships Among Environmental Attitudes, Environmental Efficacy, and Pro-Environmental Behaviors Across and Within 11 Countries*, 54 ENVIRONMENT & BEHAVIOR, 1063 (2022).

International environmental treaties involve state willingness, while the interconnectedness between laws and institutions leads to fragmentation. Furthermore, transboundary environmental harm governance deals with pollution that transcends political borders. These three elements highlight the transboundary nature of the psychology of IEL. In the subsequent discussion, this research aims to elaborate on each element and explore their application in IEL, addressing the question of how and to what extent these psychological aspects can be utilized in IEL.

2.2.1 Voluntariness

Following the discussion from environmental impact, this section continues the discussion on transboundary governance. The fourth feature, transboundary environmental harm governance involves the *voluntariness* of states and actors at stake, which is relevant to the subjective perception. The concept of voluntariness underpins the valuation process in mind concerning international and transboundary issues in the dissertation. Unlike domestic law, IEL is binding only when parties involved explicitly agree to its terms. Moreover, due to the lack of a centralized enforcement mechanism, states comply with international environmental obligations out of its willingness, not by enforcement mechanisms. Agreeing to a legally enforceable agreement also entails substantial perceived expenses related to sovereignty,²³² as states may relinquish some authority over certain legal matters regulated by international agreements. These potential phenomena delineate the role of voluntariness in the psychology of IEL. Any biases and preferences can influence the assessment of state' involvement in transboundary environmental harm governance, as exemplified by the salience bias mentioned earlier. This dissertation begins the valuation discussion by introducing the valuation approach in the following.

²³² Kenneth Abbott & Duncan Snidal, *Hard and Soft Law in International Governance*, 54 INT'L ORGANIZATIONS 421, 426 (2000).

Valuation and decision-making processes pertaining to international governance of transboundary environmental harm are impacted by the subjective perspectives of states during the formation of environmental treaties. The contingent valuation method is frequently employed as the principal instrument for environmental valuation. For example, “willingness to pay” of individuals is a critical factor in this approach. By expressing the amount which they prepare to spend in order to appreciate, protect, or conserve the natural environment, individuals establish the environmental value. Nevertheless, an individual's assessment of the environment is subject to a multitude of factors, encompassing cultural, religious, geographical, economic, social, and political aspects. This may result in valuation inconsistencies when one considers the inclination of individuals to pay. Likewise, cultural, religious, economic, political, and geographical factors can impact a country's inclination to address the concerns of transboundary environmental harm. This substantial variation could result in the allocation of resources and level of attention by any state regarding tackling transboundary environmental harm. As a result, the commitment and perception of states significantly impact the consensus and formation that needs to be achieved in an environmental treaty.

An illustrative case of the perceptual divide that leads to the consensus challenge in transboundary environmental governance is evident in climate change governance. In the past, during the Kyoto Protocol negotiations, countries such as China, India, and the United States were hesitant to commit to legally binding restrictions on their greenhouse gas emissions. Consequently, only around a quarter of global emissions were encompassed within the Kyoto Protocol.²³³ The Paris Agreement subsequently emerged as a pivotal framework for global action on climate change.

²³³ DANIEL BODANSKY ET AL., INTERNATIONAL CLIMATE CHANGE LAW 18 (2017).

However, despite its adoption, the passage of the Agreement is not unanimous.²³⁴ A significant faction of one major political party in the United States openly cast doubt on the science of climate change, impeding the United States' ability to participate in international agreements and practically precluding legislative action.²³⁵ Even after initially joining the Paris Agreement, the Trump Administration's perception led to withdrawal in 2017.²³⁶

In India, the electoral priority of supplying electricity to 300 million individuals takes precedence over addressing climate change concerns.²³⁷ At the Paris negotiations, developed nations gathered with the aim of reaching a global agreement centered on mitigation rather than adaptation, which is crucial for the least developed and island states. They aimed to preempt legal responsibilities related to finance, compensation, and technology transfer, while also incorporating robust international transparency measures for national mitigation efforts.²³⁸ However, there were significant discrepancies among Northern countries, particularly concerning the legal bindingness of the agreement. The European Union, along with Latin American countries and many island states, pushed for compulsory and quantified national mitigation strategies, as well as a legal requirement to communicate these strategies internationally upon ratification. They proposed making participation in the treaty contingent upon enforcing domestic actions. European representatives stressed the importance of regular policy updates every five years to ensure that mitigation commitments build upon previous efforts.²³⁹ Observing the Paris Agreement, we could

²³⁴ Daniel Bodansky, *The Paris Climate Agreement: A New Hope?*, 110 AM. J. INT'L L. 288, 289 (2016).

²³⁵ Tiffany Germain, Kristen Ellingboe & Kiley Kroh, *The Anti-Science Climate Denier Caucus: 114th Congress Edition*, CLIMATE PROGRESS (Jan. 8, 2015), at <http://thinkprogress.org/climate/2015/01/08/3608427/climatedenier-caucus-114th-congress/>.

²³⁶ Eebacca Hersher, *U.S. Officially Leaving Paris Climate Agreement*, NPR SCIENCE, Nov. 3, 2020.

²³⁷ Richard Martin, *India's Energy Crisis*, MIT TECHNOLOGY REVIEW (Oct. 7, 2015), at <https://www.technologyreview.com/s/542091/indias-energy-crisis/>.

²³⁸ Radoslav Dimitrov, *The Paris Agreement on Climate Change: Behind Closed Doors*, 16 GLOBAL ENVTL POLITICS, 1, 3 (2016).

²³⁹ *Id.*

further conclude that divergent demands and perceptions yield different decision-making outcomes and actions. As a result of the distinctions, the codification of the Paris Agreement represents a legally binding yet ambiguously defined obligation. Voluntarism under international law assumes a psychologically significant role in transboundary environmental harm governance.

Moreover, the perception of states could also conflict. Within customary IEL, such perceptions could influence states' *opinio juris* and affect the development of customary international law. Consider the precautionary principle under IEL, with several debates discussing the legal status.²⁴⁰ The European Union and India regarded the precautionary principle as customary international law.²⁴¹ However, Canada challenged the EU's stance in the WTO dispute settlement yet it adopted the precautionary principle in its domestic legislation.²⁴² Similarly, the United States shared a similar perspective with Canada. A report published by a Federal Advisory Committee for the US Environmental Protection Agency sheds light on why the United States has been skeptical towards officially adopting the precautionary principle. The paper notes that American laws typically exercise caution in the face of scientific or technical uncertainty. However, despite the principle's scientific and governmental support in Europe, there are fears and concerns that its application may result in legal challenges.²⁴³

²⁴⁰ Marie-Claire Cordonier Segger & Markus Gehring, *The WTO and Precaution: Sustainable Development Implications of the WTO Asbestos Dispute*, J. ENVTL L. 289, 291(2003); United Nations University, Institute of Advanced Studies, *Trading Precaution: The Precautionary Principle and the WTO*, UNU-IAS Report (2005).

²⁴¹ Treaty Establishing the European Economic Community, Title XVI, Environment, Article 130r (2), Mar. 25, 1957, 294 U.N.T.S. 3, states that: "Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay. Environmental protection requirements should be integrated into the Community's other policies."; *Vellore Citizens' Welfare Forum v. Union of India and Others*, 1996 (5) SCC 647 (India). The status of the precautionary principle in Indian law was recently confirmed by *T.N. Godavarman Thirumalpad v. Union of India*, 2002 (10) SCC 606.

²⁴² A Canadian Perspective on the Precautionary Approach/ Principle, Discussion document, Regulatory Affairs and Orders in Council Secretariat, Privy Council Office, Government of Canada, September 2001.

²⁴³ Hans Sanderson & Keith Solomon, *Precautionary Limits to Environmental Science and Risk Management – Three Types of Errors*, 2 JOURNAL OF TRANSDISCIPLINARY ENVIRONMENTAL STUDIES, 1 (2003).

In the WTO dispute settlement, even with the recognition that WTO law is part of the broader framework of public international law, the Appellate Body rejected the precautionary principle's customary international law character and status.²⁴⁴ The Appellate Body's ruling in the EC-Hormones case stated that the precautionary principle, with the exception of IEL, has not yet been formally endorsed as a customary international law.²⁴⁵ This shows how perceptions about a rule can affect how customary international law creates and forms.

Compliance issue hinges on the voluntariness and perception as well. Although most states act in conformity with international obligations,²⁴⁶ however, even after the treaty conclusion, states could act against agreed obligations. Consider the violation of use of force in Russia. The Russian armed attack against the Ukraine territory serves as a poignant example of the perceived obligation. Similarly, violations in environmental obligations follow a similar pattern. Consider the 1987 Montreal Protocol that banned the emission of ozone-depleting chemicals. China released roughly 6,400 metric tons of CFC-11, an ozone depleting chemical, from 2008 to 2012.²⁴⁷ Further from 2014 to 2017, the emissions even increased according to a scientific study.²⁴⁸ The Copenhagen Amendments to the Montreal Protocol were ratified by China in 2003, following the London Amendments in 1991. Since 1996, China has been the foremost consumer and producer of ozone-depleting chemicals on a global scale.²⁴⁹ Yet the demand of economic growth resulted in the

²⁴⁴ Appellate Body Report, *EC-Measures Concerning Meat and Meat Products (Hormones)*, at 123, WT/DS26/AR/R & WT/DS48/AR/R (Jan. 16, 1998) (Adopted Feb. 13, 1998).

²⁴⁵ *Id.*

²⁴⁶ Louis Henkin, *HOW NATIONS BEHAVE: LAW AND FOREIGN POLICY* 9-12 (1979). See also Abram Chayes & Antonia Chayes, *Compliance without Enforcement: State Behavior under Regulatory Treaties*, 311 *NEGOTIATION JOURNAL* 311 (1991).

²⁴⁷ Stephen Montzka et al., *An Unexpected and Persistent Increase in Global Emissions of Ozone-depleting CFC-11*, 557 *NATURE*, 413 (2018).

²⁴⁸ M. Rigby et al., *Increase in CFC-11 Emissions from Eastern China Based on Atmospheric Observations*, 569 *NATURE* 546 (2019).

²⁴⁹ Jimin Zhao, *Implementing International Environmental Treaties in Developing Countries: China's Compliance with the Montreal Protocol*, 5 *GLOBAL ENVIRONMENTAL POLITICS* 58, 59 (2005).

increasing emissions of CFC-11 after its ratification to the Montreal Protocol,²⁵⁰ resulting in significant deterioration of the ozone protection measures.

Another viewpoint on compliance can be helpful from the loss aversion. Loss aversion is a psychological phenomenon that describes people's high preference for avoiding losses over earning equal rewards. In other words, individuals generally experience more anguish when they lose something than when they get it. This psychological reaction can impact decision-making in a variety of circumstances, causing people to make decisions that emphasize avoiding losses even when prospective profits are similar or larger.²⁵¹ Andrew Guzman, in his article, stated that international law has an impact on state conducts due to states' apprehension about the repercussions in terms of reputation and direct sanctions resulting from their violation. Although his article regarded states as rational actors acting to maximize the self-interest,²⁵² this dissertation adds to the argument that compliance often stems from a desire to avoid losses; states prioritize safeguarding their reputation and interests, often more than gaining new advantages. Consequently, instances of non-compliance with international legal obligations are relatively rare compared to acts of compliance.

As evidenced by the observation of states' voluntary actions, the evaluation and perception of transboundary environmental harm significantly impact decision-making and subsequent courses of action. This phenomenon underscores the importance of understanding psychological responses from a psychological standpoint. Empirical studies such as confirmation bias,²⁵³ the

²⁵⁰ *Id.* at 64.

²⁵¹ Amos Tversky & Daniel Kahneman, *Advances in Prospect Theory: Cumulative Representation of Uncertainty*, 5 J. RISK & UNCERTAINTY 296 (1992).

²⁵² Guzman, *supra* note 108, at 1827.

²⁵³ Confirmation bias refers to a cognitive bias where individuals tend to seek out, interpret, and remember information that confirms their preexisting beliefs or hypotheses, while ignoring or downplaying contradictory evidence. Raymond Nickerson et al., *Confirmation Bias: A Ubiquitous Phenomenon in Many Guises*, 2 REV. GENERAL PSYCHOLOGY, 175 (1998).

identifiable victim effect,²⁵⁴ salience bias, and availability heuristic²⁵⁵ provide valuable insights for future considerations in transboundary environmental harm governance. The psychology of voluntariness offers an additional layer of understanding on state behavior, bridging academic gap with empirical psychological studies. A psychology of voluntariness could provide a more comprehensive understanding of the assessment and perception of a state, as well as a more plausible explanation for behavior in the context of transboundary environmental harm. Compliance and treaty formulation are greatly influenced by the valuation in transboundary environmental harm governance. More aspects of transboundary environmental harm governance are, nevertheless, implicated, highlighting the multifaced nature and complexity of this issue.

2.2.2 Fragmentation

Fifth, the transboundary governance is fragmented, and the *fragmentation* could trigger certain psychological phenomena. The fragmentation concept of transboundary environmental harm governance relates to the interconnectedness of intentional environmental laws and organizations. There is no hierarchy among treaties or organizations; each holds equal importance. The international legal system revolves around state sovereignty. This fragmentation of treaties and organizations may evoke distinct psychological responses concerning the governance of transboundary environmental harm.

²⁵⁴ Identifiable victim effect refers to a cognitive bias in decision-making and empathy where individuals tend to show more concern, empathy, and willingness to help when presented with a specific, identifiable victim compared to a larger group or statistical data. This effect highlights how emotions and personal connections can significantly influence judgments and actions, often leading to disproportionate responses based on the vividness or tangibility of individual cases. Seyoung Lee & Thomas Hugh Feeley, *The Identifiable Victim Effect: A Meta-analytic Review*, 11 SOCIAL INFLUENCE 199 (2016).

²⁵⁵ Availability heuristic refers to a mental shortcut or cognitive bias in decision-making where individuals rely on readily available information or examples that come to mind easily when assessing the likelihood or frequency of events. This heuristic often leads people to overestimate the probability of events that are vivid, recent, or easily recalled, while underestimating the likelihood of less memorable or less accessible events. Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCIENCE, 1124 (1974).

Excessive choice of law could lead to information overload and decisional paralysis.²⁵⁶ With more options available, it becomes more difficult to sort through all of the data and make a well-informed decision. When faced with a greater selection, the evaluation and analysis of each option thoroughly require more time and effort, akin to a computer slowing down or crashing when overloaded. This methodical procedure can deplete the decision-maker's mental resources, which in turn impeding the decision-making process.

This phenomenon of choice overload is evident in the fragmentation of international environmental law. Consider the biodiversity conservation. Multiple conventions are involved: the Whaling Convention, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the United Nations Convention on the Law of the Sea, Fish Stock Agreement, Nagoya Protocol of the Biodiversity Convention, the general exception from General Agreement on Tariffs and Trade 1994. These massive treaties system could lead to choice overload. In addition, the fragmentation of organizations also contributes to a choice overload in a comparable way. In fisheries conservation, Regional Fisheries Management Organizations, such as International Commission for the Conservation of Atlantic Tunas, Indian Ocean Tuna Commission, Western and Central Pacific Fisheries Commission, Commission for the Conservation of Southern Bluefin Tuna and Inter-American Tropical Tuna Commission, allocate and conserve marine resources. Readers of this dissertation may see how tiresome it could be just by reading this paragraph because only listing various treaties and organizations can take a lot of time. Therefore, evidently, an excessive array of law and institutions could significantly slow down the decision and thinking process, hampering effective environmental governance.

²⁵⁶ Gary Low, *A Psychology of Choice of Laws*, 24 EUR. BUSINESS L. REV. 363, 368 (2013).

A similar situation from cognition load could play an explanatory role in the psychology of fragmentation. Cognitive load refers to the amount of mental effort or processing capability necessary to complete a task or analyze data. It encompasses the cognitive processes involved in tasks such as learning, problem solving, decision-making, and memory retention. Factors influencing cognitive load include task complexity, the volume of information to be processed, the level of novelty or difficulty, and the individual's existing knowledge and experience in the task domain. High cognitive load can cause mental fatigue, decreased performance, and issues with information processing, whereas low cognitive load facilitates smoother and more effective cognitive processing.²⁵⁷ The intricate arrangement of IEL that varies from state to state, organization to organization, group to group, could impose a high cognitive load, resulting in the failure for transboundary environmental harm governance.

Decisional paralysis is the other potential psychological reaction when there are too many choices caused by fragmentation. Decisional paralysis, also known as choice overload, is a condition in which a person has trouble making a decision because they are given with too many alternatives or information pieces. Excessive choices can cause confusion, tension, and hesitation, making it difficult for individuals to make an acceptable selection.²⁵⁸ Decisional paralysis can lead to delays, avoidance of decision-making, or incorrect and rash decisions.²⁵⁹ From the information provided in the last paragraph, a body of research has shown the complexity and pattern of fragmentation. Massive information concerning the transboundary governance under international

²⁵⁷ Roxana Moreno & Babette Park, *Cognitive Load Theory: Historical Development and Relation to Other Theories*, in COGNITIVE LOAD THEORY 9-28 (Jan Plass et al., eds., 2010).

²⁵⁸ Amos Tversky & Eldar Shafir, *Choice under Conflict: The Dynamics of Deferred Decision*, 3 PSYCHOLOGICAL SCIENCE 358 (1992).

²⁵⁹ Barry Schwartz, *Self-determination: The Tyranny of Freedom*, 55 AM. PSYCHOLOGIST 79 (2000).

law could cause decisional paralysis and imperil the transboundary environmental harm governance for states.

When individuals face and process massive legal information, the psychological short cut may lead to a wrong decision. For example, from the representative heuristic bias, states have strong impression on certain treaties while neglecting the others. The representative heuristic is a cognitive bias or mental shortcut that includes basing judgments or choices on how closely something resembles a typical example or stereotype.²⁶⁰ This could lead to a potential treaty competition or even conflict between treaty and customary international law. Consider a member of a World Trade Organization (WTO) Committee on Trade and Environment who may downplay the importance of the precautionary principle in response to the ruling made by the Appellate Body in the EC-Hormone case. The rejection of the precautionary principle as a customary international law could stand out as a notable example for such a member, leading them to disregard its progression into a customary international law. Another case, as seen through the lens of tribunal interpretation, could demonstrate the fragmentation of international institutions.

The divergent interpretations between WTO dispute settlement mechanism and the International Tribunal for the Law of the Sea (ITLOS) concerning the precautionary principle are another helpful example to demonstrate the group bias within the fragmentation of international law. While the precautionary principle undergoes development, the Appellate Body of WTO dispute settlement body sided with the U.S., rejecting its status as a customary international law.²⁶¹ However, ITLOS does not follow the step, affirming the customary law status of precautionary principles. This was evident in its ruling favoring New Zealand and Australia in the Bluefin Tuna

²⁶⁰ Daniel Kahneman & Shane Frederick, *Representativeness Revisited: Attribute Substitution in Intuitive Judgment*, in *HEURISTICS OF INTUITIVE JUDGEMENT: EXTENSIONS AND APPLICATIONS* 49-81 (T. Gilovich et al., eds., 2001).

²⁶¹ Hormones, *supra* note 244, at 13.

Case.²⁶² This split opinion could lead to group bias, manifesting as viewpoints against out-group member, group attribution, and in-group favoritism, thus potentially leading to groupthink bias.

Group attribution error could be the result of the fragmentation. The group attribution error, also known as the out-group homogeneity bias, refers to people's tendency to perceived members of a group to which they do not belong as more similar (homogeneous) and less varied than members of their own. This prejudice can lead to simplistic and often inaccurate perceptions of other groups, since people may miss the diversity and individual distinctions among such groups.²⁶³ Alternative, within a group, the groupthink bias may occur, where consensus and harmony are prioritized over critical thinking, resulting in poor decision-making or erroneous conclusions. Members in a groupthink situation may suppress dissenting viewpoints, dismiss possible risks or downsides, and rush to a conclusion without properly examining options or taking into account varied perspectives. Such bias might yield unsatisfactory results and impede the group from making sound judgments.²⁶⁴ From a study encompassing five international tribunals, it appears that the WTO Appellate Body may be particularly susceptible to groupthink effects compared to other courts.²⁶⁵ To get a step further, under the context of transboundary environmental harm governance, the legal interpretation and confirmation in the WTO could depart from other tribunals and result in the ambiguity of international legal obligation and principle.

The fragmentation in managing transboundary environmental harm can trigger various psychological responses that policymakers should take note of. The presence of numerous

²⁶² Southern Bluefin Tuna, *supra* note 88; Advisory Opinion, *supra* note 88.

²⁶³ Scott Allison & David Messick, *The Group Attribution Error*, 21 J. EXPERIMENTAL SOCIAL PSYCHOLOGY 563 (1985).

²⁶⁴ Paul't Hart, *Irving L. Janis' Victims of Groupthink*, 12 POLITICAL PSYCHOLOGY 247 (1991).

²⁶⁵ Philipp Günther, *Groupthink Bias in International Adjudication*, 11 J. INT'L DISPUTE SETTLEMENT 91 (2020).

simultaneous treaties and organizations, along with differing rulings by tribunals, can lead to specific psychological phenomena and dynamics that may undermine effective transboundary environmental harm governance.

Additionally, the cross political borders aspect of transboundary environmental harm governance can evoke distinct psychological reactions, particularly concerning the psychology of political borders, which the next section will discuss.

2.2.3 Political Borders

Sixth, the transboundary environmental harm involves environmental harm that goes beyond *political borders*, which could trigger certain psychological reactions. The psychology of political borders offers a helpful observation concerning the phenomena that pertain to the cross-border feature. Transboundary environmental harm encompasses environmental degradation that transcends the boundary of individual nations. Environmental harm that spans two or multiple countries may be considered transboundary environmental harm. This dissertation aims to explore the psychological impacts of political borders through the contention that they have the potential to cultivate a feeling of identity, thus prompting an individual psychological reaction.

The establishment of borders by humans creates divides in society and helps shape beliefs that impact people's sense of identity.²⁶⁶ International borders serve as an excellent illustration of how these distinctions impact identity. The self-identity created by political borders could also impact the valuation in environmental transboundary environmental harm. Consider how people regard foreign environmental harm and individual, the psychological impact from political borders could influence their valuation process. For one, the internal perception within a group could

²⁶⁶ Chiara Brambilla, *Borders and Identities/Border Identities: The Angola-Namibia Border and the Plurivocality of the Kwanyama Identity*, 22 J. BORDERLANDS STUD. 21, 25 (2007).

accelerate the climate change action. Results from an empirical study showed that individuals who were highly committed to a group—indicating satisfaction with the group—were more likely to follow climate-related norms within the group compared to those with lower commitment levels.²⁶⁷ The feeling of belonging contributes to a group satisfaction.²⁶⁸ The border identification facilitates the intra-psychological recognition and the pro-climate change action.

The other example concerning the psychology of border is relevant to the subjective perception of risks. People tend to perceive the disaster outside a political border as less serious and immediate.²⁶⁹ Environmental undervaluation may result from the state border, according to the study. Individuals frequently fail to recognize the gravity of a catastrophe originating from a different nation-state due to their perception of state boundaries as mere physical barriers. However, the seriousness of an equally distant pollution that comes from their own state border was not underestimated. This study identified, based on the findings of three empirical studies, that such a border bias occurs when individuals classify states as distinct superordinate categories, reducing the likelihood of events occurring together compared to locations within a state. Political borders are often seen as tangible obstacles that aid in the containment of environmental impacts.²⁷⁰

Another study examines how national and local identification processes influence perceptions of a local environmental concern, specifically focusing on the contamination of British beaches in accordance with EU environmental standards. According to geographic identification and social identity theories, English people harbor a positive bias when evaluating both domestic

²⁶⁷ Torsten Masson & Immo Fritsche, *Adherence to Climate Change-Related Ingroup Norms: Do Dimensions of Group Identification Matter?*, 44 EUR. J. SOCIAL PSYCHOLOGY 455 (2014).

²⁶⁸ John Hunter et al., *Subjective Belonging and In-Group Favoritism*, 73 J. EXPERIMENTAL SOCIAL PSYCHOLOGY 136 (2017).

²⁶⁹ Arul Mishra & Himanshu Mishra, *Border Bias: The Belief that State Borders can Protect against Disasters*, 21 PSYCHOLOGICAL SCIENCE 1582 (2010).

²⁷⁰ *Id.*

and international beaches, with their views on beach pollution being shaped by ingroup preferences. The study involved administering questionnaires to 347 English secondary school students from six coastal areas, where three beaches were categorized as “polluted” and the remaining three as “unpolluted,” according to EU standards. Despite the physical evidence of contamination or the EU classification, both local and national identities were expected to predict the diversity in perceived pollution levels. Overall, the findings supported the main hypothesis: individuals with higher levels of civic or national attachment believed beaches in their communities and across the country were less contaminated. Traditional environmental evaluation indicators, such as socio-demographic variables, environmental concern, and environmental use, were found to be ineffective predictors of beach contamination perceptions. Denial of physical pollution evaluations was considered as a means of combating the threat to place identity posed by a powerful outsider (such as the EU) who branded local beaches.²⁷¹

The psychology of political borders also impacts how individuals perceive external perspective on how to value lives outside the political border. The identifiable victim effect plays an important role here fleshing out the situation. An empirical study that observed the immigration issue in Europe and tested the identifiable victim effect concluded that the political sentiment increased when the victim was recognizable. During the migration crisis of the 2010s, many immigrants died on their migration trip to Europe. In 2015 alone, over 3,800 immigrants and refugees died while attempting to cross the Mediterranean Sea on board large vessels or small floating boats. Among such dreadful tragedies, two specific occurrences were investigated in the study: over a week in April 2015, almost 1,200 individuals drowned in two consecutive events

²⁷¹ Marino Bonaiuto et al., *Identity Processes and Environmental Threat: The Effects of Nationalism and Local Identity Upon Perception of Beach Pollution*, 6 J. COMMUNITY & APPLIED SOCIAL PSYCHOLOGY 157 (1996).

after their boats capsized in the Mediterranean Sea. Later that year, on September 2nd, Alan Kurdi, a three-year-old Syrian toddler, drowned. This study used these two occurrences to explore the "identifiable victim effect" on public attitude toward immigrants in Portugal, utilizing a natural experiment design and the date of the European Social Survey. In contrast to the drowning of over a thousand statistical victims, the results demonstrated that the tragic drowning of a recognized kid can cause a shift in public perception.²⁷²

In the context of transboundary environmental harm, the identifiable victim effect could impact the perception and valuation of cross-border environmental injuries, especially when the victim is not identifiable. Environmental harm beyond the national border could somehow be hard to identify, and its cause, consequences, and injuries may seem too distant to understand and challenging to comprehend. Under certain circumstances, people tend to underestimate or even neglect the transboundary environmental harm that occurs outside their political border.

Individual psychological identity is influenced and shaped by political borders. This dissertation argues that individuals' psychological beliefs and perceptions are influenced by the political borders surrounding transboundary environmental harm. Political borders play a psychologically important role in the individual behavior, fostering feelings of identification and belonging that can trigger particular psychological reactions or heuristics. Certain psychological phenomena are also found relevant to the context of political borders. Therefore, understanding the psychology of political borders helps us better comprehend the valuation and perception process of individuals. Additionally, this psychological insight may provide guidance policymakers. Underestimating the level of damage caused by environmental harm extending

²⁷² Odelia Heizler & Osnat Israeli, *The Identifiable Victim Effect and Public Opinion Toward Immigration: A Natural Experiment Study*, 93 J. BEHAVIORAL & EXPERIMENTAL ECONOMICS, 101713 (2021).

beyond national borders can result in insufficient or inadequate preparation for environmental adaptation measures. In order to better address transboundary environmental challenges, policymakers could gain insight into the valuation process and develop more effective adaptation and risk measures by adopting a psychological perspective.

2.3 THE INTEGRATED HEART OF THE PSYCHOLOGY OF IEL

IEL aims to solve the issue of transboundary environmental harm by combining the characteristics of the environment with transboundary governance. Rowell and Bilz describe environmental harm as having three distinct characteristics: diffusion, complexity, and non-human qualities. In order to better understand the psychology of IEL, this research also takes into account transboundary factors such the intrinsic character of international law, voluntariness, fragmentation, and effects of political borders. All characteristics could raise particular psychological interaction in the context of transboundary environmental harm governance. Together, these six traits define the contour of transboundary environmental harm governance and trigger an individual psychological reaction that is particularly relevant to IEL.

The preceding discussion outlined the six features of transboundary environmental harm governance that could elicit specific psychological responses. This section extends the previous discussion and explores the potential for a psychological approach in IEL. As previously discussed, the psychology of IEL contains two main parts, environmental harm and transboundary governance, and this section focuses how the psychology of IEL can be employed in the realm of IEL in these two specific areas, respectively (see the last part of the diagram below).

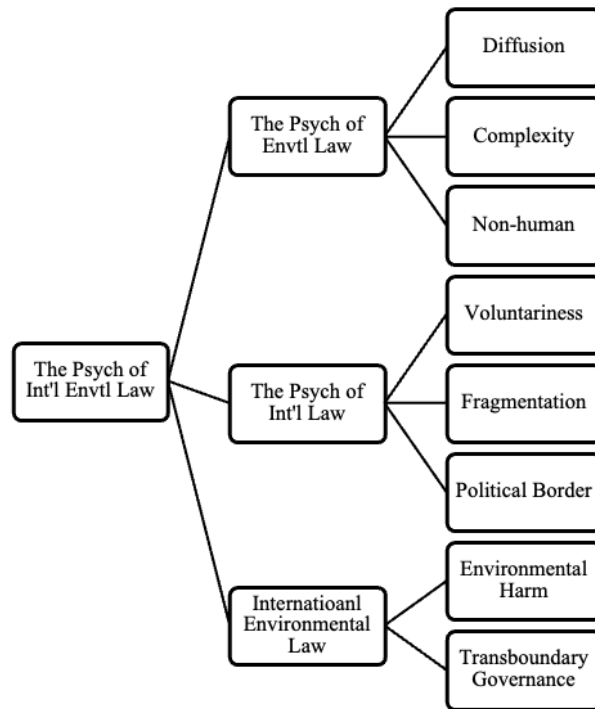


Figure 3: The Features of the Psychology of International Environmental Law

From the author's observation, seven domains within IEL are important to consider under the transboundary environmental harm governance. These domains encompass:

- 1) air pollution control, exemplified by the 1979 Convention on Long-Range Transboundary Air Pollution (LRTAP) and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer;²⁷³
- 2) water management, represented by the 1997 Convention on the Law of the Non-navigational Use of International Water Courses;²⁷⁴

²⁷³ Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, 1302 U.N.T.S. 217; Montreal Protocol on Substances that Deplete the Ozone Layer, Sep. 16, 1987, 1522 U.N.T.S. 26369.

²⁷⁴ Convention on the Law of the Non-Navigational Uses of International Watercourse, May 21, 1997, 2999 U.N.T.S. 77.

- 3) ocean preservation, such as the 2021 Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction;²⁷⁵
- 4) biodiversity conservation, illustrated by the 1993 Convention on Biodiversity;²⁷⁶
- 5) climate change, as seen in the 2015 Paris Agreement;²⁷⁷
- 6) hazard surveillance, as evidenced by the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal;²⁷⁸ and
- 7) Arctic and Antarctica governance, as outlined in the 1959 Antarctica Treaty.²⁷⁹

This section seeks to illustrate how the seven legal domains can be utilized within the context of the psychology of IEL. In pursuit of this objective, the section employs two key features, transboundary governance and environmental impact, as analytical tools to illustrate the practical application of the psychology of IEL. Additionally, examples from domains within IEL will be provided for further elaboration.

2.3.1 Transboundary Governance

IEL addresses issues of harm that transcend national borders, requiring governance mechanisms that intersect with principles found in public international law. The psychological insights discussed earlier in Chapter 2 provide a valuable framework for understanding the transboundary governance aspect of IEL. This research argues that incorporating psychological perspectives can offer diverse and alternative explanations for the formation, drafting, and

²⁷⁵ Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction, June 19, 2023, C.N.202.2023. TREATIES-XXI.10.

²⁷⁶ Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79.

²⁷⁷ Paris Agreement, Dec. 12, 2015, 3156 U.N.T.S. 79.

²⁷⁸ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, 1673 U.N.T.S. 57.

²⁷⁹ Antarctic Treaty, June 23, 1961, 402 U.N.T.S. 71.

compliance processes within IEL. Viewing IEL through a different lens enriches the scholarly discourse and contributes to the ongoing development of IEL in both theoretical and practical contexts.

Chapter 2 of this thesis delved into the transboundary governance within IEL, encompassing the aspects of voluntariness, fragmentation, and political borders. The subsequent analysis aims to explore each of these characteristics in the specific context of transboundary governance of environmental harm.

As noted in Chapter 2, voluntariness lies at the heart of transboundary environmental harm governance, as evidenced by insights from the foundation of IEL. For instance, treaties require the consent of states, while customary international law involves *opinio juris*. These examples highlight the willingness of states or their decision-makers to participate. Without this voluntary consent or compliance, transboundary environmental harm cannot be effectively addressed. Recognizing the importance of voluntariness in state actions, the inclusion of a psychological perspective becomes crucial. Psychology provides an empirical approach that focuses on individual valuation and perception, offering practical insights into human behavior. These empirical findings can be valuable for international legal scholars seeking a deeper understanding of state actions.

The feature of voluntariness appears in many ways contingent upon the circumstances. Reciprocity, which entails the feeling of reciprocal advantage, is a simple instance. Bilateral environmental treaties can best exemplify the phenomenon of reciprocity. One such example is the River Uruguay Statute, which exists between Argentina and Uruguay. This treaty establishes systems for managing the river in a coordinated and efficient manner. However, in 2006, Argentina accused Uruguay of unilaterally allowing the building of two pulp mills near

the Uruguay River without following the obligatory prior notice and consultation processes stipulated in the 1975 Statute.²⁸⁰ In other words, Uruguay unilaterally broke the balance of reciprocity. To minimize the potential risks associated with cooperation, it's essential to effectively handle relationships based on reciprocal interaction. This is because the formation and sustainability of partnerships are shaped by how individuals perceive the benefits and drawbacks involved in such interactions.²⁸¹ In this case, Argentina perceived that Uruguay violated the agreed obligation codified in the 1975 Statute, and therefore filed against Uruguay in ICJ.

The 'indirect' nature of international Law can trigger psychological reactions for individual valuation. Intermediaries connect international law to its subject matter indirectly, as state officials and representatives negotiate laws that bind states rather than individuals. These indirect associations can lead to unique psychological responses. The notion of transboundary environmental harm is especially distinct in the context of identifying victims due to its diffused and complex nature.²⁸² Consider the global climate change. The contrast between emissions and their impacts complicates feelings of guilt or anger. Anger and shame are more manageable when a crime actually harms a victim, and the perpetrators are held accountable. Nonetheless, climate change is widespread and unpredictable meaning that the carbon emissions released by everyone affect the atmosphere, but who will suffer the most remains unknown and undetermined. Burning fossil fuels has consequences, but perpetrators and affected parties are unknown.²⁸³ This situation could be the potential explanation of climate skepticism and denial. The identifiable victim effect

²⁸⁰ Pulp Mills, *supra* note 24.

²⁸¹ MARK ABRAHAMSON, *SOCIOLOGICAL THEORY: AN INTRODUCTION TO CONCEPTS, ISSUES, AND RESEARCH* 186 (1981).

²⁸² Antony Pemberton, *Environmental Victims and Criminal Justice: Proceed with Caution*, in *ENVIRONMENTAL CRIME AND ITS VICTIMS* 66-70 (Toine Spapens et al., eds., 2014).

²⁸³ Leo Barasi, Climate Change Apathy, not Denial, is the Biggest Threat to Our Planet, *THE GUARDIAN*, Oct. 5, 2018, at <https://www.theguardian.com/commentisfree/2018/oct/05/climate-change-apathy-not-denial-threat-planet>.

might explain these dynamics, as climate change law rarely targets specific individuals. An identifiable victim effect is a clearly identifiable individual or group that can be pinpointed as the source of injury or suffering.²⁸⁴ Due to the indirect nature of climate change law, it is often challenging to identify specific victims, making it difficult for individuals to have emotional reactions and take actions against transboundary environmental harm as such.

Additionally, as in other areas of international law, fragmentation is a common occurrence in IEL. The decentralized nature of international law means that although state sovereignty holds primary authority, international laws and institutions are also considered equal and operate in parallel to each other. Regardless of whether it's a global convention or a regional treaty, both have equal effectiveness and binding force. A state cannot use compliance with one obligation to justify a violation of another treaty.

Fragmentation in IEL leads to information overload and results in decisional paralysis. Chapter 2 of this dissertation uses the marine biodiversity conservation as an example to explicate how extensive the legal information could be. This section builds upon the content of Chapter 2 by providing concrete examples of international tribunals, thereby reinforcing the extensive information presented earlier to further show how the intrinsic and massive information trigger psychological phenomenon.

Several international tribunals have jurisdiction over international environmental issues. The major judicial tribunal under United Nations is International Court of Justice (ICJ), which has jurisdiction over treaty interpretation, question of international law, breach of international obligation, and the extent of reparation.²⁸⁵ The purview also includes IEL disputes. Several

²⁸⁴ Karen Jenni & George Loewenstein, Explaining the Identifiable Victim Effect 14 J. Risk & Uncertainty 235 (1997).

²⁸⁵ *Supra* note 65 art. 36(2).

environmental cases have presented before ICJ. For instance, Gabčíkovo-Nagymaros,²⁸⁶ Pulp Mills,²⁸⁷ and Silala River cases,²⁸⁸ all involved transboundary environmental harm governance and utilization.

This does not include environmental issues concerning ocean conservation. ITLOS manages multiple marine relevant cases as precedents. The Tribunal's jurisdiction includes all disputes and applications brought before it as per the Statute of the ITLOS and any additional matters specified in agreements granting authority to the Tribunal.²⁸⁹ If all the parties involved in another existing treaty or convention related to the subject matter of the ITLOS Statute agree, any disputes about interpreting or applying that treaty or convention can be submitted to the Tribunal as per the agreement.²⁹⁰ ITLOS has declared the precautionary principle as a customary international law character and decided in favor of New Zealand and Australia in the Bluefin Tuna Case.²⁹¹ ITLOS has accelerated the bilateral fisheries cooperation between Chile and EU in another Swordfish Stocks case.²⁹²

In addition to international judicial tribunals, the compliance committee under multilateral environmental agreements (MEAs) also plays an important role in supervising and managing the compliance status quo of contracting parties. The Montreal Protocol Compliance Committee is in charge of monitoring compliance with measures designed to protect the ozone layer, as stated in the Montreal Protocol on Substances that Deplete the Ozone Layer. The Basel Convention

²⁸⁶ Gabčíkovo-Nagymaros, *supra* note 24.

²⁸⁷ Pulp Mills, *supra* note 24.

²⁸⁸ Silala, *supra* note 27.

²⁸⁹ Statute of the International Tribunal for the Law of the Sea (Annex VI of the United Nations Convention on the Law of the Sea art. 21, Dec. 10, 1982, 1833 U.N.T.S. 3.

²⁹⁰ *Id.* art. 22.

²⁹¹ Southern Bluefin, *supra* note 88, para. 89; Advisory Opinion, *supra* note 88.

²⁹² Case concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean (Chile v. EU), Order of Dec. 16, 2019, p. 17, INTL TRIB L. OF THE SEA, https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_7/published/C7_Ord_161209.pdf.

Compliance Committee is responsible for ensuring compliance with laws governing the cross-border transportation and disposal of hazardous wastes, as established by the Basel Convention on the Control of Transboundary Movements and Their Disposal. The Nagoya Protocol Compliance Committee is in charge of ensuring that regulations governing access to genetic resources and the fair and equitable sharing of benefits resulting from their use can be followed, as outlined in the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Use. These illustrations do not encompass all MEAs, but the multitude of institutions can potentially prolong the decision-making process and hinder choices, potentially leading to decisional paralysis, as a consequence of institutional fragmentation.²⁹³

The transboundary governance involves matters and issues that transcend political borders. The location of harm can affect people's perception of its magnitude: research suggests, for example, that catastrophes occurring beyond national boundaries are perceived to be less severe.²⁹⁴ This implies that individuals tend to undervalue transboundary impacts. The psychology of borders also extends to how individuals perceive risks subjectively. There is a tendency for people to view disasters occurring beyond political borders as less serious. An empirical study suggests that environmental undervaluation can be influenced by state borders. Individuals often fail to grasp the severity of a disaster originating from another nation-state because, according to the early study, individuals might perceive state boundaries as mere physical barriers.²⁹⁵ However, if a similar disaster happens within their own state, though it might be far from where perceivers are located, individuals will not underestimate the seriousness of the pollution.²⁹⁶ Based on the findings of the

²⁹³ Schwartz, *supra* note 259; Sheena Iyengar & Mark Lepper, *When Choice is Demotivating: Can One Desire Too Much of a Good Thing?*, 79 JOURNAL OF PERSONALITY & SOCIAL PSYCHOLOGY 995 (2000); Amos Tversky & Eldar Shafir, *Choice under Conflict: The Dynamics of Deferred Decision*, 3 PSYCHOLOGICAL SCIENCE 358 (1992).

²⁹⁴ Mishra & Mishra, *supra* note 269.

²⁹⁵ *Id.*

²⁹⁶ *Id.*

three empirical studies, This study finds a border bias in which people perceive states as distinct entities because their environmental pollutions are less likely to take place simultaneously than those that occur within a state. Political borders are commonly seen as tangible barriers that limit the spread of environmental impacts.

In cases of transboundary environmental harm, state leaders and the public might view pollution occurring outside their country's borders as less significant, impacting the credibility of efforts in transboundary governance. This perception can also influence the creation of and adherence to international legal frameworks. Consider how this idea/mechanism applies to the conservation of marine biological diversity in areas beyond national jurisdiction. Some discussions argue for the activation of intellectual property rights, which are private rights, to safeguard marine resources, as elaborated in the following section. However, using a private rights approach to protect public goods like marine biodiversity generates a conflict, as private rights are aimed at securing individual interests rather than environmental preservation. States may underestimate the significance of environmental resources that are beyond their national jurisdiction, possibly leading to undervaluation of conservation efforts in areas where the protection is needed.

The psychology of political borders also influences how individuals perceive the value of lives beyond those borders.²⁹⁷ This is exemplified by the identifiable victim effect, which plays a significant role in shaping these perceptions.²⁹⁸ An empirical study conducted on the immigration issue in Europe examined the identifiable victim effect and found that public sentiment was heightened when the victim was easily recognizable.²⁹⁹ During the migration crisis of the 2010s,

²⁹⁷ Arden Rowell & Lesley Wexler, *Valuing Foreign Lives*, 48 Ga. L. Rev. 501 (2014).

²⁹⁸ Jenni & Loewenstein, *supra* note 284.

²⁹⁹ Odelia Heizler & Osnat Israeli, *The Identifiable Victim Effect and Public Opinion Toward Immigration: A Natural Experiment Study*, 93 J. BEHAVIORAL & EXPERIMENTAL ECONOMICS, 1 (2021).

numerous immigrants lost their lives while attempting to reach Europe. In 2015, for instance, more than 3,800 immigrants and refugees died while crossing the Mediterranean Sea on various types of vessels.³⁰⁰ Among these tragic incidents, the study focused on two specific events: the drowning of nearly 1,200 individuals in consecutive incidents where shipping/boarding boats capsized in April 2015 and the drowning of a three-year-old Syrian boy Alan Kurdi on September 2nd of the same year.³⁰¹ Through a designed experiment and analysis of data from the European Social Survey, the study investigated the impact of the "identifiable victim effect" on public attitudes toward immigrants in Portugal. The results revealed that compared to the statistical victims of the mass drownings, the tragic death of a recognizable child led to more discernible shift in public perception.³⁰²

Based on this discovery, an effective strategy for drawing attention to specific issues related to transboundary environmental harm is to highlight individual victims and evoke empathy from others. For instance, climate change governance could focus more on the situation facing Pacific coastal nations like Tuvalu and the Marshall Islands. By illustrating how climate change is causing sea levels to rise and could potentially lead to the populations being displaced from their cherished homelands, a greater level of attention can be drawn to the issue of climate change. This approach can enhance the legitimacy of governance efforts aimed at addressing such challenges. The application of a psychological approach proves beneficial in this context for regulatory purposes.

³⁰⁰ U.N. International Organization for Migration, IOM Counts 3,771 Migrant Fatalities in Mediterranean in 2015, Jan 5, 2016, at <https://www.iom.int/news/iom-counts-3771-migrant-fatalities-mediterranean-2015>.

³⁰¹ Heizler & Israeli, *supra* note 299.

³⁰² *Id.* p. 9

2.3.2 Environmental Harm

IEL governs environmental damage that extends beyond national borders, sharing common characteristics with general environmental harm. These characteristics include diffusion, complexity, and non-human quality, as described in the existing literature.³⁰³ This section elaborates on these features within the framework of transboundary environmental harm. To illustrate, the discussion centers on the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement) as a case study.

The BBNJ Agreement was developed with the purpose of preserving marine biodiversity in ocean areas commonly known as in the high seas or the seabed, which lie beyond national jurisdictions. This preservation was intended to promote and accomplish a sustainable use of marine resources. The BBNJ Working Group held its first meeting in 2006 and continued to organize meetings throughout the years, despite their inability to reach a consensus on the legal and institutional structures necessary to achieve their goal of preserving and ensuring the sustainable use of BBNJ. Despite some initial failures in reaching an agreement, a consensus was reached in 2011, and the Working Group ultimately recommended to the United Nations General Assembly that a process be initiated to ensure that the legal framework for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction effectively addresses these issues by identifying gaps and ways forward, including through the implementation of existing instruments and the possible development of a multilateral instrument.³⁰⁴ In addition, the

³⁰³ Rowell & Bilz, *supra* note 29, pp. 31-148.

³⁰⁴ G.A. Res 66/231, (Dec. 24, 2011), Annex – Recommendations of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to The Conservation And Sustainable Use Of Marine Biological Diversity Beyond Areas of National Jurisdiction, Annex para (a).

Working Group suggested incorporating a direct discussion of marine genetic resources as one of the process components. This suggestion includes environmental impact assessments, capacity building, equitable benefit sharing, the formation of marine protected areas and other kinds of area-based management, the distribution of maritime technologies.

After three years of the deliberation, the BBNJ Working Group drafted a resolution that was passed on July 6, 2015, by the United Nations General Assembly. In response to the approval of Resolution 69/292 by the United Nations General Assembly, a Preparatory Committee was tasked with presenting proposals for a potential legally binding instrument on BBNJ.³⁰⁵ In 2016, the Preparatory Committee held four meetings, and in September of 2017, it delivered its findings and recommendations to the General Assembly of the United Nations. These events laid the groundwork for the approval of Resolution 72/249, which then directed the International Governmental Committee to prepare the BBNJ treaty.³⁰⁶

In August 2022, a negotiation began again in New York.³⁰⁷ However, the dismay of the delegates at failing to reach an agreement was obvious. How to equitably distribute the marine genetic resources (MGRs) benefits across industrialized and less-industrialized nations that might directly access them was a particularly difficult subject. The pharmaceutical, cosmetic, agricultural, antifouling, and adhesives sectors have discovered that biochemicals extracted from MGRs are valuable. In negotiations with one another, Latin American states have criticized the affluent powers' inflexibility and exclusive focus on their own economic aims. They sought

³⁰⁵ G.A. Res 69/292 (July 6, 2015), para 1(a), ‘*Development of an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*’; See also Ronan J. Long & Mariamalia R. Chaves, *Anatomy of a New International Instrument for Marine Biodiversity beyond National Jurisdiction, First Impressions of the Preparatory Process*, 23 ENVTL. LIABILITY 213 (2015).

³⁰⁶ Cymie Payne, *Biodiversity in High Seas Areas: An Integrated Legal Approach*, 21(9) AM. SOC’Y INT’L L. INSIGHTS (2017).

³⁰⁷ G.A. Res. A/76/L.46.

increased flexibility to ensure that all stakeholders, rather than just a select few economic interests, could access the benefits of MGRs overseas. On the last day of that discussion session, the Conference, in deliberating the path forward, decided to suspend the fifth session and reconvene the discussion at a later date to be determined. Based on this suspension, in its resolution 77/248 on “Oceans and the law of the sea”,³⁰⁸ the General Assembly requested the Secretary-General to convene the resumed fifth session of the Conference at United Nations Headquarters between 20 February and 3 March 2023.

Despite numerous discussions, the governments are still unable to reach an agreement at present. A handful of questions regarding the distribution of interests receive the most consideration. Questions continue to linger, and such concerns encompass whether access to the marine genetic resources (MGRs) of the deep seabed should be free or be regulated, and whether the resulting monetary benefits would be shared, as well as whether the conservation efforts of marine biodiversity in those areas will primarily be the responsibility of the individual user or the international community. These are only a few instances of the types of questions that remain unanswered.³⁰⁹ The main issue for this negotiation still lays in the MGRs given that genomic products are lucrative for countries though the biotechnology industry is still developing.³¹⁰

Debates on the right to the MGRs can be divided in two camps: the Group of G-77 claimed that MGRs is subject to the Common Heritage of Mankind (CHM),³¹¹ a resource that belongs to

³⁰⁸ UNGA A77/L.36.

³⁰⁹ Efthymios Papastavridis, *The Negotiations for a New Implementing Agreement under the UN Convention on the Law of the Sea Concerning Marine Biodiversity*, 69 INT’L & COMP. L. Q., 585, 587 (2020).

³¹⁰ *Id.*

³¹¹ The statement on behalf of the Group of 77 and China at the opening of the Third Session of the IGC (New York, Aug. 19, 2019), underscoring that the goal the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction ‘can only be achieved when guided by the bedrock principle of the Common Heritage of Mankind’, at <http://statements.unmeetings.org/media2/21996878/palestine-obo-g77-and-china.pdf>.

the humanity, and that their resources are available for the use and benefit of all.³¹² Another camp argued that MGRs should be regulated under the umbrella of the freedom of the high sea and traditional intellectual property regulations.³¹³

The divergent debate exposes the devaluation of the environment that took place during the negotiation, as the goals of certain countries were manifestly incompatible with the purpose of sustainable usage. If, for instance, the use of MGRs is legal in accordance with the freedom of the high seas and the customary laws controlling intellectual property, then how can one be certain that the spread of these MGRs will not harm the marine biota? Since the history of the negotiations does not provide a solution to this riddle, it is possible that further explanations could shed light on the situation. The traditional norms governing intellectual property guarantee and protect the emergence of an intellectual rights owner. It is a private right that is protected by the respective national governments.³¹⁴ In other words, the goal of traditional laws pertaining to intellectual property is not to ensure the long-term viability of any particular resource base; rather, the primary focus is to safeguard the private rights of the creator regarding inventions, writings, musical compositions, designs, and other similar works. This legal thesis may run counter to the purposes of the Convention on Marine Biodiversity which are now under negotiation, for countries are claiming MGRs in accordance with existing intellectual property rights. The objective of intellectual property law, which emphasizes the private preservation of artists' works, is in conflict with the mission of the BBNJ Agreement, which seeks to improve the conservation and sustainable

³¹² Bradley Larschan & Bonnie Brennan, *The Common Heritage of Mankind Principle in International Law*, 21 COLUM. J. TRANSNAT'L L. 305 (1982).

³¹³ Japan, Korea, Iceland, Russia, US in the course of the fourth session of the Preparatory Committee (PrepCom) of the IGC on BBNJ (July 10-21, 2017); see, *Summary of the Fourth Session of the Preparatory Committee on Marine Biodiversity beyond Areas of National Jurisdiction*, 25(141) Earth Negotiations Bulletin (July 24, 2017), at <https://enb.iisd.org/download/pdf/enb25141e.pdf>.

³¹⁴ See Preamble of the Marrakesh Agreement establishing the World Trade Organization, Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 1867 U.N.T.S. 4.

use of marine biodiversity. The objective of intellectual property law emphasizes the private preservation of artists' works. Because the principles of two different laws are in some way incompatible with each other, the law of intellectual property might not ensure an environmentally responsible ways of utilizing marine biodiversity.

The BBNJ Agreement purportedly centered on sustainability as its core principle. However, sustainability was not the primary focus during the negotiations that determined how to allocate marine biodiversity for human utilization.³¹⁵ Utilizing the environment in a sustainable manner guarantees that renewable resources will not be depleted, making it the most crucial aspect in ensuring environmental conservation. If one wants to preserve the natural world, they must design a system that ensures a sustainable operation and continuous growth of an ecosystem. However, governments which maintained that MGRs should be managed by traditional intellectual property rights did not lessen the risk of depletion of marine resources. They incorrectly misjudged the amount of accessible natural resources and placed their own wants ahead of those of others. Incorporating MGRs as a policy option into CHM would aid the convention in attaining its sustainability purpose more effectively. Nonetheless, certain countries deviated from the environmental concern and disregarded the private character of intellectual property protection in the negotiation.

The potential justification for this undervaluation may be rooted in psychological factors. From the standpoint of the psychology of environmental harm, the occurrence of transboundary environmental harm has the potential to cause the underestimation of environmental value.³¹⁶ The diffusion, complexity, and non-human interaction might misinterpret the assessment of

³¹⁵ Alice B. M. Vadrot et al., *Who Owns Marine Biodiversity? Contesting the World Order through the 'Common Heritage of Humankind' Principle*, 31ENVTL POLITICS, 226 (2022).

³¹⁶ Rowell & Bilz, *supra* note 29, p. 215-6.

damages itself. Hedonic forecasting, a cognitive phenomenon related to diffusion, demonstrates how individuals typically underestimate the impact of the environment. This behavior demonstrates individuals' inclination to prioritize the current moment and their inability to anticipate forthcoming measures for mitigation or adaptation.³¹⁷ The spread of harm across time in a transboundary context may lead to a lack of focus on addressing contamination issues.³¹⁸ Take into account the consequences of prolonged nuclear radiation,³¹⁹ which remained undiscovered until influence or effect from previous instances began to manifest. Another related psychology reaction is relevant to present bias. Present bias refers to the influence of long-term environmental impacts on individuals' perceptions. Individuals highly appreciate immediate satisfaction.³²⁰ In essence, individuals exert significant effort to evade risk. This has the potential to alter the outcome of environmental impact evaluations. The gradual expansion of transboundary environmental harm may lead to miscalculations and inadequate management and mitigation measures. In the BBNJ Agreement context, the selection of a conservation system might indicate a preference. Consider there have been discussions about using intellectual property rights as a replacement for the common heritage of mankind approach.

Furthermore, the environmental impact of diverse behaviors on marine biological diversity is complex. One cause can exert influence on another, and one cause can be embedded within another. This intricacy can impact the perspective on the psychological causality. Individuals with cognitive limitations may experience more difficulty in comprehending environmental complexity. Individuals tend to favor concise and efficient mental strategies when dealing with information as a result of this obstacle. When an environmental impact encompasses several

³¹⁷ Wilson et al., *supra* note 187.

³¹⁸ Rowell & Bilz, *supra* note 29 p. 215.

³¹⁹ Listwa, *supra* note 188.

³²⁰ O'Donoghue & Rabin, *supra* note 189; Frederick et al., *supra* note 189.

significant components, individuals exhibit diverse concerns and reactions. For example, the concept of causation can be oversimplified when it is represented as a linear relationship, which can distort our understanding of reality.³²¹ Cognitive exploration templating simplifies intricate concepts into fundamental templates.³²² When this is effective, the process of locating templates enables us to classify a select number of essential characteristics and simplify them, making further allowance for navigating, regulating, and providing explanations for intricate phenomena.³²³ Nevertheless, simplifying the process of templating may include certain drawbacks. The presence of the templating behavior or availability heuristic bias might lead to a distorted perception of environmental risks, hence diminishing the effectiveness of conservation measures.³²⁴ The debate between intellectual property rights and the common heritage of mankind can offer insights into this preference, as individuals can intuitively gain benefits from intellectual property rights faster than from the common heritage of mankind. Although the common heritage of mankind has been utilized for many years, its immediate benefits are not readily apparent. This perception of immediate benefits might stem from simplification processes or template-based valuations, which psychological observations could elucidate.

Environmental conservation unites both human and non-human elements, resulting in psychological responses that impact the assessment of cross-border damages. Individuals exhibit inconsistent valuation of non-human objects.³²⁵ There are other factors that could contribute to this, such as the size of the animal, its prevalence, or the level of protection it receives. For

³²¹ Nasibeh Talebi et al., *nCREANN: Nonlinear Causal Relationship Estimation by Artificial Neural Network; Applied for Autism Connectivity Study*, 38 IEEE TRANSACTIONS ON MEDICAL IMAGING, 2883 (2019).

³²² Mattson, *supra* note 202.

³²³ Joanna Brooks et al., *The Utility of Template Analysis in Qualitative Psychology Research*, 12 QUALITATIVE RESEARCH IN PSYCHOLOGY, 202 (2015).

³²⁴ Rowell & Bilz, *supra* note 29, pp. 25, 36.

³²⁵ Rowell & Bilz, *supra* note 29, pp. 95-6.

example, the tendency to attribute human characteristics to the environment is more pronounced for creatures that have a resemblance to humans. The operation of anthropomorphism may result in mammals receiving more focus than other species.³²⁶ Anthropomorphism also changes how wildlife value is perceived and in shaping evolving attitudes toward wildlife management, particularly in developed nations.³²⁷ This alternative valuation process may result in divergent conservation treatment and disrupt the essential conservation control.³²⁸ For example, in the context of the BBNJ Agreement, negotiators may more focus on the valuable marine genetic resources from marine mammals and strive to apply the intellectual property rights, rather than the common heritage of mankind.

The negotiator's deviation from environmental concerns and emphasis on the private rights mechanism in relation to the BBNJ Agreement can be understood through a psychological approach. The negotiators underestimated the importance of marine biodiversity and disregarded its conservation measures. The issue of biodiversity diffusion manifests itself through temporal and spatial dispersion. It may require several decades for us to fully comprehend the consequences of the decline in marine biodiversity. Negotiators may prioritize the impending economic interests over environmental concerns. The process of simplifying complexity and identifying patterns in negotiations mirrors analogous cognitive phenomena. The intricate nature and process of nesting marine biodiversity issues leads to simplification and underestimating of transboundary effects.

The psychology of IEL provides valuable insights into the reasons behind individual decision-making processes. It complements rational choice theory and offers alternative

³²⁶ Timothy Eddy et al., *Attribution of Cognitive States to Animals: Anthropomorphism in Comparative Perspective*, 49 J. SOCIAL ISSUES, 87 (1993).

³²⁷ Michael Manfredo et al., *How Anthropomorphism is Changing the Social Context of Modern Wildlife Conservation*, 241 BIOLOGICAL CONSERVATION, 1 (2020).

³²⁸ M. Root-Bernstein et al., *Anthropomorphized Species as Tools for Conservation: Utility beyond Prosocial, Intelligent and Suffering Species*, 22 BIODIVERSITY & CONSERVATION, 1577 (2013).

explanations for the valuation process. Psychological factors impact various aspects of our lives, and studying these factors can help contribute to a deeper understanding of human behavior. This is particularly relevant in the context of IEL, which encompasses transboundary governance and environmental impacts. These factors can trigger specific psychological phenomena that influence how individuals make decisions and behave. Therefore, this research contributes valuable observations for future studies, whether in the realm of psychology within IEL or other environmental-related areas.

To gain a deeper grasp of the theory, the psychology of IEL will be practically applied in chapters 4 to 6. Following the development and elucidation of the psychology of IEL, this research will further utilize the theory in practical scenarios. These applications will span three areas: Chapter 4 will delve into the Convention on the Regulation of Whaling, exploring why there is an exclusive convention for whale protection and offering additional perspectives on its violations. Chapter 5 will analyze the Environmental Goods Agreement of the World Trade Organization, providing alternative insights into understanding the failure of this negotiation. Finally, Chapter 6 will examine Taiwan's involvement in global climate change efforts, explaining why Taiwan persists in participating in international legal frameworks despite its ambiguous legal status in the international community. This research posits that through these case studies, the theory of the psychology of IEL can be better understood and utilized.

2.4 KEY TAKEAWAYS

The previous diagram, Figure 3, portrays the structure of the psychology of IEL. The psychology of IEL merges the features of environmental harm with the cross-border political character(s) from international law. The core focus of the psychology of IEL lies in the governance of transboundary environmental harm. In conjunction with the features of international law, this

research has highlighted voluntariness, fragmentation, and political borders, highlighting the nature of the psychology of IEL.

The psychology of IEL is in its infancy. While further exploration is needed, existing studies shed lights on the uncharted territory that could further enhance the international legal discussion. At its core, IEL addresses the governance of transboundary environmental harm. Taking a step further, integrating a psychological perspective on transboundary environmental harm could provide a diverse viewpoint for legal discussions, valuation processes, and state behavior. The intersection of law and psychology offers alternative perspectives on the process of evaluating and determining the feasibility of proceeding in legal circumstances. More nuanced understandings of both general law and psychology may illuminate individual behavior within the context of the legal system. In environmental law, the distinctiveness of environmental impact serves as an empirical illustration of each individual's response. Similarly, the process for arriving at decisions in adherence to IEL remains relevant. IEL inherently involves individuals, including state officials, representatives, and diplomats. As a result, psychological responses and research have the potential to significantly and substantially contribute to observing, elucidating, and interpreting the actions of state decision-makers. However, it also offers additional perspectives on the process of evaluating and determining the feasibility of proceeding in legal circumstances. Precise understandings of general law and psychology may shed light on the conduct of an individual within the context of the legal system. In the context of environmental law, the uniqueness of environmental impact serves as an empirical illustration of the particular response of each individual. Under IEL, similar consideration should apply to this young yet developing field.

The purpose of this research is to illustrate the distinctive attributes of the psychology governing transboundary environmental harm through an examination of its environmental and cross-border impacts. While the primary objective of the establishment of IEL was to oversee and control damage beyond national boundaries, individuals tend to exhibit behavior that is conspicuously unique in relation to the type of transboundary environmental harm inflicted. Similar to the psychological aspects of environmental law, governance of transboundary environmental harm demonstrates similar characteristics of complexity, diffusion, and non-human response, and transboundary feature, voluntariness, fragmentation and political border, which may elicit an individual's distinct psychological response. These responses have the capacity to influence government decisions regarding compliance with IEL, ultimately impacting the behavior of nation-states. This research suggests that understanding the psychological aspects of IEL can offer a perceptive observation that may elucidate and predict the behavior of states that transpire during IEL.

Following the establishment of the psychological aspects of IEL theory, the subsequent section of this research establishes a connection between the theory and the international practice of law. The nature of transboundary environmental harm governance might also be more comprehensively understood, thereby facilitating a more comprehensive grasp of the theory and its application. By establishing a correlation between recurring instances of systemic environmental neglect within the realm of international law and the psychological disregard for transboundary environmental harm, this research aims to highlight inconsistencies created by six features. Through the application of the psychological principles of IEL, systemic distortions in environmental issues can be effectively identified and corrected. Despite presumptions that human rationality is at work in the decision-making processes that govern international law,

misunderstandings and underestimations regarding transboundary environmental harm governance continue to significantly influence decision-makers' perspectives. The methodology employed in addressing legitimacy, negotiation and compliance issues adheres to an established and recognized structure, which will be elaborated upon in the subsequent section.

CHAPTER 3. THE PSYCHOLOGY OF TREATY FORMATION: THE CASE OF INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING

The whale, a prominent marine mammal at the apex of the food chain, serves a focal point in marine conservation efforts. The historical narrative of whaling primarily centers on repetitive instances of excessive exploitation of whale populations, often spurred by new biological discoveries or technological advancements.³²⁹ Contemporary whaling practices have significantly reduced the numbers of certain whale species in key whaling regions.³³⁰

Whales are protected under a number of international environmental agreements, including International Trade Species of Wild Fauna and Flora and 1995 Fish Stock Agreement.³³¹ Whales have been singled out for specific legal protection, over and above that which applies to other animals. Indeed, in many ways, the global community has united in prioritizing whale conservation. Whaling conservation is often seen as a matter of global awareness, and whales have received various special protections throughout (legal) history.³³² The 1946 International Convention for the Regulation of Whaling in particular has emerged as a pivotal instrument in safeguarding whale populations.³³³

³²⁹ Didrik Dyrdal, 'Whaling and the Extermination of the Great Whale': *Norwegian and British Debate about Whale Stocks in Antarctica*, 1913-1939, 25 ENVTL & HISTORY, 87 (2015).

³³⁰ See *id.*

³³¹ Convention on International Trade Species of Wild Fauna and Flora, Mar. 3, 1973, 993 U.N.T.S. 243; 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Apr. 8, 1995, 2167 U.N.T.S. 3, also regulates whale conservation.

³³² See Dyrdal *supra* note 329; for example, 1931 Geneva Convention for Regulation of Whaling is a historical convention for whale conservation.

³³³ International Convention for the Regulation of Whaling Feb. 12, 1946, 161 U.N.T.S. 72.

Various scholarly discussions have explored the effectiveness of governance and monitoring mechanisms in protecting whales. However, none have fully addressed the question of why whales are singled out and afforded a distinct international legal framework for their protection. This study considers this question and broadens the discourse by delving into the theory established in the previous chapter—the psychology of IEL. The psychological viewpoint provides a way of thinking about the puzzle of special whale protection that can help us understand why whales have received special legal attention, and predict where laws protecting whales may face challenges and/or function well.

The psychological approach to the Whaling Convention enhances our understanding of how psychology influences the perception of legitimacy in IEL. The psychology of IEL contributes insights beyond those offered by an economic perspective, improving the process of valuing biodiversity conservation. The Whaling Convention case study demonstrates how cognition, motivation, and emotion impact the valuation process, ultimately affecting the perception of legitimacy.

This chapter encompasses four main discussion points. The *first* section delves into a case study involving the 1946 International Convention for the Regulation of Whaling, applying insights from the psychology of IEL to analyze perceptions of legitimacy and conflicts surrounding the whale capture. In the *second* section, this chapter delves into the economic aspect of the demand for whales. It questions why whales receive exclusive legal protection despite not being as economically important as other marine species like tuna and sharks. Additionally, this section highlights the potential for psychological observations to complement the legal focus on whales and address issues related to convention violations. The *third* section discusses the importance of valuation in biodiversity conservation, highlighting its role in shaping legal frameworks in this

domain. It uses contingent valuation as a key illustration and argues that psychology can provide deeper insights into valuation within contexts of biodiversity preservation. Building on the connection between valuation and psychology, this section also utilizes psychological aspects within IEL to analyze the genesis of the Whaling Convention and Japan's actions regarding violations. By applying psychological insights to the Convention, the chapter concludes in the *fourth* section that the psychological approach is a valuable addition, providing illuminating examples that clarify individual valuation processes.

3.1 1946 INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING AS A CASE STUDY

3.1.1 The History of Whaling Convention

The modern global whaling industry began in early 1920s due to the transportation improvement.³³⁴ Limitations in navigation and whaling technologies during this period restricted whaling ships to pursuing whales at relatively low speeds. The historical whaling catches followed a cyclical pattern: catches declined as stocks of profitable species diminished, then increased with the catching of substitute species.³³⁵ The peak catch occurred in the early 1960s, declining thereafter to regulated levels.³³⁶ Economic analysis suggests that market forces leading to reduced catches were established before agreements were enforced, indicating the inevitability of the decline as whale products lost commercial value on a large scale.³³⁷ Consequently, excessive

³³⁴ Robert Rocha et al., *Emptying the Oceans: A Summary of Industrial Whaling Catches in the 20th Century*, 76 MARINE FISHERIES REV. 37 (2014).

³³⁵ Robert Brownell et al., *Conservation Status of North Pacific Rights Whales, Right Whales: Worldwide Status*, SPECIAL ISSUE 2, 269 (2001).

³³⁶ Ray Gambell, *World Whale Stocks*, 6 MAMMAL REV., 41 (1976).

³³⁷ Viktoria Schneider & David Pearce, *What Saved the Whales? An Economic Analysis of 20th Century Whaling*, 13 BIODIVERSITY & CONSERVATION, 543 (2004); C. W. Clark & R. Lamberson, *An Economic History and Analysis of Pelagic Whaling*, 6 MARINE POLICY, 103 (1982).

hunting and dwindling demand of whales led to a decline in both whale populations and the whaling industry.³³⁸

Before the decrease in demand, overfishing emerged as a pressing issue. Rather than implementing regional or global regulations on whale catches, countries allocated resources to enhancing and deploying whaling technology.³³⁹ Throughout the 1920s and 1930s, significant advancements were made in navigation technology and whaling equipment.³⁴⁰ The increased speed of whaling vessels enabled whalers to target specific whale species, such as fin whales and blue whales, which had previously been inaccessible due to their exceptional swimming speed. Such improved hunting methods, therefore, posed an escalating threat to whale populations.³⁴¹

As a result, countries soon faced a transnational environmental issue stemming from a depletion of resources due to excessive whaling.³⁴² In an effort to manage this problem, twenty-one countries that engaged in whaling negotiated the 1931 Convention for the Regulation of Whaling.³⁴³ Notably concise, this agreement was modeled on Norwegian domestic legislation.³⁴⁴ The Convention neither specified a whaling quota nor reduces the hunting time,³⁴⁵ thus limiting its impact. Additionally, before and after the implementation of this convention, countries continued to extract large quantities of whale oil, exceeding the market demand by a significant

³³⁸ Schneider & Pearce, *id.*

³³⁹ L. E. Davis et al., *Technology, Productivity, and Profits: British-American Whaling Competition in the North Atlantic, 1816-1842*, 39 OXFORD ECONOMIC PAPERS, 738 (1987).

³⁴⁰ DANIEL BODANSKY, *THE ART AND CRAFT OF INTERNATIONAL ENVIRONMENTAL LAW* 41 (2010).

³⁴¹ KURKPATRICK DORSEY, *WHALES AND NATIONS: ENVIRONMENTAL DIPLOMACY ON THE HIGH SEAS* 18 (2013).

³⁴² Kurk Dorsey, *National Sovereignty, the International Whaling Commission, and the Save the Whales Movement*, in *NATION-STATES AND THE GLOBAL ENVIRONMENT: NEW APPROACHES TO INTERNATIONAL ENVIRONMENTAL HISTORY* 45 (ERIKA MARIEBSUMEK, DAVID KINKELA & MARK ATWOOD LAWRENCE EDS., 2013).

³⁴³ Gare Smith, *The International Whaling Commission: An Analysis of the Past and Reflections on the Future*, 16 NAT. RESOURCES L. 543, 546 (1984).

³⁴⁴ Steinar Andresen, *The International Whaling Commission (IWC): More Failure Than Success?*, In *ENVIRONMENTAL REGIME EFFECTIVENESS: CONFRONTING THEORY WITH EVIDENCE* 382 (EDWARD L. MILES ET AL. EDS., 2002).

³⁴⁵ Gare Smith, *The International Whaling Commission: An Analysis of the Past and Reflections on the Future*, 16 NAT. RESOURCES LAW. 546 (1984).

margin. Therefore, whale oil prices experienced a sharp decline, leading to a market collapse between 1931 and 1932,³⁴⁶ leading to another substantial downturn in the whaling.³⁴⁷

In response to these challenges, the 1937 International Agreement for the Regulation of Whaling was crafted to replace the 1931 Convention for the Regulation of Whaling.³⁴⁸ Initiated by the United States and several other whaling countries, the agreement imposed stricter regulations on whaling practices.³⁴⁹ The 1937 agreement stipulated the minimum size of harvestable whales; imposed restrictions on the hunting of gray whales, bowhead whales, and right whales; and instituted limitations on the duration of the whaling season.³⁵⁰

Although the 1931 Convention's regulations were reinforced by the 1937 Agreement, countries quickly recognized that depending only on fixed terms to regulate the hunting of wild animals was not only impractical but also inflexible.³⁵¹ The limited efficacy of the new Convention was a direct consequence of the non-participation of key whaling nations such as Japan and Germany.³⁵² This was due to the conservative stance held by many whaling countries at the time, who did not perceive the need for reaching an agreement. Whaling practice reached its peak during the years 1937 and 1938, following the ratification of the convention.³⁵³ The scarcity of food after the World War II drove multiple countries that had not engaged in whale hunting before to resume this activity, further exhausting resources. This issue was partially alleviated during World War II when ports and ships were exclusively dedicated to military purposes. The depletion of whaling

³⁴⁶ Andresen, *supra* note 344.

³⁴⁷ Anthony L.I. Moffa, *Two Competing Models of Activism, One Goal: A Case Study of Anti-Whaling Campaigns in the Southern Ocean*, 37 YALE J. INT'L L. 201, 204 (2012).

³⁴⁸ International Agreement for the Regulation of Whaling (with Declaration), Aug., 6, 1937, 4406 U.N.T.S. 79.

³⁴⁹ Smith, *supra* note 345.

³⁵⁰ *Id.*

³⁵¹ Dorsey, *supra* note 342, at 44.

³⁵² Dorsey, *id.* at 82; Andresen, *supra* note 344.

³⁵³ Dorsey, *id.* at 45.

resources compelled the whaling nations to participate in negotiations once more at the negotiating table.

Accordingly, since 1943, the United States actively solidified its position as a global leader on whaling by engaging in discussions with whaling countries including the United Kingdom and Norway.³⁵⁴ While some analysts argue that Norway initially played a leading role in promoting international negotiations, the United States swiftly took over its influence and leadership on whaling matters.³⁵⁵ As a result, the International Convention for the Regulation of Whaling was adopted in 1946.³⁵⁶ In the 19940s, the Whaling Convention was the first and only international treaty focused exclusively on one animal. The International Convention for the Regulation of Whaling (ICRW) is the principal agreement that governs and oversees the management of global whale resources.

The ICRW established the International Whaling Commission to regulate and oversee the whaling activities.³⁵⁷ The scientific research division of the International Whaling Commission is tasked with offering precise data recommendations to facilitate the Commission's objective and scientifically-based revision of whale resource management. The strategy aims to establish a legal mechanism in a way that is not overly influenced by international politics and ensures that the professional opinions of the scientific community play a role in shaping the norm of whaling regulation.³⁵⁸ Furthermore, while the Convention does not explicitly refer to establish scientific research units, a scientific and technical group was established during the initial stages of the

³⁵⁴ Dorsey, *id.* at 46.

³⁵⁵ M. J. Peterson, *Whalers, Cetologists, Environmentalists and the International Management of Whaling*, 46 INT'L ORGANIZATION, 147 (1992).

³⁵⁶ Andresen, *supra* note 344.

³⁵⁷ *Supra* note 333, art. III (2).

³⁵⁸ Steinar Andresen & Tora Skodvin, *Non-state Influence in the International Whaling Commission, 1970 to 2006*, in NGO DIPLOMACY: THE INFLUENCE OF NONGOVERNMENTAL ORGANIZATIONS IN INTERNATIONAL ENVIRONMENTAL NEGOTIATIONS 122 (MICHELE M. BETSILL & ELIZABETH CORELL EDS., 2008).

International Whaling Commission's formation at the inaugural meeting. This group was later renamed the Scientific Committee.³⁵⁹ Furthermore, according to Article VIII, paragraph 1, of the Convention, signatory parties have the authority to grant whaling licenses for the explicit purpose of conducting scientific research. Therefore, within the quota and scientific research framework, whaling remains an allowable activity.

However, an additional significant development in the 1970s was the rise of worldwide awareness regarding environmental preservation. Driven by domestic environmental organizations in the United States, a grassroots movement for environmental conservation measures emerged and progressively influenced multiple nations.³⁶⁰ An increasing number of environmental organizations were unwilling to acknowledge whales as an economic resource requiring conservation.³⁶¹ Whales have acquired the status of symbolic creatures for environmental organizations, leading to global demands for a comprehensive prohibition on whaling.³⁶² The adoption of the precautionary principle during the 1982 International Whaling Commission meeting prompted pro-whaling countries to change their position, ultimately resulting in a triumph for anti-whaling countries. The Moratorium on Commercial Whaling was enacted with a three-quarters majority. Following the Moratorium, a comprehensive prohibition on commercial whaling was established.³⁶³

³⁵⁹ Steinar Andresen, *The Whaling Regime*, IN SCIENCE AND POLITICS IN INTERNATIONAL ENVIRONMENTAL REGIMES: BETWEEN INTEGRITY AND INVOLVEMENT 36 (STEINAR ANDRESEN ET AL. EDS., 2000).

³⁶⁰ Andresen & Skodvin, *supra* note 358, at 120.

³⁶¹ Kurk Dorsey, *supra* note 342, at 52.

³⁶² Greenpeace, Commercial Whaling Banned, at <https://www.greenpeace.org/usa/victories/commercial-whaling-banned/>.

³⁶³ Ian Hurd, *Almost Saving Whales: The Ambiguity of Success at the International Whaling Commission*, 26 ETHICS & INT'L AFF. 103, 104 (2012).

3.1.2 The Violation of Whaling Conventions by Japan

The whaling conventions' tale is one of conflict between increased safeguards for whales under the whale-specific ICRW and ongoing difficulty in enforcing whaling limits. Indeed, breaches of the Whaling Convention have occurred often since its establishment.

Consider the case before International Court of Justice (ICJ), Whaling in the Antarctic between Australia and Japan.³⁶⁴ Australia initiated legal proceedings against Japan on May 31, 2010, regarding Japan's continuous large-scale whaling operations conducted in the Antarctic, conducted under the Second Phase of its Japanese Whale Research Program under Special Permit in the Antarctic (JARPA II). Australia argued that Japan's actions were in contravention of its obligations as outlined in the ICRW and other international accords/agreements pertaining to the conservation and preservation of marine mammals as well as the marine ecosystem.

In its ruling published on March 31, 2014, the Court declared its initial jurisdiction over the case and dismissed Japan's claim that the dispute fell under a reservation in Australia's declaration recognizing the Court's mandatory jurisdiction. The Court subsequently deliberated on the application and interpretation of Article VIII of the 1946 Convention, which grants parties the authority to issue special permits for whale scientific research.

In relation to the interpretation of the 1946 Convention, the Court underscored that merely conducting a whaling program under the guise of scientific research does not inherently meet the criteria for eligibility under Article VIII, unless the actions of whale slaughter, seizing, and treatment genuinely serve scientific objectives.³⁶⁵ The Court evaluated the program's design and

³⁶⁴ Whaling in the Antarctic (Australia v. Japan), Judgment, I.C.J. Reports 2014, p. 226.

³⁶⁵ *Id.* pp. 70-97.

implementation in light of its stated scientific objectives, with a specific focus on the necessity of lethal methods for scientific research.³⁶⁶

The Court acknowledged that JARPA II could be categorized as scientific inquiry with regard to its application. However, inadequate evidence was discovered to support the claim that the program's design effectively achieved its intended objectives. As a result, the Court concluded that Japan's whaling permits issued under JARPA II failed to meet the criterion of "for scientific research purposes" as specified in paragraph 1 of Article VIII of the Convention.³⁶⁷

Regarding the implications of this decision, the Court considered remedies in response to Australia's allegations of Japan's violations of the Convention provisions, particularly those concerning factory ships, commercial whaling moratoriums, and the Southern Ocean Sanctuary. The Court ordered Japan to rescind any existing authorizations or permits for whaling activities under the program while JARPA II was in progress and prohibited the issuance of additional permits for JARPA II-related activities under Article VIII, paragraph 1. The Court's judgment, however, does not prevent Japan's whaling activity. In 2018, the Japanese government withdrew from the IWC, claiming to conduct commercial whaling in its jurisdictional waters. The endangered condition of whales has not prevented Japan from whaling.

3.2 TRADITIONAL ECONOMIC PERSPECTIVE ON WHALING CONVENTION

Among endangered animals, whales are one of the unique animals in receiving dedicated attention in international law, evidenced by the existence of a specific international treaty designed

³⁶⁶ *Id.* pp. 73-86.

³⁶⁷ *Id.* pp. 127-227.

specifically for their conservation.³⁶⁸ How did this develop and why is it that only the whale benefits from such unique regulatory focus? While an economic rationale suggests that whales have a significant impact on the global economy, as noted below, other fish species such as swordfish, tuna, and sharks³⁶⁹ hold comparable or even greater economic values in modern times. Thus, as this section argues, the economic explanation alone appears insufficient to justify the exclusive emphasis on whale conservation.

Thus, examining the Whaling Convention from a different viewpoint could provide more insight into the underlying reasoning. An alternative perspective strongly suggests a psychological basis for this unique focus on whales. Although the conservation efforts have been in place for decades, whales are not the only endangered species at the top of food chain. Sharks and tuna face similar risks of over-capturing, as evidenced by how Pacific Bluefin Tuna, given its high economic value, has been overfished.³⁷⁰ Similarly, over the past 50 years, the shark population in the ocean has declined by 71% as a result of excessive fishing.³⁷¹ International communities have recognized these conditions and taken steps to conserve marine fauna through international legal systems and agreements like the 1995 United Nations Fish Stock Agreement and regional fisheries management organizations (RFMOs),³⁷² which play the most important conservation role.³⁷³ While the international community has recognized these issues and taken steps to conserve marine

³⁶⁸ *Supra* note 333.

³⁶⁹ In 2016, only Atlantic tunas, sharks, billfish and swordfish generated an estimated \$232 million in total sales; tuna, shark, billfish, and swordfish anglers contribute an estimated \$510 million to the U.S. economy each year. See NOAA Fisheries, *New Report Reveals Economic Impact of Recreational Atlantic Highly Migratory Species Fisheries*, Jan. 21, 2020, at <https://www.fisheries.noaa.gov/feature-story/new-report-reveals-economic-impact-recreational-atlantic-highly-migratory-species>.

³⁷⁰ For example, NOAA Fisheries offers that Pacific Bluefin Tuna is overfished, at <https://www.fisheries.noaa.gov/species/pacific-bluefin-tuna>.

³⁷¹ Erik Stokstad, *Most High-seas Shark Species Now Threatened with Extinction*, SCIENCE NEWS (Jan. 27, 2021), at <https://www.science.org/content/article/most-high-seas-shark-species-now-threatened-extinction>.

³⁷² 1995 Agreement, *supra* note 331.

³⁷³ For example, Inter-American Tropical Tuna Commission (IATTC) and the Western and Central Pacific Fisheries Commission (WCPFC).

fauna through agreements like the 1995 United Nations Fish Stock Agreement and RFMOs, whales have as noted received unparalleled legal protection under international law.

What is the reason for the particular and additional focus on whales from international communities? The economic perspective offers a partial answer: namely, that the preservation of whale species may be a matter of economic interest that motivates the international community to take action to protect whales. Historically, it is true that whales have held immense economic values. The economic importance of whales was immense throughout the 1960s. During the peak of whaling activities, a total of over 80,000 whales were successfully taken every year,³⁷⁴ and the economic value of whaling was worth 10 million dollars back in 1880 dollars for the United States.³⁷⁵ From 2007 to 2008, the actual sale of whale and its product reached 48.8 million dollars in Japan.³⁷⁶ Whale meat and blubber are the major market economic interest from whales, with the trade of whale meat and blubber driving whaling activities in certain nations. In recent times, due to the growing awareness of whale conservation, whale-watching has emerged as an additional economic incentive.³⁷⁷ A purely economic view, therefore, might posit that the economic importance of whales could warrant the creation of a unique international conservation treaty specifically for their protection.

However, if economic factors were the sole basis for determining the protection of crucial marine species under international environmental law, tuna rather than whales would likely be the central focus of such protections. Tuna possesses much greater economic significance than whales.

³⁷⁴ Our World in Data, Global Whaling Peaked in the 1960s, at <https://ourworldindata.org/whaling>.

³⁷⁵ Ian Zapolsky, *Payroll in the American Whaling Industry*, at <https://www.checkhq.com/post/payroll-in-the-american-whaling-industry>. \$10,000,000 in 1880 is equivalent in purchasing power to about \$307,400,000 today according to inflation calculator.

³⁷⁶ WWF, Sink or Swim, The Economics of Whaling Today, at 3, https://wwf-eu.awsassets.panda.org/downloads/economics_whaling_summ_report_final.pdf.

³⁷⁷ Chiara Guidino et al., *Whale Watching In Northern Peru: An Economic Boom?*, 15 TOURISM IN MARINE ENVIRONMENTS, 1 (2020).

In fact, by some measures,³⁷⁸ tuna is the most valuable species in the ocean. In 2018, the global economic value for the tuna market reached 12 billion dollars.³⁷⁹ The tuna market value for the Atlantic Ocean countries was over 5 billion dollars.³⁸⁰ Nonetheless, in 2019, some expertise from the International Monetary Fund estimated that global great whale economy was worth around 2 million dollars today.³⁸¹ Despite the significant economic importance of tuna, the management of the tuna fisheries industry continues to depend on RFMOs to oversee and enforce quota regulations for dividing tuna resources among their members.

On the other hand, the global economic fisheries value is 630 million dollars and 314 million dollars for shark-watching industry.³⁸² Yet with the economic incentives, international law does not focus on shark conservation solely.³⁸³ The fragmentation of international law on shark conservation raised another question for international scholars.³⁸⁴ The major conservation regulation lies on the 1995 Fish Stock Agreement and RFMOs. As with tuna, however, the international community has not arranged a unique and particular supervision framework for shark.

For the ecosystem importance, the great whales, sperm and baleen whales, likely had a significant impact on marine ecosystems prior to the commencement of commercial whaling due to their high metabolic demands and substantial populations. In the deep sea, they fulfilled a

³⁷⁸ Donald Orth, *Ch 12 Conserving Tuna: The Most Commercially Valuable Fish on Earth*, IN FISH FISHING, AND CONSERVATION (2023).

³⁷⁹ Camiel Derichs, *The Socio-Economic Value of Tuna*, Marine Stewardship Council, at <https://www.msc.org/media-centre/news-opinion/news/2020/02/19/the-socio-economic-value-of-tuna>.

³⁸⁰ The PEW Charitable Trusts, *Netting Billions 2020: A Global Tuna Valuation* (2020), p.22.

³⁸¹ Ralph Chami et al., *Nature's Solution to Climate Change*, International Monetary Fund, p. 36, at <https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami>.

³⁸² Andrés Cisneros-Montemayor et al, *Global Economic Value of Shark Ecotourism: Implications for Conservation*, 47 ORYX, 381 (2013)

³⁸³ In comparison, whale industry is worth 2 million dollars in 2019 according to IMF investigation above. Chami et al., *supra* note 381.

³⁸⁴ Erika J. Techera, *Good Environmental Governance: Overcoming Fragmentation in International Law for Shark Conservation and Management*, Proceedings of the Annual Meeting (American Society of International Law), Vol. 105, Harmony and Dissonance in International Law 103-7 (2011).

diverse array of functions, such as grazing on fish and invertebrates, serving as a source of food and habitat for larger predators, and storing and transporting nutrients in both vertical and horizontal orientations.³⁸⁵ Tuna and shark also share similar condition,³⁸⁶ they both are on the top of food chain and ecosystem.³⁸⁷ The marine ecosystem's essence is influenced by these living animals at the summit of the food chain.

Although tuna and sharks are commercially valuable and essential to marine ecosystems and fisheries, they frequently experience difficulties in gaining protection in comparison to whales. Whales are legally protected from a variety of threats. Such discrepancy can be linked to a number of different factors, including disparities in public perception, previous conservation objectives, and challenges associated with managing diverse marine species. Tuna and sharks, despite the biological relevance and economic value over whales, may have a difficult time attracting the same level of attention and conservation efforts as whales. Social and cultural factors further influence conservation policies and priorities.³⁸⁸

In the Fisheries Stock Agreement, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),³⁸⁹ and RFMOs, designed to control fishing operations and ensure the sustainable management of fish stocks, tuna and sharks fall under the purview of protection. It is important to note that these organizations oversee fish populations. However, the quotas that are allotted to member states in accordance with these agreements can occasionally

³⁸⁵ Joe Roman et al., *Whales as Marine Ecosystem Engineers*, 12 FRONTIERS IN ECOLOGY & ENVIRONMENT, 377 (2014).

³⁸⁶ P. G. Grewe et al., *Evidence of Discrete Yellowfin Tuna (*Thunnus Albacares*) Populations Demands Rethink of Management for this Globally Important Resource*, 5 SCIENTIFIC REPORTS 16916 (2015).

³⁸⁷ Motivarash Yagnesh B. et al., *Importance of Sharks in Ocean Ecosystem*, 8 J. ENTOMOLOGY & ZOOLOGY STUDIES, 611 (2020).

³⁸⁸ Adriana Ressurreição et al., *Different Cultures, Different Values: The Role of Cultural Variation in Public's WTP for Marine Species Conservation*, 145 BIOLOGICAL CONSERVATION, 148 (2012).

³⁸⁹ Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 993 U.N.T.S. 243.

result in excessive fishing, which in turn endangering the populations of these two marine species. Limited legal frameworks and declining shark³⁹⁰ and tuna³⁹¹ populations necessitate stricter conservation measures and enforcement.

Despite the enactment of the whaling convention, whaling activities remain prevalent in Antarctica,³⁹² notably exemplified by Japan's large-scale whaling operations in the region. Of particular concern is the hunting of the critically endangered Antarctic blue whale (*Balaenoptera musculus intermedia*).³⁹³ Regrettably, the whaling convention fails to ensure adequate conservation measures for these vulnerable and endangered species in the response to demands from certain states.

Empirical evidence reveals that baleen whales face a myriad of threats, ranging from systemic issues, such as climate change and marine pollution,³⁹⁴ to more localized challenges, such as shipping, habitat degradation,³⁹⁵ unregulated wildlife tourism,³⁹⁶ and fishing activities. According to the research, baleen whales are in great danger from scientific whaling and the impacts of climate change,³⁹⁷ which are two of the most serious human-induced risks. Given the

³⁹⁰ X. N. Verlecar et al., *Shark Hunting—An Indiscriminate Trade Endangering Elasmobranchs to Extinction*, 92 CURRENT SCIENCE, 1078 (2007); Sonja Fordham & Coby Dolan, *A Case Study in International Shark Conservation: The Convention on International Trade in Endangered Species and the Spiny Dogfish*, 34 GOLDEN GATE U. L. REV., 531 (2004).

³⁹¹ Hiroyuki Matsuda & Mitsuyo Mori, *Why is the Tuna Critically Endangered and Still Sold in the Market?*, in ECOLOGICAL RISK MANAGEMENT 119-34 (Hiroyuki Matsuda ed., 2021); Carl Safina, *Bluefin Tuna in the West Atlantic: Negligent Management and the Making of an Endangered Species*, 7 CONSERVATION BIOLOGY, 229 (1993).

³⁹² Cédric Cotté & Christopher Guinet, *Historical Whaling Records Reveal Major Regional Retreat of Antarctic Sea Ice*, 54 DEEP SEA RESEARCH PART I: OCEANOGRAPHIC RESEARCH PAPERS, 243 (2007).

³⁹³ Catherine Attard et al., *Towards Population-Level Conservation in the Critically Endangered Antarctic Blue Whale: The Number and Distribution of Their Populations*, 6 SCIENTIFIC REPORTS, 22291 (2016).

³⁹⁴ Laura Savery et al., *Global Assessment of Oceanic Lead Pollution Using Sperm Whales (Physeter Macrocephalus) as an indicator Species*, 79 MARINE POLLUTION BULLETIN, 236 (2014).

³⁹⁵ R. Williams et al., *Acoustic Quality of Critical Habitats for Three Threatened Whale Populations*, 17 ANIMAL CONSERVATION, 174 (2014).

³⁹⁶ E. C. M. Parsons, *The Negative Impacts of Whale-Watching*, 2012 J. MARINE SCIENCES, SPECIAL ISSUE (2012).

³⁹⁷ Peter Thomas, *Status of the World's Baleen Whales*, 32 MARINE MAMMAL SCIENCE, 682 (2016).

disparities in scientific understanding and recovery rates among the whale species, it is uncertain whether existing legal frameworks adequately addresses all of these threats.³⁹⁸

The complexities surrounding the legal protection of whales and the persistent violations of the whaling convention remain inadequately explored within the current discourse. Therefore, to address this gap, this research advocates for an additional perspective rooted in the psychology of IEL, offering an alternative and deeper understanding of individuals actions under international law. By delving into the psychological dimensions of IEL, this research aims to shed light on the underlying motivations and decision-making processes of states regarding environmental laws and regulations, particularly regarding the protection of whales. This supplemental viewpoint seeks to explore how psychological factors, such as attitudes, beliefs, and perceptions, shape the implementation and enforcement of international environmental agreements such as the whaling convention. Furthermore, by integrating psychological insights into the study of IEL, it aspires to foster a more comprehensive and nuanced understanding of state behavior in addressing environmental challenges, including whale conservation. This approach acknowledges the multifaceted nature of environmental governance and the importance of considering human psychology in the development of shaping legal frameworks and policies.

3.3 PSYCHOLOGICAL PERSPECTIVE ON THE WHALE CONSERVATION AND VIOLATION

This section starts by examining the relationship between biodiversity conservation and psychological studies, proposing that psychological research can deepen and complement the understanding of biodiversity conservation. The benefits of this connection are significant for

³⁹⁸ Rebecca Leaper & Cara Miller, *Management of Antarctic Baleen Whales amid Past Exploitation, Current Threats and Complex Marine Ecosystems*, 23 ANTARCTIC SCIENCE, 503 (2011).

developing legal frameworks and justifying the legal consensus on international laws. After introducing this relationship, the section uses the psychology of international environmental law to analyze the focused attention on the whale convention and its violations. This research argues that psychological viewpoint helps explain why whale enjoy exclusive legal attention, and the legal violation of Japan.

3.3.1 Psychology and Biodiversity Conservation

Subjective Attention and Psychology

The level of individual attention given to a specific matter could influence the amount of resources and value we allocate to it.³⁹⁹ Research on attention explores the origins of voluntary control and subjective experience, which ultimately shape our behaviors.⁴⁰⁰ Focusing attention, which involves managing the specifics of our consciousness, is intrinsically linked to our deliberate actions.⁴⁰¹ Research indicates that a network of brain regions orchestrates attention, facilitating decision-making amidst conflicting options, error correction, and intentional emotional regulation.⁴⁰² Recent studies of brain imaging highlight the intricate involvement of various regions within the anterior cingulate area that executive attention processes.⁴⁰³

Posner and Rothbart's study traced the evolution of attention networks through marker tasks, which engage specific brain regions as revealed in imaging studies.⁴⁰⁴ Initially, focused

³⁹⁹ Gerald Leventhal, *The Distribution of Rewards and Resources in Groups and Organizations*, 9 ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY, 91 (1976).

⁴⁰⁰ Michael Posner & Mary Rothbart, *Research on Attention Networks as a Model for the Integration of Psychological Science*, 58 ANNUAL REV. PSYCHOLOGY, 1 (2007).

⁴⁰¹ Ap Dijksterhuis & Henk Aarts, *Goals, Attention, and (Un)Consciousness*, 61 ANNUAL REV. PSYCHOLOGY, 467 (2010).

⁴⁰² Lisa Wirz et al., *Habits under Stress: Mechanistic Insights Across Different Types of Learning*, 20 CURRENT OPINION IN BEHAVIORAL SCIENCES 9 (2018).

⁴⁰³ George Bush et al., *Cognitive and Emotional Influences in Anterior Cingulate Cortex*, 4 TRENDS IN COGNITIVE SCIENCES 215 (2000).

⁴⁰⁴ Michael Posner & Mary Rothbart, *Attention, Self-Regulation and Consciousness*, 353 PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON SERIES B: BIOLOGICAL SCIENCE, 1915-27 (1998).

attention seems linked to regulating discomfort during infancy. As children mature, their ability to navigate conflicts between stimuli improves, fostering cognitive control. Throughout childhood, the activation of cingulate structures correlates with task completion in conflict situations influences parental perceptions of their child's self-regulation and emotional control. These findings contribute to our understanding of the structure, connectivity, and maturation of focus attention networks, pivotal in regulating cognitive functions and emotions.⁴⁰⁵

Effective molding of legitimacy judgments requires a detailed assessment of assessors' cognitive attention, manifested in their communicative and nonverbal actions. Cognition processes and communication among assessors are critical components of the multi-level legitimacy process, warranting the expansion of discursive and rhetorical methods to grasp legitimacy fully.⁴⁰⁶

Valuation, Psychology and Legitimacy

The role of attention extends to influencing legitimacy within the realm of law. Legitimacy, defined as a psychological quality of authority, organization, or social structure, which leads individuals to perceive it as acceptable, valid, and fair.⁴⁰⁷ This perception of legitimacy encourages individuals to voluntarily comply with decisions and norms, motivated by a sense of duty rather than fear of punishment or anticipation of reward.⁴⁰⁸ The importance of legitimacy has grown in

⁴⁰⁵ *Id.*

⁴⁰⁶ Alex Bitektine & Patrick Haack, *The “Macro” and the “Micro” of Legitimacy: Toward a Multilevel Theory of the Legitimacy Process*, 40 THE ACADEMY OF MANAGEMENT REV., 49 (2015).

⁴⁰⁷ Tom Tyler, Psychological Perspectives on Legitimacy and Legitimation, 57 ANNUAL REV. PSYCHOLOGY 375 (2006).

⁴⁰⁸ Tom Tyler, *The Psychology of Legitimacy: A Relational Perspective on Voluntary Deference to Authorities*, 1 PERSONALITY & SOCIAL PSYCHOLOGY REV. 323 (1997).

recent research on legal institutions.⁴⁰⁹ Similar vein applies to international law, where psychology could offer valuable insights into its realization.⁴¹⁰

Legitimacy has two components: normative and social.⁴¹¹ From a sociologically perspective, it is concerned with how the general public perceives individuals in positions of authority.⁴¹² An authority gains popular legitimacy when the governed populace perceives it as morally sound. The public's positive perception of an institution's ability to administer is proportionally linked to its popular legitimacy.⁴¹³ The perspectives of both states and individuals are critical in assessing the legitimacy of international organizations such as the World Trade Organization (WTO) and the climate change regime. Legitimacy, in a normative sense, refers to the fundamental rationale behind a power claim, regardless of its objective basis.⁴¹⁴ Normative legitimacy pertains to the extent to which an entity, such as the World Trade Organization or the United Nations Security Council, can legally exert its power; illegitimacy occurs when such statements lack validity.⁴¹⁵

On the other side, in the sphere of IEL, debates over the legitimacy of the International Whaling Commission's (IWC) moratorium on commercial whaling are ongoing.⁴¹⁶ Initially instituted with the aim of methodically managing the industry's expansion, the IWC created this

⁴⁰⁹ Tyler, *supra* note 407.

⁴¹⁰ Daniel Bodansky, *Legitimacy in International law and International Relations*, in INTERDISCIPLINARY PERSPECTIVES ON INTERNATIONAL LAW AND INTERNATIONAL RELATIONS: THE STATE OF THE ART 321-37 (Jeffrey Dunoff & Mark Pollack eds., 2013).

⁴¹¹ *Id.* at 324-5.

⁴¹² Cathryn Johnson et al., *Legitimacy as A Social Process*, 32 ANNUAL REV. SOCIOLOGY 53 (2006).

⁴¹³ Jason Sunshine & Tom Tyler, *The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing*, 37 L. & SOCIETY REV. 513 (2003).

⁴¹⁴ Jonathan Jackson, *Norms, Normativity, and the Legitimacy of Justice Institutions: International Perspectives*, 14 ANNUAL REV. L. & SOCIAL SCIENCE 145 (2018).

⁴¹⁵ Hanna Pitkin, *Obligations and Consent—II*, 60 AM. POL. SCI. REV. 39 (1966); Daniel Bodansky, *The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?*, 93 AM. J. INT'L L. 596 (1999).

⁴¹⁶ David Caron, *The International Whaling Commission and the north Atlantic Marine Mammal Commission: The Institutional Risks of Coercion in Consensual Structures*, 89 AJIL 154 (1996).

moratorium in accordance with the International Convention for the Regulation of Whaling, which provides for the management of whaling operations based on scientific findings.⁴¹⁷ Despite conclusions from its Scientific Committee suggesting that certain whale species could be safely and sustainably hunted again, the IWC has chosen to uphold the moratorium. This decision has sparked objections from whaling governments, contending that the IWC's approach is unwarranted. They argue that the IWC's ruling contravenes the conservation framework they signed up for when signing the Whaling Convention.⁴¹⁸

Psychology can aid in understanding the decision-maker's consciousness and attention, crucial components contributing to legitimacy. Psychologists and political scientists have addressed the challenge of assessing the legitimacy of domestic institutions through surveys and interviews.⁴¹⁹ For instance, Gibson and Caldeira utilized survey data to explore the legitimacy of various institutions like the European Court of Justice.⁴²⁰ While evaluating legitimacy from a psychological standpoint is not new, there remains an unexplored area concerning a comprehensive structural understanding derived from psychological analysis.

This research takes one step further by arguing that psychology influences the attention and concern surrounding transboundary environmental harm governance, thereby impacting IEL significantly. Through an organized and structural approach, the psychological viewpoint offers a supplementary observation to enhance the states' legitimacy and attention. Psychological observation offers insights into how individuals value transboundary environmental harm

⁴¹⁷*Supra* note 333, preamble.

⁴¹⁸ Andrew Pollack, *Commission to Save Whale Endangered Too*, N.Y. TIMES, May 18, 1993.

⁴¹⁹ M. Stephen Weatherford, *Measuring Political Legitimacy*, 86 AM. POL. SCIENCE REV., 149 (1992).

⁴²⁰ James Gibson & Gregory Caldeira, *The Legitimacy of Transnational Legal Institutions: Compliance, Support, and the European Court of Justice*, 39 AM. J. POL. SCIENCE, 459 (1995).

governance, which, in turn, could inform and deepen our understanding of the legitimacy of certain international law-making processes.

Violation and Psychology

In addition to the psychology of valuation, the act of violation also relates to psychology.⁴²¹ A decision to comply with or violate international obligations is relevant in psychology as well. The valuation process plays a critical role in decision-making. Complying with international obligations incurs interests or benefits that come along with international law as such.⁴²² On the contrary, the violation of international obligations is like a coin that has two sides, that could lead to damage or defects that a state should also take into consideration. Therefore, the compliance with or violation of international obligations relates to individual or group valuation process. From rational choice theory perspective, the contingent valuation only explains partially for maximizing the self-interest.⁴²³ Once the compliance value is greater than the violation interest, a state would act in accordance with international obligation; if the violation interest is greater than the compliance value, state may choose to act against the obligation.⁴²⁴ Nonetheless, although rational choice theory may explain the interest balance, it cannot fully shed light on the preference and perception of an individual.

Individuals have preference and perception that could impact their decision-making process, encompassing areas such as that of medicine and business.⁴²⁵ Preference also impacts the

⁴²¹ Sandra Robinson & Elizabeth Wolfe Morrison, *The Development of Psychological Contract Breach and Violation: A Longitudinal Study*, 21 J. ORGANIZATIONAL BEHAVIOR 525 (2000).

⁴²² Oona Hathaway, *Between Power and Principle: An Integrated Theory of International Law*, 72 U. CHI. L. REV. 469 (2005).

⁴²³ Goldsmith & Posner, *supra* note 13, pp. 4-20.

⁴²⁴ Alexander Thompson, *Applying Rational Choice Theory to International Law: The Promise and Pitfalls*, 31 J. LEG. STUD. 285 (2002).

⁴²⁵ J.J. Aning et al., *Patient Preference and the Impact of Decision-Making Aids on Prostate Cancer Treatment Choices and Post-Intervention Regret*, 19 CURRENT ONCOLOGY, 37 (2012); Yanhu Han et al., *Impact of Consumer*

decision-making under international law.⁴²⁶ International law may influence and shape individuals' preferences, thereby influencing the state behavior, according to a number of hypotheses. As posited by these theories, political leaders are inclined to adopt positions that are closely consistent with international obligations when voters place a higher value on upholding treaty commitments or respecting international norms. These hypotheses have been the subject of recent scholarly research that employs surveys and experimental methodologies in those surveys. Research done in the United States has demonstrated that public opinions can be substantially swayed by arguments grounded in international law and norms, leading to an increase in compliance ranging from 4 to 20 percentage points. Conversely, investigations carried out in other countries have produced a greater diversity of outcomes, including certain occurrences of opposition noted in politically fraught settings where international law is a subject of dispute.⁴²⁷ Individual preference and perception thus significantly influence the adherence or non-adherence to international law.

Following the theory, the psychology of IEL, built in the prior chapter, this chapter will further employ the theory to analyze the current international treaties, which are highly relevant under the context of transboundary environmental harm governance. The case applications are helpful in better understanding the theory and could further help us comprehend the perception of negotiation, formation, and compliance under IEL. This research argues that, examining the psychology of IEL—and specifically, the psychology of transboundary environmental harm governance—can provide insights into the practical aspects of international practices while at the same time, enhancing our comprehension of the underlying theory itself. The psychological

Preference on the Decision-Making of Prefabricated Building Developers, 28 J. CIVIL ENGINEERING & MANAGEMENT, 166 (2022).

⁴²⁶ Emilie Hafner-Burton et al., *Decision Maker Preferences for International Legal Cooperation*, 68 INT'L ORGANIZATION, 845 (2014).

⁴²⁷ Adam Chilton & Katerina Linos, *Preferences and Compliance with International Law*, 22 THEORETICAL INQUIRIES IN LAW, 247 (2021).

method provides insights into the perception process, which will help facilitate discussions on legitimacy, negotiation, and compliance. For one, the concept of legitimacy is a recurring concern within the field of law. This research explores the possibility of using psychological methods to enhance the conversation on legitimacy that is often studied through a democratic perspective. The psychological perspective utilizes experiments to examine and explain individual preferences and behaviors. It serves as a valuable and supplemental tool to enhance our understanding of legitimacy. An analogous phenomenon can be observed in the negotiation and compliance procedure. When one engages in the decision-making process, it is necessary to conduct an estimating or valuation process. An understanding of the psychological challenges presented by transboundary environmental harm governance can contribute to our comprehension of how legitimacy, compliance, and negotiation in IEL are performed.

Accordingly, in this section, this research attempts to explicate the rationale of why certain animals enjoy more attention than others under international law and offers potential and supplemental explanation on why these animals receive more attention from the international community. The International Convention for the Regulation of Whaling will be the primary focus of the discussion in the following section.

3.3.2 A Structural Psychological Answer to the Attention on Whales and Japan's Violation

This section explores the heightened focus on the international community on whales and the occurrence of violations of whaling conventions from a psychological perspective. What is the reason for such heightened focus of the international community on whales? As this section argues, one potential reason lies in the way that humans interact with non-human species. Whales possess mammalian characteristics that are analogous to those seen in humans; these characteristics may impact people's perceptions and valuations of whales. Exploring the parallels between human and

non-human characteristics can shed light on this phenomenon. The former features of non-human characteristics from environmental impact might throw light on this phenomenon because whale is mammal as human being.

This section, delving into the psychology of IEL, utilizes the elements of IEL to analyze the creation of the Whaling Convention and Japan's breaches. It concentrates on non-human characteristics, the diffusion of environmental effects, and the fragmentation and political boundaries in transboundary governance. The argument put forth is that the psychological aspect of IEL fills in gaps left by conventional economic discourse, particularly in terms of valuation and perception processes. This additional perspective aids in understanding how states act regarding whale conservation and can provide insights into future biodiversity challenges.

Non-human Characteristics

Individuals demonstrate distinct perception and behavior when interacting with non-human objects, and this perception may result in a different emphasis that we impose on a certain species. This phenomenon may be associated with factors such as animal conservation, size, or abundance. Anthropomorphization manifests when human-like qualities are attributed to the environment, a tendency particularly noticeable among species that share similarities with *Homo sapiens*.⁴²⁸ Consequently, small mammals exhibiting traits similar to human infants might receive greater consideration and environmental regulatory protection.⁴²⁹ Variations in valuing the non-human environment by the human social brain could be reflected in legislation.⁴³⁰ Environmental law targets the natural environment, which distinctly includes the *nonhuman*: plants, animals,

⁴²⁸ Arden Rowell et al., *supra* note 33; Bradshaw & Paul, *supra* note 210, at 107-112; K. Lorenz, *supra* note 210, at 235-409.

⁴²⁹ Rowell & Bilz, *supra* note 29, p. 98.

⁴³⁰ *Id.* pp. 95-8 & 93-114.

landscapes, ecosystems, and natural processes such as weather patterns. The nonhuman character of many environmental harms leads to meaningful psychological challenges.⁴³¹ These difficulties arise from the fact that we humans have a "social brain" or a set of neural circuits designed and programmed to find meanings in the interaction with other humans.⁴³²

Through empirical investigation into search trends, insights into human attention attribution have emerged. One observation noted that vertebrate species at a higher risk of extinction tended to garner greater Google search volumes than those facing a lower risk, although this pattern was only evident in the Mammalia and Aves classes.⁴³³ Furthermore, other empirical evidence also discovered a negative correlation between the intensity of danger and Google Ngram mentions for specific invertebrates.⁴³⁴ In other words, individual attention attribution is not positively correlated with the endangered condition of certain species. And previous research shows, interestingly, that birds and mammals receive attention in online searches, potentially explaining why whales, despite lower economic value compared to tuna and sharks, are afforded exclusive international protection.

Whales, being mammals, possess traits similar to those of humans, such as complex social structures⁴³⁵ and advanced communication abilities,⁴³⁶ which, according to psychological studies, can draw more attention and empathy from people. This heightened interest helps explain the distinctiveness of whaling conventions and the special legal frameworks established to protect

⁴³¹ Rowell & Bilz, *supra* note 29, p. 93-110.

⁴³² Rowell et al., *supra* note 33.

⁴³³ Thomas Davies et al., *Popular Interest in Vertebrates does not Reflect Extinction Risk and is Associated with Bias in Conservation Investment*, 14 PLOS ONE, e0212101 (2019).

⁴³⁴ Zeng Wang et al., *Out of Sight, Out of Mind: Public and Research Interest in Insects is Negatively Correlated with Their Conservation Status*, 14 INSECT CONSERVATION & DIVERSITY, 700 (2021).

⁴³⁵ Greg O’Corry-Crowe et al., *Group Structure and Kinship in Beluga Whale Societies*, 10 SCIENTIFIC REPORTS, 11462 (2020).

⁴³⁶ Jacobo Marrero Pérez et al., *Different Modes of Acoustic Communication in Deep-diving Short-finned Pilot Whales (Globicephala Macrorhynchus)*, 33 MARINE MAMMAL SCIENCE 59 (2017).

them. Consequently, the legal protection of whales tends to receive more emphasis compared to other animals, reflecting their unique status and the significant public and legal interest in their conservation.

Tuna and sharks, unlike whales, are not mammals. This difference could influence how people allocate their attention. Furthermore, the economic demand driven by cultural and societal factors can also divert attention away from tuna and sharks.⁴³⁷ For example, in certain states, tuna and sharks are part of culinary traditions. The consumption of shark fin in Asian countries is believed to bring good fortune. This cultural association contributes to the demand for shark products.⁴³⁸ Similar case can be found in tuna. Tuna's high protein and omega-3 nutrition results in high demand in seafood market.⁴³⁹

Nevertheless, in terms of biological categorization, whales are distinct from these two types of fish, yet they have an exclusive legal framework for their protection. While economic reasoning may not fully provide a comprehensive explanation, the psychological perspective fills in the gaps in the discussion. The inherent mammalian nature of whales may draw more attention from humans, whether consciously or subconsciously.

Diffusion

Besides the non-human characteristics, the diffusion, fragmentation, and political border characteristics of global biodiversity conservation could further explain state actions such as those observed in the Whaling Convention. Consider the violation of Japan, claiming that their whale

⁴³⁷ Hollie Booth et al., *The Neglected Complexities of Shark Fisheries, and Priorities for Holistic Risk-based Management*, 182 OCEAN & COASTAL MANAGEMENT 104994 (2019); Ciara Willis & Megan Bailey, *Tuna Trade-offs: Balancing Profit and Social Benefits in One of the World's Largest Fisheries*, 21 FISH & FISHERIES 740 (2020).

⁴³⁸ Yu Bon Man et al., *Shark Fin, A Symbol of Wealth and Good Fortune May Pose Health Risks: The Case of Mercury*, 36 ENVTL GEOCHEMISTRY & HEALTH, 1015 (2014).

⁴³⁹ G. Mourente & D. R. Tocher, *Tuna Nutrition and Feeds: Current Status and Future Perspectives*, 17 REV. FISHERIES SCIENCE, 373 (2009).

capture is only for scientific research. Japan might undervalue the whale conservation due to the temporal and geographical diffusion of whale conservation.

Temporal diffusion of global whale conservation may trigger specific psychological reactions for states to undervalue the exact importance of such preservation. While some whale species have shown signs of recovery, most whale species remain endangered.⁴⁴⁰ Recently, the U.S. government has proposed delisting a significant portion of the global humpback whale populations from the federal endangered species list, citing their significant recovery over the past 45 years since their initial listing. Donna Wieting, the director of the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office of Protected Resources, expressed satisfaction with this conservation milestone. She highlighted the successful efforts that have contributed to rescuing the species from the brink of extinction.⁴⁴¹

Yet another scientific study argues that ocean warming threatens southern whale population recovery, especially in the Antarctic area. Through an analysis of data spanning five decades (1971–2017) that focused on individually identified southern right whales at Península Valdés, Argentina, the study observed a significant rise in whale mortality rates after El Niño events.⁴⁴² Empirical modeling of the population's reaction to variations in the occurrence and strength of El Niño events indicated that these events are probable hindrances to the recovery of SRW populations and could potentially lead to population decline. These consequences may disrupt food-web dynamics in the Southern Ocean, diminishing the ecosystem's role in mitigating

⁴⁴⁰ Robert Lacy et al., *Evaluating Anthropogenic Threats to Endangered Killer Whales to Inform Effective Recovery Plans*, 7 SCIENTIFIC REPORTS 14119 (2017).

⁴⁴¹ Virginia Morell, *Most Humpback Whales no Longer Endangered, United States Says*, *Scienceindider*, Sep. 7, 2016, at <https://www.science.org/content/article/most-humpback-whales-no-longer-endangered-united-states-says>.

⁴⁴² Macarena Agrelo et al., *Ocean Warming Threatens Southern Right Whale Population Recovery*, 7 SCIENCE ADVANCES (2021).

the climate change on a global level.⁴⁴³ Therefore, the whale species is still in an unstable condition that demands further observation and conservation.

Overfishing presents a distinct challenge in terms of how its impacts spread over time, complicated by how technological advancements both enable and constrain simultaneously our understanding of ocean biodiversity conservation. The value we place on future ocean biodiversity is contingent upon the information available to us at present.⁴⁴⁴ The status quo bias suggests that individuals tend to prioritize the value of possessions they currently own over potential future environmental benefits.⁴⁴⁵ This bias may result in individuals neglecting the potential future loss in ocean biodiversity conservation, particularly evident when we consider the removal of humpback whales from the list of protected species in the U.S. Yet in fact, the whale stock remains still uncertain under observation.

Fragmentation

The violation can also be observed through the psychology of fragmentation. When faced with too much and massive information, a paralysis in decision-making process could slow down the compliance and practice.⁴⁴⁶ Anderson identifies three types of decision paralysis:⁴⁴⁷ status quo prejudice, omission bias, and choice deferral. Status quo prejudice refers to decision-makers' preference for maintaining the present condition,⁴⁴⁸ whereas omission bias arises when individuals

⁴⁴³ *Id.*

⁴⁴⁴ Rowell & Bilz, *supra* note 29, p. 4.

⁴⁴⁵ Raquel Fernandez & Dani Rodrik, *Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty*, 81 THE AM. ECONOMIC REV., 1146 (1991).

⁴⁴⁶ Schwartz, *supra* note 259; Iyengar & Lepper, *supra* note 293; Tversky & Shafir, *supra* note 258.

⁴⁴⁷ Christopher Anderson, *The Psychology of Doing Nothing: Forms of Decision Avoidance Result from Reason and Emotion*, 129 PSYCHOLOGICAL BULLETIN, 139 (2003).

⁴⁴⁸ William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY, 7 (1988).

refrain from making a decision.⁴⁴⁹ Although status quo bias and omission bias frequently result in the same outcome and are closely connected, they can occur separately.⁴⁵⁰ Choice deferral, on the other hand, occurs when decision-makers choose not to make a decision immediately and instead postpone it forever.⁴⁵¹ According to research, these various types of choice paralysis have similar causes, notably heightened decisional conflict and accompanying confusion about preferences.⁴⁵² Additionally, negative emotions such as expected regret emotion might lead decision-makers to select an avoidant alternative.⁴⁵³ Furthermore, the cognitive effort required for assessment costs might help to explain decision paralysis.⁴⁵⁴

International fragmentation is evident across various domains, including the preservation of fisheries stocks. Key international treaties such as the United Nations Convention on the Law of the Sea and the Fish Stock Agreement serve as foundational frameworks for marine biodiversity conservation. Additionally, regional fisheries organizations play a vital role in regulating fisheries activities, combating illegal fishing practices, and allocating fisheries quotas among member states.

Several notable examples of these regional fisheries organizations include the International Commission for the Conservation of Atlantic Tunas, the Northwest Atlantic Fisheries Organization, the Western and Central Pacific Fisheries Commission, the Indian Ocean Tuna

⁴⁴⁹ Ilana Ritov & Jonathan Baron, *Outcome Knowledge, Regret and Omission Bias*, 64 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES, 119 (1995).

⁴⁵⁰ Schweitzer Maurice, *Disentangling Status Quo and Omission Effects: An Experimental Analysis*, 58 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES, 457 (1994).

⁴⁵¹ Dhar Ravi, *The Effect of Decision Strategy on Deciding to Defer Choice*, 9 J. BEHAVIORAL DECISION MAKING, 245 (1996).

⁴⁵² Donald Redelmeier & Eldar Shafir, *Medical Decision Making in Situations that Offer Multiple Alternatives*, 273 J. AM. MEDICAL ASSOCIATION, 302 (1995); Tversky & Shafir, *supra* note 258.

⁴⁵³ Daniel Keys & Barry Schwartz., *"Leaky" Rationality: How Research on Behavioral Decision Making Challenges Normative Standards of Rationality*, 2 PERSPECTIVES ON PSYCHOLOGICAL SCIENCE, 162 (2007).

⁴⁵⁴ John Gourville & Dilip Soman, *Overchoice and Assortment Type: When and Why Variety Backfires*, 24 MARKETING SCIENCE, 382 (2005).

Commission, the North Pacific Fisheries Commission, the General Fisheries Commission for the Mediterranean, and the Commission for the Conservation of Antarctic Marine Living Resources.

Regarding whaling management, the IWC stands out as the primary international body dedicated to whale conservation. It collaborates with other regional or supplementary organizations such as the North Atlantic Marine Mammal Commission, the International Union for Conservation of Nature, and the CITES commission. Though the IWC is the major mechanism, other international treaties still play a role in improving the whaling conservation. The complexity and scope of these massive institutions can impose a significant informational burden on state decision-makers, potentially slowing down or impeding their compliance processes.

Japan's breach of the Whaling Convention could face significant fragmentation within the realm of international law and institutions, considering its involvement in multiple international legal frameworks.⁴⁵⁵ Though it withdrew from IWC in 2019, Japan has worked in conjunction with pertinent international organizations to actively participate in a sustainable management of whale resources. This engagement entails taking part in the IWC Scientific Committee in May 2020 as an observer, carrying out non-lethal research projects like the IWC-Pacific Ocean Whale and Ecosystem Research and the Japanese Abundance and Stock-structure Surveys in the Antarctic (JASS-A), and exchanging research results and catch information.

Japan highlighted the significance of preventing illicit fishing during the 2019 G20 Osaka Summit, emphasizing the necessity to address IUU fishing for the sustainability of marine resources and the protection of biodiversity.⁴⁵⁶ Additionally, Japan promotes the Agreement on

⁴⁵⁵ Ministry of Foreign Affairs of Japan, Diplomatic Bluebook 2021, Chapter 3 Japan's Economic Diplomacy to Promote National and Global Interests, at https://www.mofa.go.jp/policy/other/bluebook/2021/en_html/chapter3/c030403.html.

⁴⁵⁶ Zinaida Fadeeva & Rene van Berkel, *Unlocking Circular Economic for Prevention of Marine Plastic Pollution: An Exploration of G20 Policy and Initiatives*, 277 J. ENVTL MANAGEMENT, 1 (2021).

Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing (PSMA) to non-signatory nations, which in turn promoted more international conversations about marine biodiversity and conservation.⁴⁵⁷

As the ice in the Central Arctic Ocean diminishes due to global warming, Japan has taken proactive steps to combat illicit fishing. In October 2018, ten nations and organizations signed the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean,⁴⁵⁸ aiming to manage fishing activity in this region when it became accessible. Japan regularly engages in discussions and meetings to enhance conservation and management efforts within tuna RFMOs, given its significant consumption of tuna. Drawing on scientific evidence indicating the recovery of adult fish stocks, Japan has advocated for increased harvest limits for Pacific Bluefin tuna in forums such as the 2020 Northern Committee of the Western and Central Pacific Fisheries Commission.⁴⁵⁹ While cautionary input did not result in an increase in the catch limit, CMMs were modified to ensure the fulfillment of resource recovery objectives.

Following the dissolution of the International Commission for the Conservation of Atlantic Tunas in 2020, Japan argued in favor of maintaining the total permitted catch for Atlantic tuna,⁴⁶⁰ showcasing its dedication to conservation and sustainable fisheries management. Additionally, Japan announced its withdrawal from the General Fisheries Commission for the Mediterranean in

⁴⁵⁷ Ministry of Foreign Affairs of Japan, Fishery Division, Combatting IUU Fishing and Japan's Contributions, 2023, at <https://www.mofa.go.jp/files/100070980.pdf>.

⁴⁵⁸ Arctic Council, *An Introduction to: The International Agreement to Prevent Unregulated Fishing in the High Seas of the Central Arctic Ocean*, June 25, 2021, at <https://arctic-council.org/news/introduction-to-international-agreement-to-prevent-unregulated-fishing-in-the-high-seas-of-the-central-arctic-ocean/>.

⁴⁵⁹ Ministry of Foreign Affairs of Japan, Chapter 3 Japan's Economic Diplomacy to Promote National and Global Interest, Diplomatic Bluebook 2021, at https://www.mofa.go.jp/policy/other/bluebook/2021/en_html/chapter3/c030403.html.

⁴⁶⁰ T. Matsumoto et al., *Standardization of Albacore CPUE for South Atlantic Core Area by the Japanese Longline Fishery*, 78 ICCAT SCI. PAP. 158 (2021).

2020, citing its reliance on recent tuna conservation measures implemented by ICCAT and the inactivity of its fishing vessels in the Mediterranean Sea since 2010.⁴⁶¹

The extensive and intricate institutional information available may pose challenges to Japan's decision-making process, compliance, and adherence to international obligations, potentially leading to breaches of the Whaling Convention. While further empirical evidence and correlation are necessary to fully establish this link, this study suggests that adopting a psychological perspective can offer an alternative and insightful understanding of such actions. Furthermore, understanding the behavioral consequences and implications can guide the evolution of international environmental law.

Political Borders

The psychology of political borders can also shed light on the violation from Japan. The whale is a species known for its extensive migration. For example, the gray whale undertakes an annual migration from the lagoons of Baja California in Mexico to the Bering Sea and Arctic Ocean north of Alaska and then returns to the same lagoons in Mexico.⁴⁶² The migratory behavior of whales gives rise to the transboundary nature of whale conservation, requiring concerted conservation efforts across borders rather than being restricted to the environmental impact within a single political boundary.

The differing opinions from Japan and scientific evidence can be understood through the psychology of political borders. The Japanese Ministry of Foreign Affairs claimed that whale stocks have recovered, and that the resumption of commercial whaling should be appropriate.⁴⁶³

⁴⁶¹ Erik Molenaar, *Regional Fisheries Management Organizations*, in GLOBAL CHALLENGES AND THE LAW OF THE SEA 81-109 (Marta Chantal Ribeiro et al., eds., 2020).

⁴⁶² C. H. Lockyer & S. G. Brown, *The Migration of Whales*, in ANIMAL MIGRATION 106 (D. J. Aidley ed., 1981).

⁴⁶³ Ministry of Foreign Affairs in Japan, Japan and the Management of Whales, at <https://www.mofa.go.jp/policy/economy/fishery/whales/japan.html>.

The Japanese government argued that, despite scientific data indicating the abundance of specific whale species, member states prioritizing whale conservation over sustainable whale usage have failed to align on the orderly growth of the whaling sector, as specified in the ICRW.⁴⁶⁴ Furthermore, the 67th IWC Meeting in September 2018 highlighted that the IWC had not yet resolved the discord among member states regarding their perspectives and attitudes toward whaling. The Convention acknowledged Japan's proposal for the systematic expansion of the whaling industry, yet ultimately Japan's proposal was not included in the resolution. Consequently, on June 30, 2019, Japan withdrew from the ICRW and resumed commercial whaling in July of the same year.⁴⁶⁵ Japan's withdrawal from the ICRW reflects the government's stance on whale conservation efforts, indicating a perception that conservation efforts have been successful and that restrictions should be relaxed.

Research in the psychology of political borders has shown that individuals often underestimate the environmental impact beyond their own political borders. They tend to believe that their own state is capable of effectively managing environmental impacts.⁴⁶⁶ This tendency could be applied to the context of whale conservation. As noted, whale is a migratory mammal that involves transboundary governance under international law and cooperation.⁴⁶⁷ This implies that state decision-makers could underestimate or undervalue the seriousness of such conservation issue. Though Japan has cultural emphasis on whaling capturing,⁴⁶⁸ it might also undervalue the impact of whale conservation.

⁴⁶⁴ Ministry of Foreign Affairs of Japan, Statement by Chief Cabinet Secretary, at https://www.mofa.go.jp/ecm/fsh/page4e_000969.html.

⁴⁶⁵ *Supra* note 463.

⁴⁶⁶ Mishra & Mishra, *supra* note 269.

⁴⁶⁷ Christina Geijer & Peter Jones, *A Network Approach to Migratory Whale Conservation: Are MPAs the Way forward or Do All Roads Lead to the IMO?*, 51 MARINE POL'Y, 1 (2015).

⁴⁶⁸ See generally, HIROYUKI WATANABE, JAPAN'S WHALING, THE POLITICS OF CULTURE IN HISTORICAL PERSPECTIVE (2009).

Scientific research in the past has shown that while certain whale species are not classified as critically endangered, there are ongoing concerns about the whale population in Antarctica.⁴⁶⁹ In Antarctica, Australia's legal action against Japan's whaling operations reflects these concerns, suggesting that the situation of whale stocks in the Antarctic appears less optimistic than previously believed, necessitating careful attention and consideration regarding their capture. Opposite to the prevailing view, Japan asserts that the whale population is not as threatened as commonly believed and advocates for continued capture through its withdrawal from the IWC. This attitude of undervaluing the conservation of whales aligns with the findings of psychological research, which indicates that individuals often underestimate the environmental impact beyond their country's borders. This psychological insight into Japanese stances suggests that a greater coordination through international law could be a viable solution.

3.4 CONCLUSION

The psychological dimensions of IEL significantly aid in understanding state behavior within environmental regulation. This research underscores how states' psychological responses to the environmental impact and cross-border nature of whaling can influence the development and enforcement of whaling laws. Through psychological analysis, we gain insights into the establishment of the whaling convention and Japan's breach of legal obligations.

The application of psychological concepts to the Whaling Convention deepens our comprehension of how psychology impacts the perception of legitimacy in IEL. The psychology of IEL provides additional insights that go beyond what an economic perspective offers, so

⁴⁶⁹ Rebecca Leaper & Simon Childerhouse, *Present and Future Conservation Management of Antarctic Baleen Whales*, in ANTARCTIC FUTURES, HUMAN ENGAGEMENT WITH THE ANTARCTIC ENVIRONMENT 97-112 (Tina Tin et al., eds., 2014).

enhancing the process of assessing the value of biodiversity conservation. The Whaling Convention case study illustrates the influence of cognition, motivation, and emotion on the process of valuation, which in turn affects the perception of legitimacy.

Moreover, this study argues that the psychological perspective enriches our understanding of state behavior, particularly concerning the creation and application of whaling regulations. It highlights the psychological factors that inform state actions in this domain and suggests that the legitimacy of the whaling convention extends beyond mere economic considerations.

Japan's violation serves as an illustration of how economic factors alone may not fully explain such breaches. An alternative but valuable explanation for these actions could be found in a psychological approach that considers political boundaries and fragmentation. Ultimately, the psychology of IEL enhances our comprehension of state behavior and decision-making processes in environmental governance.

This chapter lays the groundwork for the application of the psychology of IEL within the context of the Whaling Convention. The next chapter will discuss further this application. Additionally, this chapter introduces the discussion on the WTO Environmental Goods Agreement. Despite the fact that this negotiation failed, valuable insights into the reasons for the failure are gained by incorporating a psychological perspective.

CHAPTER 4. THE PSYCHOLOGY OF NEGOTIATION AND THE WTO ENVIRONMENTAL GOODS AGREEMENT

This chapter delves into the application of psychological insights to IEL in international negotiation discussions. It argues that viewing negotiation through a psychological lens provides an alternative understanding, illustrated through the Environmental Goods Agreement (EGA) negotiation. While the failure of the EGA negotiation is commonly attributed to prioritizing economic interests, this prioritization aligns with rational choice theory. However, rational choice theory fails to explain why, in the initial negotiation stages, there was an effort to create a win-win scenario for both economic and environmental aspects. This raises the question: *if economic prioritization is consistent, why did states engage in addressing global environmental impacts through international trade agreements?* Although the failure of the negotiation demonstrated economic prioritization, the motivation for initiating this negotiation is not well explained by the current scholarly discourse. The result of the EGA negotiation suggests that factors beyond rational choice, such as cognition, motivation and even emotion, play a role in states' decision-making processes, which rational choice theory does not fully capture. Therefore, this chapter argues that understanding the paradox of balancing environmental and economic interests requires a psychological framework.

By incorporating psychological analysis, this chapter argues that we can better understand how and why the EGA negotiation process is stalled by drawing on research at the intersection of law and psychology, international law, and environmental law. In particular, it draws on research on the psychology of negotiation. What factors affect state negotiations of international environmental agreements? Traditional rational choice models assume that states' negotiations are

dictated by rational self-interest. This chapter suggests that we gain a richer understanding of state negotiation if we recognize that state negotiations not only pertain to economic interests; they also involve cognitive information, motivation process, social dynamics, communication techniques and informative preference. In particular, psychological phenomena concerning the negotiation process can influence the preference and valuation of states and result in subconscious prioritization of economic interests over environmental interests. In some cases, as with [EXAMPLE], understanding these factors may help us understand why negotiations succeeded. In others—as, perhaps, with the Environmental Goods Agreement (EGA)—it may illuminate how and why negotiations in international environmental law can fail. This analysis contributes towards developing a more comprehensive understanding of why international environmental negotiations may fail and how psychological insights can contribute to overcoming such challenges.

This chapter is organized into three main sections. The first part introduces background information about the legal framework for environmental goods and its history with the WTO, providing an overview of the complexities regarding environmental goods on the international stage. The subsequent section discusses the conventional perspective on the failure of EGA negotiations, mainly focusing on the limitations of rational choice theory in explaining states' preferences and valuations. Acknowledging these limitations, the chapter then delves into the intersection of psychology and negotiation in its third section, emphasizing four key areas—cognition, motivation, emotion, and social context—that significantly influence negotiation outcomes that cannot be adequately addressed by rational choice theory. Building on this framework, the chapter extensively discusses the application of psychology in IEL, particularly its relevance to WTO EGA negotiations. Additionally, it explores six psychological aspects related to transboundary environmental harm governance, aiming to analyze potential psychological

factors such as reactions, preferences, and perceptions that may have contributed to the negotiation's breakdown and to supplement rational choice theory's insights. The chapter argues that psychology and rational choice theory are not contradictory but rather complement each other, suggesting that a psychological approach can provide a deeper understanding of state actions and decision-making processes.

4.1 UNDERSTANDING THE WTO ENVIRONMENTAL GOODS AGREEMENT

This section describes the WTO's EGA. The WTO EGA serves as a valuable case study that highlights the limitations of rational choice theory and the analytical potential that psychological approaches can provide. If rational choice theory were the sole explanatory framework for the state behavior, environmental concerns would not have arisen in WTO discussions as states would have solely prioritized economic interests. However, the EGA negotiations reveal that state interests extend beyond purely economic considerations. Exploring the interests and concerns that motivate and impact state behavior beyond economic motivations can be better addressed by disciplines like psychology.

The section provides background information on the WTO EGA, starting with an overview of the EGA negotiations that ultimately failed to achieve a consensus despite initial optimism. It also outlines the evolution of environmental goods within international law, tracing their development from various forums to their inclusion in WTO discussions. By providing this information, this section helps delve into deeper conversations on rational choice theory and psychological observation.

The WTO introduced the EGA to facilitate the exchange of environmentally sustainable products and technologies on a global scale. This initiative aims to eliminate tariffs and other trade barriers that hinder the production and distribution of eco-friendly goods, encompassing a broad spectrum of items such as renewable energy technology, waste management solutions, air pollution control devices, and water treatment systems.

Since its inception in 2001, the EGA has undergone numerous rounds of negotiations involving various WTO member countries. Its primary objective is to establish a framework that facilitates the international trade of environmentally beneficial products, promoting the widespread adoption of sustainable technologies and practices worldwide. The core purpose of the EGA is to promote the accessibility and affordability of green products in the hope of fostering sustainable development. By removing tariffs and trade impediments, the agreement aims to channel investments into green sectors and spur innovation in environmental technologies.

Despite its laudable goals, the EGA has encountered challenges. Concerns have been raised regarding its potential impact on domestic industries, the timing of tariff reductions, and disagreements over the scope of items covered under the agreement. Nevertheless, the EGA remains a significant initiative in the realm of international trade, signaling (a) global recognition of the importance of environmentally friendly practices and technologies.

The negotiations for the EGA did not culminate in the finalization of a treaty. The conventional account for this failure is economic: that the pursuit of economic interests and conflicting benefits were the primary reasons for the breakdown in negotiations. This is consistent with rational choice theory in international law, which posits that states seek to maximize their self-interest and that (only) self-interest motivates their actions. However, this theory alone does not fully explain the complexities involved in negotiation processes. In particular, rational choice

theory predicts and explains state choices based on self-interest but does not specify which types of interests a state will prioritize or why the state would opt for one over another concern when faced with conflicting economic and environmental interests. The depth of these discussions can be expanded through the inclusion of psychological perspectives later in this chapter.

As commonly understood, environmental goods are those that “measure, prevent, limit, minimize, or correct environmental damage to water, air, and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products, and services that reduce environmental risk and minimize pollution and resource use.”⁴⁷⁰ The notion of providing such goods was first described by the Organization for Economic Cooperation and Development (OECD) in 1999,⁴⁷¹ and in 2012, the Asia-Pacific economic Cooperation (APEC) adopted 54 products in the environmental goods list for the annex C of its Leader’s Declaration, a joint announcement made by all participants after the conference.⁴⁷² As APEC explained at the time, environmental goods were thought to be helpful both to the green growth and to environmental protection.⁴⁷³ Reducing tariffs on products that contribute to environmental protection lower the cost, increase trade liberalization, and accelerate the usage of environmentally friendly products. This “win-win” strategy was deemed an efficient way to improve the global environment while also incentivizing the international trade.

⁴⁷⁰ Organisation for Economic Co-operation and Development (OECD) Statistical Office of the European Communities, *The Environmental Goods and Services Industry Manual for Data Collection and Analysis* (1999), at https://unstats.un.org/unsd/envaccounting/ceea/archive/EPEA/EnvIndustry_Manual_for_data_collection.PDF., ch 2 art. 1.

⁴⁷¹ *Id.*

⁴⁷² Asia-Pacific Economic Cooperation (APEC), 2012 Leader’s Declaration, https://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm; APEC List of Environmental Goods, https://www.apec.org/meeting-papers/leaders-declarations/2012/2012_aelm/2012_aelm_annexc.

⁴⁷³ Carlos Kuriyama, *Time to Expand the APEC List of Environmental Goods*, May 17, 2002, ASIA-PACIFIC ECONOMIC COOPERATION BLOG, at <https://www.apec.org/press/blogs/2022/time-to-expand-the-apec-list-of-environmental-goods>; Rui Wan et al., *Trade Liberalization in Environmental Goods*, 51 RESOURCE & ENERGY ECONOMICS, 44 (2018).

Since the adoption of the first list of environmental goods by APEC in 2012, the amount of environmental goods traded has risen annually.⁴⁷⁴ Recent inclusion of the environmental goods mechanism in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) provided a forum for bilateral or multilateral arrangements among contracting parties.⁴⁷⁵ Inclusion of a list of environmental goods in such arrangements was encouraged. The growing importance of environmental commodities also drew the attention of the WTO, whose member states urged the establishment of a more globalized agreement to encompass environmental goods.

Recognizing the increasing significance and opportunities presented by environmental goods, the WTO began negotiations to reach an EGA in 2014. Optimism was high, with hopes that believed that the scope of EGA could further encompass to all WTO members via the most-favored-nation treatment, leading to the development of a comprehensive global treaty. Notably, the anticipated reduction of taxes could have saved up to 485 million dollars annually.⁴⁷⁶ In addition, the EGA had the potential to integrate or build upon existing international environmental treaty measures, such as the Montreal Ozone Layer Protocol.⁴⁷⁷ This 1987 measure aimed at phasing out the ozone depletion substances has undergone multiple extensions, and the EGA could have been used to further bolster its mission by curtailing trade in ozone-depleting products.⁴⁷⁸

Against this promising backdrop, from 2014 to 2016, nineteen parties engaged in multiple rounds of negotiations with the aim of crafting a WTO EGA framework that would garner

⁴⁷⁴ United Nations Environment Programme, Trade in Environmental Goods at a Glance, https://www.dropbox.com/sh/fcfdsms0qjj4t09/AAA3lD7dpAfmOu_YMzPoS9U-a?dl=0. The table of this report shows that the total export value of environmental goods from 2001 to 2016 has grown by more than 100%.

⁴⁷⁵ Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), ch 9, Mar. 8, 2018, 3346 U.N.T.S. 7.

⁴⁷⁶ Kornel Mahlstein & Christine McDaniel, *The Environmental Goods Agreement: How Would US Households Fare?*, ICTSD POLICY BRIEF (2017).

⁴⁷⁷ Montreal Protocol on Substances that Deplete the Ozone Layer, Sep. 16, 1987, 1522 U.N.T.S. 26369.

⁴⁷⁸ Jaime de Melo & Jean-Marc Solleder, *The Role of an Environmental Goods Agreement in the Quest to Improve the Regime Complex for Climate Change*, EUROPEAN UNIVERSITY INSTITUTE WORKING PAPER (2019).

consensus.⁴⁷⁹ Regrettably, the last negotiation took place in 2016—without agreement. Four key reasons for the negotiation failure were analyzed. Firstly, China's environmental product list caused surprise and discord among negotiators, hindering consensus. Second, disagreement arose between China and the US over the baseline for the free-rider clause. Third, while parties agreed on tariff phase-outs, disagreements persisted regarding the timeline or quantity. Finally, the EU's objection to including bicycles in the environmental goods deal, coupled with China's anti-dumping measures, prevented the EU from classifying bicycles as environmental goods.⁴⁸⁰ Traditional rational choice theory offers economic insights into these issues, though its coverage is not exhaustive, it remains a valuable analytical framework.

4.2 THE CONVENTIONAL ACCOUNT OF THE WTO

ENVIRONMENTAL GOODS AGREEMENT: RATIONAL CHOICE

THEORY AND ITS LIMIT

This section argues that the psychology of IEL could offer a supplemental viewpoint on the failure of the EGA negotiation, suggesting that economic interests may have prevailed as a result of environmental undervaluation.⁴⁸¹ International trade negotiations frequently spark interest conflicts of interests, because countries tend to overlook environmental concerns at these forums. In the case of the EGA, the agreement is expected to advance both economic growth and environmental protection. However, the breakdown of negotiations over this agreement at the WTO underscores the prevalent prioritization of economic concerns.⁴⁸² Countries often place their

⁴⁷⁹ World Trade Organization, *Negotiation on Trade and the Environment*, https://www.wto.org/english/tratop_e/envir_e/envir_negotiations_e.htm (last access at Sep 4th, 2022).

⁴⁸⁰ de Melo & Solleder, *supra* note 478, at 4-5.

⁴⁸¹ Jaime de Melo & Jean-Marc Solleder, *Barriers to Trade in Environmental Goods: How Important They Are and What Should Developing Countries Expect from Their Removal*, 130 WORLD DEVELOPMENT (2020).

⁴⁸² *Id.*

self-interest above the delicate balance between economic interests and environmental protections. This skewed outcome begs the question: why do countries prioritize economic interests over agreements aimed at protecting the shared natural environment and environmental goods? In other words, why do decision makers of states have divergent perspectives when presented with agreements designed to safeguard the shared natural environment?⁴⁸³ Rational choice theory falls short in explaining the valuation process in such cases because it fails to adequately account for the complex nature of transboundary harm.

The environmental goods mechanism holds promise for environmental protection and economic development. By promoting environmental goods, it becomes practical to sustain the natural environment.⁴⁸⁴ Moreover, tariff concessions and the removal of non-tariff barriers could increase market access and expedite trade liberalization.⁴⁸⁵ Given these benefits the international community thus viewed this mechanism to be a "win-win" deal, anticipating several positive outcomes.⁴⁸⁶ However, the outcome did not align with the initial expectations.

What explains the failure of this seemingly promising agreement, especially given the increasing market importance of environmental goods globally? The conventional account, described below, attributes the failure to misaligned state interests. This chapter, however, argues that the failure of the agreement can be better understood through the lens of the psychology of IEL, and more specifically, that psychology can help enrich our understanding of why and how the agreement faltered.

⁴⁸³ ANDREA BIANCHI, *INTERNATIONAL LAW THEORIES: AN INQUIRY INTO DIFFERENT WAY OF THINKING* 3 (2016).

⁴⁸⁴ Muhlis Cana et al., *The Role of Trading Environment-Friendly Goods in Environmental Sustainability: Does Green Openness Matter for OECD Countries?*, 295 JOURNAL OF ENVIRONMENTAL MANAGEMENT (2021).

⁴⁸⁵ Kuriyama, *supra* note 473.

⁴⁸⁶ United Nations Environment Programme, *Trade in Environmental Goods*, at <https://www.unep.org/explore-topics/green-economy/what-we-do/environment-and-trade-hub/trade-environmental-goods>.

To understand what the psychological account offers, however, it is useful to first understand the conventional explanation. Traditionally, an economic approach to valuation employs contingent valuation (CV), a survey-based technique that allocates monetary values to non-marketable environmental assets and services.⁴⁸⁷ Comprehensive surveys would be conducted by researchers using a combination of in-person interviews, telephone interviews, and postal surveys. This method evaluates environmental products and services based on the monetary worth that individuals put on obtaining or avoiding them, without requiring an actual sale. It merely involves predicting how much purchasing power individuals would sacrifice to acquire them (or accept as compensation to forego them).⁴⁸⁸ Nonetheless, CV has its drawbacks. The willing-to-pay survey questions may introduce biases into the valuation process.⁴⁸⁹ In certain contexts, such as environmental impact assessments, contingent valuation can be prohibitively expensive.⁴⁹⁰ Furthermore, there often exists a discrepancy between what individuals claim they would do and what they actually report doing.⁴⁹¹ Accordingly, the valuation process could be a subjective procedure in which psychological perceptions and estimations play a role in decision-making.

Rational choice theory employs contingent valuation as a method to estimate the interest of a given matter at issue. Contingent valuation is a technique used to assess the value of goods or services not traded in traditional markets. It involves querying individuals about the amount they would be willing to pay (or accept) for a specific item or service, using carefully crafted survey questions. Despite its controversial nature, contingent valuation and similar methods like choice

⁴⁸⁷ UDDIN SARWAR UDDIN AHMED & KEINOSUKE GOTOH, COST-BENEFIT ANALYSIS OF ENVIRONMENTAL GOODS BY APPLYING THE CONTINGENT VALUATION METHOD: SOME JAPANESE CASE STUDIES 12 (2006).

⁴⁸⁸ *Id.* p. 7.

⁴⁸⁹ Daniel McFadden & Gregory Leonard, *Issues in the Contingent Valuation of Environmental Goods: Methodologies for Data Collection and Analysis*, in CONTINGENT VALUATION: A CRITICAL ASSESSMENT 202 (J. A. Hausman ed., 1993).

⁴⁹⁰ Christopher Bruce, *Can Contingent Valuation Resolve the "Adding-Up Problem" in Environmental Impact Assessment?*, 26 ENVTL IMPACT ASSESS REV., 570 (2006).

⁴⁹¹ Ahmed & Gotoh, *supra* note 487, p. 7.

experiments are widely employed for nonmarket valuation purposes.⁴⁹² Economists and game theorists focused on developing mathematical models for rational decision-making,⁴⁹³ primarily providing recommendations on negotiation strategies. Raiffa, through empirical study, later emphasized the importance of understanding actual negotiator behavior to effectively prescribe strategies, leading to the emergence of the descriptive tradition in negotiation studies.⁴⁹⁴

In general, proponents of rational choice theory in international law assert that countries act to maximize their own economic interests.⁴⁹⁵ This economic point of view suggests that the benefits of agreements like the EGA are restricted to developing countries. Some claim that the perceived lack of advantage for developing countries leads to their low engagement, thereby contributing to negotiation impasse.⁴⁹⁶ However, others argue that the terms of the EGA offer sufficient inducements for the participation of developing countries,⁴⁹⁷ implying that factors beyond economic benefits may be at play. This range of theories underscores the importance of considering motivation and undervaluation as key elements in understanding the situation.

Scholarly studies have extensively analyzed various aspects of the unsuccessful negotiations.⁴⁹⁸ Notably, developing countries showed little enthusiasm for engaging in the discussions, with only China, Costa Rica, and Turkey participating in the WTO negotiation. This lack of involvement has sparked debates from developing countries, with some arguing that it leads

⁴⁹² Kevin Boyle, *Contingent Valuation in Practice*, in A PRIMER ON NONMARKET VALUATION 83-131 (Patricia Champ et al., eds. 2017).

⁴⁹³ Gholamreza Askari et al., *The Behavioral Model and Game Theory*, 5 PALGRAVE COMMUNICATIONS, 57 (2019).

⁴⁹⁴ HOWARD RAIFFA, *THE ART AND SCIENCE OF NEGOTIATION* 44-66 (1982).

⁴⁹⁵ See generally, Goldsmith & Posner, *supra* note 13.

⁴⁹⁶ Mark Wu, *Why Developing Countries Won't Negotiate: The Case of the WTO Environmental Goods Agreement*, 6 TRADE LAW & DEVELOPMENT, 93 (2014).

⁴⁹⁷ Robert Hamway, *Environmental Goods: Identifying Items of Export Interest to Developing Countries*, CTBF BRIEFING NOTE PREPARED BY THE UNCTAD SECRETARIAT (2004); International Centre for Sustainable Trade and Development, *Environmental Goods: Where Do the Dynamic Trade Opportunities for Developing Countries Lie?* (2005); Veena Jha, *Environmental Priorities and Trade Policy for Environmental Goods: A Reality Check*, ICTSD TRADE AND ENVIRONMENT SERIES ISSUE PAPER NO. 7, 41 (2008).

⁴⁹⁸ Wu, *supra* note 496.

to a lack of representation in the negotiations.⁴⁹⁹ Nonetheless, supporters contend that developing countries indeed have interests at stake.⁵⁰⁰

Further investigation into the failure of the negotiations cites four reasons. First, China's environmental list surprised and disappointed negotiators, leading to a lack of consensus over its contents. Second, China and the US disagree on the free-rider clause baseline. Third, while parties agreed on the phase-out of tariffs, discord persisted regarding on the timeline and quantity. Finally, the EU's opposition to including bicycles in the environmental products, along with China's anti-dumping concerns, hindered the EU from designating bicycles as environmental goods.⁵⁰¹ In essence, these explanations demonstrated how countries disregarded the mutually beneficial foundation of the EGA and instead prioritized their own economic interests.

Rational choice theory provides a framework for understanding specific actions taken by states, offering a structured method to analyze decision-making processes. According to this theory, states are seen as rational entities aiming to maximize their self-interests, guided by their perceptions and motivations.⁵⁰² In the realm of international relations and negotiations, rational choice theory suggests that states rationally assess the costs and benefits of various courses of action before making decisions. This assessment is influenced by their understanding of the situation and their objectives, which may encompass economic gains, security considerations, power projection, or other strategic goals. For instance, states might enter negotiations with the aim of securing favorable trade terms, safeguarding national security, or enhancing diplomatic influence. The theory underscores that states act in a calculated manner, carefully considering

⁴⁹⁹ *Id.*

⁵⁰⁰ Hamwey, *supra* note 497; International Centre for Sustainable Trade and Development, *supra* note 497; Jha, *supra* note 497.

⁵⁰¹ de Melo & Solleder, *supra* note 478, at 4-5.

⁵⁰² Goldsmith & Posner, *supra* note 13, pp. 4-12.

potential outcomes and repercussions of their actions, and act to maximize their own self-interests. This rational approach is often evident in how states conduct diplomatic talks, forge strategic partnerships, and form international agreements. By employing rational choice theory, analysts and policymakers can gain valuable insights into the motivations and strategic calculations that drive state behavior in international relations. However, as previously noted, managing transboundary environmental issues presents unique psychological challenges for countries.

Additionally, rational choice theory focuses on maximizing self-interests but does not define what constitutes or encompasses interests comprehensively. Interests have diverse aspects beyond the economic viewpoint. Other perspectives, such as cognitive and affective motivational factors, argue that these variables influence individual interests.⁵⁰³ Some suggest that interests are intertwined with emotions, leading to learning and human behavior.⁵⁰⁴ Additionally, psychology considers interests alongside motivation, cognition, and emotion, all of which drive human behaviors.⁵⁰⁵ However, rational choice theory overlooks these aspects, which in turn highlights its limitation in comprehensively explaining interest conflicts and choices during negotiations.

The traditional rational choice theory is valuable for analyzing state behavior, but its limitations persist until another discipline intervenes and examines the issue from a different viewpoint. Subsequently, this chapter suggests that adopting a psychological perspective could provide a valuable understanding of preferences and valuations during negotiations, drawing from empirical insights in cognition, motivation, emotion, and social context.

⁵⁰³ K. Ann Renninger & Stephanie Su, *Interest and its Development*, in OXFORD HANDBOOK OF HUMAN MOTIVATION 167 (Richard Ryan ed., 2012).

⁵⁰⁴ Paul Silvia et al., *Interest—The Curious Emotion*, 17 CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE, 57 (2008).

⁵⁰⁵ D. E. Berlyne, *'Interest' as a Psychological Concept*, 39 BRITISH J. PSYCHOLOGY, 184 (1949).

4.3 A PSYCHOLOGICAL ACCOUNT OF THE WTO ENVIRONMENTAL GOODS AGREEMENT

This section explores the role of psychology in negotiation processes, suggesting that a psychological perspective can complement rational choice theory and provide valuable alternative insights into the WTO EGA failure. Understanding transboundary environmental harms presents psychological challenges in terms of perception and valuation. These challenges can impact and potentially undermine the effectiveness of IEL negotiations. This section delves into the application of the psychology of IEL within the EGA negotiation framework. This phase involves a close examination of the various motivations and perceptions that drive states' actions and strategies during these negotiations. By scrutinizing these psychological aspects, the study aims to uncover hidden drivers and influences that may not be readily apparent through the traditional rational choice theory alone. Building upon the previously discussed theory of the IEL psychology, this study asserts that this approach offers unique and valuable insights into the negotiation dynamics and may illuminate aspects of negotiation failures beyond what rational choice theory alone can explain.

There are two discussion points in this section. First part of this section introduces the nexus between psychology and negotiation, arguing the possibility of psychology to employ in negotiation process. Secondly, this section goes deeper and apply the psychology of IEL in the EGA negotiation, claiming that the EGA negotiation could be better understood with the compensatory psychological viewpoint.

The EGA aims to integrate environmental-friendly items into WTO forum, yet it grapples with the psychological challenges stemming from transboundary harm, making it an ideal case for

applying psychology to IEL. By utilizing psychological techniques to examine the WTO EGA negotiation process, this study suggests that environmental undervaluation was a significant element in leading to failure in the discussions. The WTO EGA attempted to fulfill both economic and environmental goals;⁵⁰⁶ nevertheless, the pervasive emphasis on state economic interests throughout the negotiations suggests that environmental concerns were consistently undervalued and relegated to a lower priority. Through a combination of empirical research and a psychological approach, insights into this prevalent yet debatable economic bias may be illuminated.⁵⁰⁷

This section suggests that the negotiation dynamics within the EGA, being a form of communication, exhibit resemblances to other negotiation contexts, thus inherently entailing psychological elements. Prior to the detailed psychological analysis of EGA negotiations, it is crucial to grasp the connection between psychology and negotiation, as such connection sheds light on the psychological aspects involved. This section extends this discussion by introducing key insights from the psychology of negotiation. It then applies these insights to the EGA negotiation.

⁵⁰⁶ Joachim Monkelbaan, *Using Trade for Achieving the SDGs: The Example of the Environmental Goods Agreement*, 51 J. WORLD TRADE, 575 (2017).

⁵⁰⁷ The psychology of negotiation debate emphasizes how psychological aspects including emotion, motivation, social environment, and cognition may have a subtle but significant impact on decision-makers. These elements have a significant impact on how talks go and turn out. Though helpful in many situations involving decision-making, rational choice theory cannot completely account for these psychological components. This theoretical gap offers a chance for continued study to address these important but frequently disregarded details. This chapter aims to provide a more comprehensive understanding of negotiation dynamics by examining the ways in which decision-makers' perceptions and choices in negotiations are influenced by their cognition, their motivations, their emotions, and the social environment. Furthermore, this study might provide useful tactics and suggestions to improve negotiating results by bridging the gap between psychological insights and conventional rational choice theory. This might entail recognizing and reducing cognitive biases that result in less-than-ideal judgments, coordinating incentives for win-win agreements, skillfully controlling emotions during negotiations, and utilizing social dynamics to achieve favorable outcomes. The ultimate goal of this continuing study is to improve our comprehension of negotiation processes through the integration of psychological viewpoints, providing decision-makers in a variety of contexts with useful insights and tactics.

Negotiation is a form of interactive social communication that takes place whenever one party seeks something from another or faces a conflict.⁵⁰⁸ Because negotiation is social communication, social context has a fundamental effect on negotiation.⁵⁰⁹ This means that the social processes of negotiation are complex and involve a range of human psychological elements, including motivation, emotion, and cognition; and implicate interpersonal dynamics including persuasion, communication, collaboration, competitiveness, and power.

The study of psychology in negotiation offers valuable insights into an overlooked aspect for legal professionals, providing a window into how psychology can aid in understanding the negotiation process. Cognition, motivation, emotion, and social context serve as evident examples in this regard. The remainder of this section discusses each of these respectively.

4.3.1 Cognition in Negotiation

The literal definition of cognition refers to “*ability to comprehend, mental act or process of knowing.*”⁵¹⁰ Psychology experiments have delved into the understanding of how and when individual cognition could be impacted and influenced by their ability to understand.⁵¹¹ Empirical studies have also found out several cognitive biases that could lead to lower quality decision during the negotiation process, such as anchoring, self-serving and overconfidence biases.⁵¹² The

⁵⁰⁸ Chris Guthrie & Jennifer Robbennolt, *Negotiation and Bargaining: Role of Lawyers*, 16 INT’L ENCYCLOPEDIA OF THE SOCIAL & BEHAVIORAL SCIENCE, 418 (2015); Michele Gelfand et al., *The Psychology of Negotiation and Mediation*, in APA HANDBOOK OF INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY 495 (S. Zedeck ed., 2011).

⁵⁰⁹ Michele Gelfand & Deborah Cai, *Cultural Structuring of the Social Context of Negotiation*, in THE HANDBOOK OF NEGOTIATION AND CULTURE 238 (Michele Gelfand & Jeanne Brett eds., 2004).

⁵¹⁰ Tim Bayne et al., *What is Cognition?*, 29 CURRENT BIOLOGY, R608 (2019).

⁵¹¹ Jared Jobe, *Cognitive Psychology and Self-Reports: Models and Methods*, 12 QUALITY OF LIFE RESEARCH, 219 (2003); Gerd Gigerenzer, *From Tools to Theories: A Heuristic of Discovery in Cognitive Psychology*, 98 PSYCHOLOGICAL REV. 254 (1991).

⁵¹² Andrea Caputo, *A Literature Review of Cognitive Biases in Negotiation Processes*, 24 INT’L J. CONFLICT MANAGEMENT 374 (2013).

cognition of a negotiator is significant in the negotiation process given their decision-making could impact the conclusion.⁵¹³

The cognitive dimension of negotiation is rooted in foundational insights from law and psychology,⁵¹⁴ including those popularized as “bounded rationality” by Tversky and Kahneman,⁵¹⁵ and further developed by March and Simon in their analysis of decision biases.⁵¹⁶ Progress in negotiation research has been made by illustrating how these biases influence negotiation outcomes and identifying particular biases that affect negotiation settings and dynamics.

According to the prospect theory proposed by Kahneman and Tversky, individuals consider alternative reference points, such as losses or gains, alongside the expected value of a prospect.⁵¹⁷ Furthermore, their findings on framing effects indicate that individuals tend to take more risks when perceiving losses and are more risk-averse when perceiving gains.⁵¹⁸ This concept carries significance in negotiation contexts as it elicits distinct behavioral responses when outcomes are framed as gains or losses. For instance, another study discovers that negotiators employing a gain frame are more likely to achieve more desirable outcomes, employ less risky strategies, and reach more agreements compared to those utilizing a loss frame.⁵¹⁹ Another study corroborates that a loss frame correlates with reduced concession making, heightened contentious

⁵¹³ MAX BAZERMAN & JOHN CARROLL, NEGOTIATOR COGNITION 2-10 (1985).

⁵¹⁴ Tyler, *supra* note 19, pp. 3-8.

⁵¹⁵ Tversky & Kahneman, *supra* note 255.

⁵¹⁶ JAMES MARCH & HERBERT SIMON, ORGANIZATIONS 157-90 (1993).

⁵¹⁷ Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA*, 263 (1979).

⁵¹⁸ Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 *SCIENCE*, 453 (1981).

⁵¹⁹ Max Bazerman et al., *Integrative Bargaining in a Competitive Market*, 35 *ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES*, 294 (1985).

behavior, increased deadlock likelihood, and a lower number of agreements reached during negotiations.⁵²⁰

The role of individual cognition in the negotiation process provides insights into the psychological aspect of negotiation procedures. However, as scholars in law and in psychology have emphasized,⁵²¹ cognition is not the sole factor influencing negotiation outcomes. Further exploration is necessary to fully understand how the psychological aspect shapes our view of the negotiation process.

4.3.2 Motivation in Negotiations

An individual's motivation to achieve a specific goal is influenced by a combination of situational rewards, personal predispositions, and the interplay between these elements.⁵²² The negotiation process can be influenced by the structure of motivation. For example, an empirical study on 64 participants shows that the impact of cognitive motivation in negotiation varies based on the negotiator's role. In one empirical study, participants were grouped into sellers and buyers. Negotiating pairs in which sellers demonstrated high cognitive motivation attained notably superior joint outcomes than those with sellers exhibiting low cognitive motivation. However, the cognitive motivation of buyers did not show a significant effect on negotiation results. Analyzing

⁵²⁰ William Bottom, *Negotiator Risk: Sources of Uncertainty and the Impact of Reference Points on Negotiated Agreements*, 76 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES, 89 (1998); Carl Witte et al., *An Empirical Investigation of Framing Effects in Negotiations: A Study of Single-Family Home Sales*, 25 PSYCHOLOGY & MARKETING, 465 (2008); Henrik Kristensen & Tommy Garling, *The Effects of Anchor Points and Reference Points on Negotiation Process and Outcome*, 71 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES, 85 (1997).

⁵²¹ Tyler, *supra* note 19, pp. 15-21.

⁵²² Jutta Heckhausen & Heinz Heckhausen, *Motivation and Action: Introduction and Overview*, in MOTIVATION AND ACTION 1-14 (2018).

negotiation transcripts revealed that the exchange of information acted as a mediating factor between sellers' cognitive motivation and joint outcomes.⁵²³

Similarly, as Carsten De Dreu has pointed out, it is challenging to envision an individual engaging in negotiation without some form of motivational goal, whether implicit or explicit, unconscious or conscious.⁵²⁴ Negotiators have the option to either compete for the same resources or collaborate with their counterparts to achieve a resolution.⁵²⁵ One of the pioneering scholars in exploring the drivers behind cooperation and competition was Morton Deutsch, who proposed that cooperative negotiators are tend to aim for what he calls “integrative”, or cooperative, outcomes, as opposed to “competitive” ones.⁵²⁶ In his framework, competitive motivation entails "a desire to outperform the other party while also maximizing one's own gains." Cooperative motivation is "a positive concern for both one's own welfare and that of the other party," and individualistic motivation is "a focus on maximizing one's own gains without regard for the other party's welfare."⁵²⁷ Hence, a negotiator's intrinsic motivation, either cooperative or competitive, impacts their anticipation or ultimate assessment of the negotiation outcome.

The social motivation of negotiators plays a significant role in individual strategic actions in negotiation process and result as well.⁵²⁸ Messick and McClintock propose four primary categories of social motivations: a cooperative, individualistic, competitive, and altruistic. When

⁵²³ Vidar Schei et al., *Thinking Deeply May Sometimes Help: Cognitive Motivation and Role Effects in Negotiation*, 55 APPLIED PSYCHOLOGY, 73 (2006).

⁵²⁴ Carsten De Dreu, *Motivation in Negotiation, A Social Psychological Analysis*, in THE HANDBOOK OF NEGOTIATION AND VULTURE 114 (Michele Gelfand ed., 2004).

⁵²⁵ Robin Bouwman et al., *Cooperation and Competition in Public-Sector Negotiations: A Laboratory Experiment*, 42 PUBLIC PERFORMANCE & MANAGEMENT REV. 1164 (2019).

⁵²⁶ Morton Deutsch, *A theory of Cooperation and Competition*, 2 HUMAN RELATIONS, 199 (1949).

⁵²⁷ Morton Deutsch, *Constructive Conflict Resolution: Principles, Training, and Research*, 50 J. SOCIAL ISSUES, 13, 14 (1994).

⁵²⁸ Laurie Weingart et al., *Conflicting Social Motives in Negotiating Groups*, 93 J. PERSONALITY & SOCIAL PSYCHOLOGY 994 (2007).

engaging with rivals or peers in social situations, these forms of motivations reflect a variety of goals and outcomes.⁵²⁹

Altruistic motive prioritizes the interests and welfare of others over one's own. Individuals driven by altruism are willing to make compromises or sacrifices for the collective benefit. Collaborative persons seek to meet their partners' needs, which further drives cooperative motivation. They prefer collaborative efforts and strive for win-win situations. Furthermore, motivational individualism describes how individuals prioritize their own objectives and interests. To maximize their personal gains, they might negotiate aggressively or competitively. Finally, motivated by competition, people welcome challenges and want to exceed others. They see discussions as an opportunity to gain a competitive advantage and may exalt themselves above others in their pursuit of triumph. Thus, social interactions can influence motivation and consequently affect the outcome of negotiations.

Additionally, an analysis of motivational differentiations, often categorized as prosocial versus pro-self,⁵³⁰ can offer insights into the anticipated outcomes and tactics employed during negotiations. In contrast to their pro-self counterparts, prosocial negotiators tend to present moderate demands and extend greater concessions,⁵³¹ perceive adversaries as fairer and more empathetic,⁵³² manifest heightened trust in counterparts,⁵³³ experience diminished apprehensions

⁵²⁹ David Messick & Charles McClintock, *Motivational Bases of Choice in Experimental Games*, 4 J. EXPERIMENTAL SOCIAL PSYCHOLOGY, 1 (1968).

⁵³⁰ De Dreu, *supra* note 524.

⁵³¹ Carsten De Dreu & Paul van Lange, *The Impacts of Social value Orientations on Negotiator Cognition and Behavior*, 21 PERSONALITY & SOCIAL PSYCHOLOGY BULLETIN, 1178 (1995).

⁵³² *Id.*

⁵³³ Bradley Brooks & Randall Rose, *The Influences of Matched versus Mismatched Negotiation Orientations on Negotiating Processes and Outcomes*, 16 J. MARKETING THEORY & PRACTICE, 199 (2008).

regarding exploitation,⁵³⁴ adopt more integrative and problem-solving methodologies,⁵³⁵ exhibit reduced tendencies toward deception or misrepresentation of intentions and preferences,⁵³⁶ convey elevated contentment with negotiation outcomes,⁵³⁷ and attain better collaborative results, particularly in situations where both negotiating parties demonstrate prosocial conducts compared to scenarios where at least one party adopts a pro-self stance.

4.3.3 Emotion in Negotiation

Emotion is an affective reaction, such as anger, disgust, fear, joy, and sadness, that exists among individual and impact our behavior.⁵³⁸ Research on the effect of emotion in negotiation explains how the affective reaction, such as anger and happiness, changes our behavior, cognition and social interaction. For example, study examined the impact of a negotiator's displays of anger on the other party's willingness to make concessions.⁵³⁹ Also, research is aware of how emotionally charged and deeply personal conversations can be, whether they are with close friends and family members or with professionals in the industry.⁵⁴⁰ It has always been difficult for negotiation research, which has historically focused on rational procedures and controlled environments, to study emotions in their natural context. However, since academics started to challenge the

⁵³⁴ Zhi-Xue Zhang & Yu-Lan Han, *The Effects of Reciprocation Wariness on Negotiation Behavior and Outcomes*, 16 GROUP DECISION & NEGOTIATION, 507 (2007).

⁵³⁵ Ellen Giebels et al., *Interdependence in Negotiation: Effects of Exit Options and Social Motive on Distributive and Integrative Negotiation*, 30 EUR. J. SOCIAL PSYCHOLOGY, 255 (2000).

⁵³⁶ Mara Olekalns & Philip Smith, *Loose with the Truth: Predicting Deception in Negotiation*, 76 J. BUSINESS ETHICS, 225 (2007).

⁵³⁷ Brooks & Rose, *supra* note 533

⁵³⁸ Michel Cabanac, *What is Emotion?*, 60 BEHAVIOURAL PROCESSES, 69 (2002).

⁵³⁹ Mara Olekalns & Daniel Druckman, *With Feeling: How Emotions Shape Negotiation*, in EMOTION IN GROUP DECISION AND NEGOTIATION 33-8 (Bilyana Martinovsky ed., 2015).

⁵⁴⁰ Bruce Barry et al., *I Laughed, I Cried, I Settled: The Role of Emotion in Negotiation*, in THE HANDBOOK OF NEGOTIATION AND CULTURE 71-94 (M. J. Gelfand & J. M. Brett eds., 2004).

omission of emotions from negotiation studies in the early 1990s, there has been a boom of research studying the link between emotion and negotiation.⁵⁴¹

Another aspect of the discussion focuses on how emotions tied to apologies exemplify the effectiveness of apologies in eliciting forgiveness from a psychological standpoint.⁵⁴² Emotional forgiveness involves transitioning from negative feelings towards the transgressor to neutral and positive emotions, leading to kind thoughts and actions. This process helps to reduce stress reactions.⁵⁴³ In the context of negotiation, as Jen Robbennolt has found, apologies are frequently sought or negotiated during settlement discussions, and may thus be an important component of negotiations.⁵⁴⁴ It's worth noting that apologies are occasionally delivered through an attorney representing the culprit rather than directly from the perpetrator. In general, apologies for irresponsible conduct have been shown to improve perceptions of both the offender and the circumstance. According to research, comprehensive apologies, whether initiated by the wounded person or proposed by a mediator, are perceived as having the same impact as spontaneous apologies. However, while apologies offered by an attorney on behalf of the perpetrator help to improve attitudes, they are not as successful as apologies personally voiced by the wrongdoer themselves. Apologies' efficacy is also impacted by the apologizer's motivations and people's overall sentiments about the civil litigation system. These elements influence how apologies are

⁵⁴¹ Leigh Thompson et al., *Some Like it Hot: The Case for the Emotional Negotiator*, in SHARED COGNITION IN ORGANIZATIONS 139-61 (John Levine et al., eds., 1999).

⁵⁴² Kinga Kaleta & Justyna Mróz, *The Effect of Apology on Emotional and Decisional Forgiveness: The Role of Personality*, 168 PERSONALITY & INDIVIDUAL DIFFERENCES, 1 (2021).

⁵⁴³ Everett Worthington Jr. et al., *"Mere" Christian Forgiveness: An Ecumenical Christian Conceptualization of Forgiveness through the Lens of Stress-and-Coping Theory*, 10 RELIGION 44 (2019).

⁵⁴⁴ Jennifer Robbennolt, *The Effects of Negotiated and Delegated Apologies in Settlement Negotiation*, 37 L. & HUMAN BEHAVIOR, 128 (2013).

accepted and their impact on the bargaining process.⁵⁴⁵ Likewise, during negotiations, an apology could serve as a powerful means to alter emotions and influence the outcome.

In the international negotiation, emotion could also become an influential factor. For example, emotion such as anger and sadness could fail a negotiation. It's obvious that choices made under negative emotion might be the result of misunderstandings, unfavorable emotions, and an emotional gap with the other party. This may set off a chain reaction of poor verbal and nonverbal communication, as well as actions that might steer the negotiation in the direction of a difficult or impasse rather than the one where a successful conclusion would have been possible.⁵⁴⁶ Emotion plays an active role in altering individual behavior and influencing the outcome of negotiations.⁵⁴⁷

4.3.4 Social Context in Negotiation

Studies underscore the importance of the negotiation context in shaping the nature and outcome of the negotiation.⁵⁴⁸ Negotiators are not independent actors solely pursuing agreement; instead, their considerations, relationships, power dynamics, constituencies, and networks are crucial factors in every negotiation. Understanding the intricacy of the subjects under discussion is crucial to understanding the social dynamics at work during negotiations. The outcomes and processes of the discussions are significantly informed by the varied degrees of complexity, urgency, and relevance of these concerns. Moreover, the nature of the relationships among negotiators—whether cooperative or competitive—has a significant impact on tactics and overall

⁵⁴⁵ *Id.*

⁵⁴⁶ Francesco Aquilar & Mauro Galluccio, *Cognitive, Emotional, and Communicative Aspects in International Negotiation: Affective Neuroscience Contribution to the General Understanding of the Negotiation Process*, in PSYCHOLOGICAL PROCESSES IN INTERNATIONAL NEGOTIATIONS 43-67 (2008).

⁵⁴⁷ Bilyana Martinovski & Wenji Mao, *Emotion as an Argumentation Engine: Modeling the Role of Emotion in Negotiation*, 18 GROUP DECISION & NEGOTIATION, 235 (2009).

⁵⁴⁸ Leigh Thompson et al., *Social Context in Negotiation: An Information-Processing Perspective*, in NEGOTIATION AS A SOCIAL PROCESS: NEW TRENDS IN THEORY AND RESEARCH 5-36 (R. M. Kramer & D. M. Messick eds., 1995).

negotiation dynamics.⁵⁴⁹ Power dynamics are also quite significant. The relative power of the negotiators, which is influenced such factors as authority, resources, and expertise, largely determines the dynamics of a negotiation. Power disparities lead to asymmetric negotiations, which further affect the negotiating power and potential outcomes.⁵⁵⁰

Additionally, negotiators' networks and constituency have a significant but indirect influence.⁵⁵¹ Understanding these wider connections and interests is crucial for grasping the historical context of the negotiation and its significance. The technological and temporal conditions can impact the dynamics of discussions. Time limits, the speed at which decisions are made, and communication channels all affect negotiations.⁵⁵² Taking into account cultural and gender contexts adds another layer of complexity. Conventions, communication styles, and cultural values all impact expectations and approaches to negotiation.⁵⁵³ Gender dynamics also impact power dynamics, communication styles, and the negotiation process overall.⁵⁵⁴ In conclusion, understanding negotiation requires acknowledging that negotiation itself is a socially embedded process in which a variety of contextual factors affect the methods, behaviors, and outcomes of negotiators.

Negotiation is a prominent topic in psychology, particularly when it encompasses elements like cooperation versus competition and agreement versus disagreement. Cognition, motivation,

⁵⁴⁹ Sinem Acar-Burkay et al., *The Best of Both Worlds? Negotiations between Cooperators and Individualists Provide High Economic and Relational Outcomes*, 29 GROUP DECISION & NEGOTIATION, 491 (2020).

⁵⁵⁰ Peter Kim et al., *Power Dynamics in Negotiation*, 30 THE ACADEMY OF MANAGEMENT REV. 799 (2005).

⁵⁵¹ Anthony Wanis-St. John & Darren Kew, *Civil Society and Peace Negotiations: Confronting Exclusion*, 13 INT'L NEGOTIATION, 11 (2008).

⁵⁵² Alice Stuhlmacher et al., *The Impact of Time Pressure in Negotiation: A Meta-Analysis*, 9 INT'L J. CONFLICT MANAGEMENT, 97 (1998).

⁵⁵³ Kevin Groves et al., *Examining Cultural Intelligence and Cross-Cultural Negotiation Effectiveness*, 39 J. MANAGEMENT EDUCATION, 209 (2014).

⁵⁵⁴ Leonard Karakowsky & Diane Miller, *Negotiator Style and Influence in Multi-Party Negotiations: Exploring the Role of Gender*, 27 LEADERSHIP & ORGANIZATION DEVELOPMENT J., 50 (2006).

emotion, and social context are significant factors that influence the negotiation process, impacting everything from preferences to valuations. Psychological phenomena are notably prevalent throughout the negotiation procedure.

The subsequent section aims to apply the psychology of IEL within the context of the EGA negotiation, focusing on transboundary governance and environmental harm. This chapter presents alternative perspectives that explain the EGA negotiation. While rational choice theory may offer some insights into state actions, it falls short in providing a comprehensive understanding of the valuation process. Factors such as preferences, information reception, and emotional perceptions are areas not addressed by rational choice theory. The chapter argues that a more thorough comprehension of the valuation process can be attained by integrating psychological approaches, specifically within the psychology of IEL discussed systematically in this chapter.

4.3.5 Reviewing the EGA Negotiation from the Psychology of IEL

The Psychology of Transboundary Governance

This dissertation has suggested that certain distinctions within the framework of international law hold substantial psychological and methodological significance and has focused on such three key characteristics: voluntariness, fragmentation, and political borders, each of which plays a crucial role in shaping the landscape of international law. These characteristics are not only recognized but also deemed psychologically significant, with potential implications for environmental law concerning valuation processes, resource management, and decision-making protocols.

In the subsequent section, a detailed exploration of these three features will be provided, highlighting their psychological significance and implications within the realm of international

environmental law. This research posits that the transboundary nature inherent in the governance of transboundary environmental harm may result in the underestimation of its consequences.

Voluntariness

Voluntariness, within the context of international law, encompasses a spectrum ranging from active compliance to subjective consent derived from states' willingness.⁵⁵⁵ This aspect reflects nuanced dynamics of international legal relations and the varying degrees of engagement and commitment among state actors.⁵⁵⁶ The psychological dimension of voluntariness within international law provides valuable insight into the valuation process during EGA negotiations, enhancing our understanding of the motivations guiding state behavior. Valuation in treaty formation encompasses cognitive factors such as preferences and biases, which can lead to disagreements or challenges in reaching consensus on a treaty. For example, the EU objected to the environmental goods agreement that included bicycles, while China's concerns about anti-dumping measures prevented the EU from classifying bicycles as environmental products.⁵⁵⁷ This phenomenon could be better understood by psychological explanation—endowment effect and present bias.

The fact that EU prioritized economic market access over environmental concern could be the subtle impact from endowment effect. A psychological phenomenon known as the endowment effect occurs when people esteem possessions more highly simply because they own them. This effect suggests that people place a higher value on possessions than they would not if they were unknown.⁵⁵⁸ Asset values, negotiating stances, and buying and selling patterns are all subject to

⁵⁵⁵ Rowell et al., *supra* note 33.

⁵⁵⁶ *Id.*

⁵⁵⁷ de Melo & Solleder, *supra* note 478, at 4-5.

⁵⁵⁸ Carey Morewedge & Colleen Giblin, *Explanation of the Endowment Effect: An Integrative Review*, 19 TRADES IN COGNITIVE SCIENCES, 339 (2015).

this bias. For instance, people may be reluctant to sell an item they own, even if the sale price is higher than their initial paying price, due to their emotional attachment to and sense of value in it.⁵⁵⁹ In the context of the EU bicycle market, EU may desire to protect the current bicycle industry from Chinese bicycle products and neglect the possible environmental contribution of bicycle in the carbon-deduction. In the context of the EU bicycle market, there may be a desire to safeguard the existing bicycle industry against competition from Chinese bicycle products. This protectionist stance might be motivated by a variety of factors, including the need to protect domestic employment, retain market share for local manufacturers, and maintain the quality standards associated with bicycles made in the EU. In all, psychologically, EU emphasizes much attention on the current economic interest. However, by focusing primarily on maintaining the local industry, there may be a propensity to overlook or dismiss the larger environmental advantages linked with bicycles. Bicycles are widely acknowledged as a sustainable means of transportation that considerably reduces carbon emissions and promotes environmental conservation. They contribute to lower greenhouse gas emissions, less traffic congestion, and better lifestyles by prompting more physical exercise. Nonetheless, these facts are covered by the endowment puzzle.

Another similar explanatory insight for EU's economic prioritization can be found from present bias, which occurs when people are more concerned with what will happen now than with what will happen later.⁵⁶⁰ Decisions based on this cognitive bias may jeopardize long-term goals in favor of more immediate advantages and benefits. This bias presents itself in a variety of aspects of life, including financial and health decisions, procrastination, and personal objective establishment. If someone is more likely to be influenced by the bias, they may postpone dealing

⁵⁵⁹ Keith Marzilli Ericson & Andreas Fuster, *The Endowment Effect*, 6 ANNUAL REV. ECONOMIC, 555 (2014).

⁵⁶⁰ Matthew Jackson & Leeat Yariv, *Present Bias and Collective Dynamic Choice in the Lab*, 104 AM. ECON. REV. 4184 (2014).

with important tasks until later. For example, they might consume/resort to consuming unhealthy food because it makes them feel good right now, even if these behaviors may harm their health and productivity in the long term.⁵⁶¹ In the context of the EU's prioritization of the bicycle market over environmental concern, present bias offers some helpful insights.

To start, the EU's primary focus might be on immediate financial gains from sustaining the bicycle industry, potentially overlooking longer-term considerations. These immediate gains could include job preservation market share, or a competitive edge in the short term. This prioritization reflects a preference for short-term economic advantages, where the benefits of industry protection outweigh the concerns about future impacts. Additionally, the EU may lean towards policies that offer quick and visible outcomes, even if they lack long-term sustainability. Investments in sustainable transportation infrastructure or the promotion of environmentally friendly practices within the bicycle industry might be sidelined due to this bias towards immediate results. These psychological observations could serve as additional explanations supporting rational choice theory.

The agency psychology could also supplement the economic prioritization consequence of the EGA negotiation. The increasing global interconnectedness and interdependence highlight the importance of collaborative effectiveness in addressing personal and societal issues. Personal actions are part of a larger framework shaped by social and structural elements. Individuals both impact and are impacted by societal systems in an intersecting network of influences.⁵⁶² In this intricate environment, an individual's judgment can be influenced by both self-evaluation and societal expectations. The societal expectation could stem from vertically domestic society or

⁵⁶¹ Ted O'Donoghue & Matthew Rabin, *Present Bias: Lessons Learned and to be Learned*, 105 AM. ECONOMIC. REV., 273 (2015).

⁵⁶² Albert Bandura, *Social Cognitive Theory* "An Agentic Perspective", 52 ANNUAL REV. OF PSYCHOLOGY, 1 (2001).

horizontally international community. The decisions made by an individual may not always align with the best interest or the prevailing societal consensus when making determinations in international law.

The societal context could be best exemplified by the absence of developing countries. Negotiations were hampered by limited involvement as many developing nations, with the exception of China, Costa Rica, and later Turkey, chose not to participate. One reason for their non-participation was the perception that wealthier countries involved in the negotiations had less to lose.⁵⁶³ CSIS study indicates that developing countries joined the EGA for two reasons: first, they needed to import environmental products to fulfill local demand, and second, they wanted to enter the domestic market for eco-friendly products. The positive association between growing consumer demand and expectations for environmentally friendly items has led to the emergence of a market for these products. Because their industries are smaller and their environmental regulations are less stringent, developing countries might not have felt as much pressure to attend the discussions. Despite having some of the highest tariffs on environmental goods, emerging nations have the most potential for substantial growth in this sector. These are economic discussions that presume that developing countries are rational actors aiming to maximize their self-interests.

However, it is undeniable that psychological factors such as society norm could also play an important but subtle role in the concluding process. State agents of developing countries bear domestic expectation, together with their self-interest and peer pressure from its international community colleagues. These intricate connections could challenge rational choice theory's thesis,

⁵⁶³ William Alan Reinsch et al., *Environmental Goods Agreement: A New Frontier or an Old Stalemate?*, CSIS, Oct. 28, 2021, at <https://www.csis.org/analysis/environmental-goods-agreement-new-frontier-or-old-stalemate>.

which focuses on self-interest as a primary orientation. How should interests and goals be best secured during negotiation? This common question could be understood better by a psychological perspective, with the social theory on collective agency being useful to understand the behavior.

The significance of individuals' responsibilities in influencing group outcomes through their interactions and behaviors is a recurring subject in theories of collective agency. These theories address group dynamics, leadership philosophies, communication methods, norms and values, and the distribution of power and resources within the group.⁵⁶⁴ For instance, groups that share the same objective and principle are more likely to work well together to achieve their goals through structured collaboration; successful collective agency depends on understanding how decisions are made and resources are allocated within the group. In negotiations, developing countries may have a closer relation than we may think. Their shared objectives lead to their persistent conduct, since they have deep, ingrained beliefs about each other. This could explain their standpoint and economic prioritization. The sense of belonging to a group also impacts a state's perception and voluntariness in the negotiating process.

Fragmentation

As discussed in Chapter 2, the inherent nature of international law as decentralized contributes to its fragmented structure, necessitating ongoing interactions and negotiations among sovereign states.⁵⁶⁵ This fragmentation underscores the complexity and multiplicity of legal frameworks and norms that govern international relations.

⁵⁶⁴ Sara Rachel Chant, *Collective Action and Agency*, in THE ROUTLEDGE HANDBOOK OF COLLECTIVE INTENTIONALITY, 13-23 (Marija Jankovic & Kirk Ludwig eds., 2017).

⁵⁶⁵ Eyal Benvenisti & George Downs, *The Empire's New Clothes: Political Economy and the Fragmentation of International Law*, 60 STAN. L. REV. 595 (2007).

Following the prior discussion on the psychology of transboundary governance, the fragmentation of international environmental goods mechanism could trigger potential psychological reaction to the EGA negotiation. The concept of international law fragmentation describes the coexistence of international institutions and laws and their equal footing, without one dominating over the other.⁵⁶⁶ Similar pattern also applies to international trade and environmental law. Consider the historical development of EGA. Prior to the WTO EGA negotiation, APEC and OECD already had regulations on environmental goods. The OECD defined the concept of environmental goods in 1999 as products or technologies that could contribute to environmental protection by measuring, preventing, limiting, or addressing environmental damage done to water, air, soil, waste, noise, and ecosystems. This included cleaner technologies, products, and services that reduced environmental risks, pollution, and resource use. The OECD's definition encompassed a wide range of products that met these criteria, all of which were considered environmental goods.⁵⁶⁷ In 2012, the APEC included 54 products in its environmental goods list in Annex C of its Leader's Declaration. This declaration, jointly announced by all the participants after the conference, highlighted the role of environmental goods in promoting green growth and environmental protection. APEC emphasized that reducing tariffs on such goods could lower costs, promote trade liberalization, and encourage the adoption of eco-friendly products. This strategy, viewed as mutually beneficial, is considered an efficient method to strengthen global environmental initiatives while simultaneously stimulating international trade.⁵⁶⁸

⁵⁶⁶ U.N.G.A., *supra* note 28.

⁵⁶⁷ Organisation for Economic Co-operation and Development (OECD) Statistical Office of the European Communities, *The Environmental Goods and Services Industry Manual for Data Collection and Analysis* (1999), at https://unstats.un.org/unsd/envaccounting/ceea/archive/EPEA/EnvIndustry_Manual_for_data_collection.PDF.

⁵⁶⁸ Asia-Pacific Economic Cooperation (APEC), *2012 Leader's Declaration*, https://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm; APEC List of Environmental Goods, https://www.apec.org/meeting-papers/leaders-declarations/2012/2012_aelm/2012_aelm_annexc.

However, such “decentralization” phenomenon could also lead to the denial of WTO EGA negotiation given individuals’ subjective psychological expectation to centralization. Group individuals expect a centralized order when facing uncertainties. The study's findings suggest that groups coping with varied degrees of uncertainty and risk have similar communication practices in the early stages of the investigation.⁵⁶⁹ The study's findings revealed that centralized communication systems were more prevalent in organizations with high uncertainty and low danger. Uncertainty in organizational research stems from factors such as the activity complexity, the velocity of environmental change, and the amount of environmental knowledge. Various theoretical frameworks emphasize different types of uncertainty, but they all recognize the value of inaccurate information at workplace and in nature.⁵⁷⁰ Scholars of international law exploring the subject of fragmentation may find this discovery helpful. In the realm of international law, a lack of information might hasten the development of a framework and have an influence on the fragmentation process, resulting in the establishment of a centralized environment.

Nonetheless, in the world of environmental goods mechanism, prior structure from both OECD and APEC already shed light on this opaque area. Participants around the world in both institutions further address this issue in other bilateral or regional trade agreements, with the United States-Mexico-Canada Agreement (USMCA) being the most relevant example for this development. In addition to the clauses mentioned above, the USMCA contains a number of important environmental protections. It strengthens the connection between environmental preservation and economic activity by establishing the assumption that, until demonstrated otherwise, environmental challenges harm investment and trade. In addition, the treaty mandates

⁵⁶⁹ Linda Argote et al., *To Centralize or Not to Centralize: The Effects of Uncertainty and Threat on Group Structure and Performance*, 43 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES, 58, 59 (1989).

⁵⁷⁰ *Id.*

actions to stop the illicit trade of plants and animals in order to conserve biodiversity and lessen the trafficking of wildlife. To encourage sustainable fishing methods and protect marine ecosystems, it outlaws the most harmful fisheries subsidies. In addition, the USMCA pledges to demonstrate a commitment to environmental stewardship by promoting conservation initiatives, managing invasive species, monitoring forest and fishery operations, and using biodiversity in a sustainable way. It also aims to address issues related to marine debris and air quality, focusing on pollution and environmental degradation. Additionally, by fostering the interchange of ecologically friendly goods and services, the agreement advances the adoption of environmentally conscious practices and technologies throughout North America.⁵⁷¹

Simply put, how the current mechanism for categorizing environmental products could impede the WTO EGA negotiations can be studied through a psychological standpoint. This is due to the fact that the stability and centralized structure that have been established by existing institutions and free trade agreements may be disrupted by the negotiations within the WTO. In addition to the motivation to achieve economic gains, the inclination to preserve this centralized arrangement may diminish negotiators' motivation to establish a novel legal framework.

In addition, the massive legal framework concerning international trade and environmental goods could lead to the decision paralysis and halt the negotiation procedure. A certain psychological behavior might be triggered by the excessive number of treaties.⁵⁷² In other words, the abundance of potential alternatives can overwhelm our cognitive capacities.⁵⁷³ For instance, the United States must manage multiple agreements such as USMCA, OECD, and APEC, not to

⁵⁷¹ Congressional Research Service, *Environmental Provisions in Free Trade Agreements (FTAs)*, Sep. 1, 2023, at <https://crsreports.congress.gov/product/pdf/IF/IF10166>.

⁵⁷² Benjamin Scheibehenne et al., *Can There Ever be Too Many Options? A Meta-analytic Review of Choice Overload*, 37 J. CONSUMER RESEARCH 409, 410 (2010).

⁵⁷³ David Glen Mick et al., *Choose, Choose, Choose, Choose, Choose, Choose, Choose, Choose: Emerging and Prospective Research on the Deleterious Effects of Living in Consumer Hyperchoice*, 52 J. BUSINESS ETHICS 207 (2004).

mention the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and international agreements like CITES. Similarly, the European Union faces a comparable scenario, with the addition of the EU-Korea FTA and internal treaties, regulations, and directives further adding to the cognitive load. Negotiators from Taiwan, China, Turkey, and others face similar challenges, potentially overwhelming their cognitive capacities and contributing to delays in reaching negotiation conclusions. This slowdown could also be a rationale for states prioritizing economic considerations, which may ultimately hinder successful negotiations.

Political Borders

International law governing cross-border matters introduces the concept of political borders as psychologically distinctive entities for states.⁵⁷⁴ These borders serve as symbolic and practical demarcations, influencing state behaviors and decision-making processes in international contexts.⁵⁷⁵ Understanding psychological nuances associated with political borders is integral to comprehending the complexity of international legal frameworks and their impact on state actions and interactions.

In the context of the EGA agreement, political borders may generate identity that could bring in further particular psychological reaction to the negotiation. Humans' creation of borders contributes to societal divisions and influences the formation of beliefs that have a profound impact on individuals' sense of identity.⁵⁷⁶ The idea of a boundary acts as a mediator between individuals and their surroundings, disrupting the sequence of events and molding our actions.

⁵⁷⁴ Rowell et al., *supra* note 33.

⁵⁷⁵ *Id.*

⁵⁷⁶ Brambilla, *supra* note 266.

The identity created by political border could further impact individuals' perception of transboundary harms. Individuals often view disasters occurring beyond political borders as less severe.⁵⁷⁷ This factor might contribute to the failure of the EGA negotiation, as negotiators may perceive transboundary environmental harm as less severe than anticipated, leading them to prioritize economic interests. The research suggests that the devaluation of environmental concerns may be linked to the presence of state borders. Individuals often perceive international borders as mere physical impediments, leading them to underestimate the gravity of disasters originating from neighboring countries. Conversely, they tend to downplay the severity of disasters within their own state, even if they are equally significant. The study's analysis, based on the three empirical studies, reveals that people demonstrate this bias regarding borders when they perceive states as distinct superordinate categories, with incidents occurring within state boundaries more frequently than beyond them. There is a common belief that political borders act as barriers that encompass environmental issues, contributing to this perception.⁵⁷⁸

In the EGA, which seeks to promote environmentally friendly products for environmental protection, state representatives may underestimate the seriousness of transboundary environmental harm and prioritize economic interests instead. The bicycle dispute between the EU and China is a prime example of this scenario, where the EU's preferences or biases towards economic interests ultimately resulted in the failure to reach a settlement.

Last but not least, groupthink bias may polarize the motivation and incentives of states and fail the EGA negotiation. The political border creates the group identity and further impacts individuals' perception and preference. "Groupthink" is a psychological occurrence where a

⁵⁷⁷ Mishra & Mishra, *supra* note 269.

⁵⁷⁸ *Id.*

group's desire for cohesion and conformity leads to irrational or flawed decision-making processes.⁵⁷⁹ The decision-making process in the EU exemplifies the inclination toward groupthink that is common among regional international entities. Member states of the EU show different interests and ambitions, which make it difficult to obtain a policy unanimity. There is significant pressure on the EU countries to collaborate and minimize differences, particularly during key policy debates. The emphasis on unity and consensus-building might lead to groupthink bias. For example, in the aftermath of the 2008 financial crisis, the EU implemented budget cuts. The decision to implement financial austerity was motivated by a consensus-oriented strategy that failed to sufficiently evaluate opposing viewpoints or alternative policy alternatives.⁵⁸⁰ The EGA negotiation is comparable; throughout the negotiating process, the EU must aim for a consensus outcome among the majority of its members. To accomplish this, a groupthink process may be required, which would result in the prioritizing of the economic worth of bicycles over global environmental concern. The psychological perspective can enhance our understanding of rational choice theory, offering additional insights even as individuals seek to uphold the principles of rational choice. Psychological observations serve as a valuable complement, providing more nuanced understanding in a cooperative way.

Environmental Impact from Psychological Perspective

Recent academic studies have delved into the psychological dimensions of environmental legislation, focusing on both debiasing techniques and the underlying psychological behind environmental judgments.

⁵⁷⁹ Clark McCauley, *The Nature of Social Influence in Groupthink: Compliance and Internalization*, 57 J. PERSONALITY & SOCIAL PSYCHOLOGY, 250 (1989).

⁵⁸⁰ European Parliament, *A Decade on from the Crisis, Main Responses and Remaining Challenges*, at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642253/EPRS_BRI%282019%29642253_EN.pdf.

Arden Rowell and Kenworthy Bilz, in particular, have conducted a thorough examination of the psychological aspects of environmental law, identifying three essential features: non-human traits, diffusion, and complexity. They argue that environmental harm is intricate, far-reaching, and involves interactions with non-human elements,⁵⁸¹ leading to different psychological reactions that are reflected in environmental legal frameworks. Eva van der Zee, for instance, has highlighted the importance of domestic laws as instruments for mitigating biases in the assessment of environmental harm, highlighting the influence of motivational biases, whether both conscious and unconscious, on judgment.⁵⁸² She highlights flaws in existing EU and Dutch rules and pushes for the integration of debiasing measures into (supra)national environmental evaluation laws.⁵⁸³ Ongoing research into the intersection of law and psychology, and environmental impact is being conducted, and this section will build upon Rowell and Bilz's exploration of the psychology of environmental law.

This section builds on Rowell and Bilz's findings by offering a thorough analysis of these psychological aspects and how they affect the EGA negotiation process, which relates to decision-making, resource management, and valuation process.

Diffusion associated with transboundary environmental harm can lead to an underestimation of environmental issues. People often rely on the have availability heuristic and therefore perceive familiar items as abundant when assessing their frequency.⁵⁸⁴ Studies indicate that environmental threats and occurrences viewed as less obvious, immediate, and vivid are more likely to be underestimated in terms of both likelihood and severity.⁵⁸⁵ Transboundary

⁵⁸¹ Rowell & Bilz, *supra* note 29, pp. 35-45.

⁵⁸² Eva van der Zee, *Strengthening Environmental Decision Making through Legislation: Insights from Cognitive Science and Behavioural Economics*, 12 TRANSNATIONAL ENVTL L., 295 (2023).

⁵⁸³ *Id.*

⁵⁸⁴ Tversky & Kahneman, *supra* note 178; Paul Slovic, *The Perception of Risk*, 236 SCIENCE, 280 (1987).

⁵⁸⁵ Tversky & Kahneman, *id.*; Kuran & Sunstein, *supra* note 179; Weber, *surpa* note 179; Wiener, *supra* note 179.

environmental harm could increase the availability heuristic due to the challenges in perceiving environmental diffusion across time and space, leading to a situation where the environmental impact is underestimated. In the EGA, for example, negotiating states could undervalue the benefits of environmental goods (concerns) with respect to its own economic interests.

First, disagreement over the list of environmental goods in EGA revealed a clear preference for economic self-interest. During the latest negotiation round, China submitted a new environmental goods list that caught the other parties off guard. Notably, gas turbines, electric motors, gas controls, and polysilicon solar panels had all been removed from the list. These omissions contributed to the failure of negotiations because the changes deviated from subjective expectations.⁵⁸⁶ During the negotiations, only seven products were common across the four submitted lists.⁵⁸⁷ The disparity demonstrates a higher priority for self-interest and a lower priority for the environment protection.

The inclusion of solar panels could potentially explain part of the breakdown in negotiations. Solar panels are regarded to be eco-friendly because they can help combat climate change and supply adequate energy for human use. The amount of solar energy that reaches the Earth's surface is approximately 86,000 TW (terawatts), and worldwide energy demand is approximately 17.5 TW.⁵⁸⁸ Another research suggests that solar energy could provide 30% to 50% of the world's electricity supply.⁵⁸⁹ These studies emphasize the significance of solar panels in the global climate change battle. Nonetheless, leaders of countries regularly underperceive these benefits and prioritize national economic interests.

⁵⁸⁶ Reinsch et al., *supra* note 563.

⁵⁸⁷ de Melo & Solleder, *supra* note 478, at 4-5.

⁵⁸⁸ Aixue Hu et al., *Impact of Solar Panels on Global Climate*, 6 NATURE CLIMATE CHANGE, 290 (2016)

⁵⁸⁹ Felix Creutzig et al., *The Underestimated Potential of Solar Energy to Mitigate Climate Change*, 2 NATURE ENERGY (2017).

Second, parties in the negotiation have prioritized economic interests in the issue of the free-rider clause; specifically, China and the US cannot reach agreement on the free-rider baseline.⁵⁹⁰ This issue has been characterized as a market failure since non-contributors receive the same benefits as contributors via specific mechanisms.⁵⁹¹ To avoid future failures over such mechanisms, intervention actions are required. In the negotiations, the baseline for preventing the free rider has oscillated between 70% and 90% of the global trade amount from participants. China is concerned that non-participants may benefit from EGA tariff concessions. Once a critical mass is reached, tariff reductions would be applied to all 162 WTO members. China has suggested an EGA snapback provision that would trigger a withdrawal mechanism if 70% (any threshold) of global commerce is covered by the agreement or if a large non-participant, e.g., India, reaches 3%. When the snapback mechanism is engaged, any EGA partner may rescind tariff reductions.⁵⁹² However, the participating parties cannot agree on a particular number to satisfy everyone.

Preventing situations such as the free-rider contention is important for the common good. Moreover, a withdrawal of extensive tariff concessions acts against the stated goals of the EGA to safeguard both economic and environmental interests. When such a withdrawal is initiated, neither economic nor environmental benefits are taken into account. Participating nations cannot enjoy tariff concessions on environmental goods, economic development decreases, and the cost of environmental goods increases. The proposed withdrawal mechanism does not strengthen any of the shared objectives, yet China's proposal, with its focus on tariff concessions, illustrated economic prioritization over environmental protection.

⁵⁹⁰ Reinsch et al., *supra* note 563.

⁵⁹¹ James E. Krier, *The Tragedy of the Commons, Part Two*, (1992) 15 HARV. J. L. & PUBLIC POL'Y, 325 (1992).

⁵⁹² Bryce Baschuk, *Trade Negotiators Pan Chinese EGA Snapback Proposal*, BLOOMBERG LAW (2016), at https://www.bloomberglaw.com/bloomberglawnews/international-trade/X2TG734O000000?bna_news_filter=international-trade#jcite.

Third, parties agreed on a tariff phaseout measure but not on the time limitation and goods quantity.⁵⁹³ The diffusion of transboundary environmental harm could obscure countries' perception and valuation when dealing with environmental protection. Overlooking the severity of transboundary environmental harm may lead countries to postpone approval of the EGA. For instance, representativeness heuristics can lead to cognitive errors. One of the most prevalent bias is "base rate neglect," occurring when perceivers fail to account for underlying distribution when evaluating its current likelihood. The more distant the baseline probability, the more distorted the representativeness heuristic becomes. Environmental issues are frequently characterized by literal "diffusion" rather than remoteness: pollutants are frequently small or diluted, yet dangerous. People prefer to dismiss their effect or importance in favor of more immediately evident occurrences because of their dispersed, unseen nature. Following this pattern, people in leadership positions ignored transboundary environmental harm during the EGA negotiations and failed to make urgent moves to improve the status quo.

In addition, the EU took issue with the inclusion of bicycles in the environmental goods agreement,⁵⁹⁴ going against EGA environmental objectives by excluding bicycles from the list of environmental goods. Similarly, the lists of environmental goods submitted by other countries reflected their economic interests for the foreseeable future. While The CV approach may be useful in explaining disparities in environmental valuation, it is incapable of addressing the systematic disregard for environmental issues.⁵⁹⁵ This methodical neglect may result from misperceptions about transboundary harm. Examining the degree to which countries disregard environmental concerns could further explain the phenomenon.

⁵⁹³ Reinsch et al., *supra* note 563.

⁵⁹⁴ *Id.*

⁵⁹⁵ McFadden & Leonard, *supra* note 489

The EGA aimed to find a balance between economic and environmental interests simultaneously, reflecting states' belief in a mutually beneficial agreement. However, the breakdown in negotiations revealed a different reality. The prioritization of economic interests over environmental concerns, exemplified by countries like China and the EU, stalled the progress on the EGA, contradicting the initially agreed normative goal. Rational choice theory offers only limited insights into state behavior, while psychological analysis could provide a deeper understanding of states' preferences and perceptions, influencing their actions during negotiations. This chapter contends that the nature of transboundary environmental harm complicates states' preferences and perceptions, leading to the undervaluation of environmental concerns.

The diffusion and complexity of global climate change can illustrate this undervaluation. Climate change spreads across time and space, affecting our perception psychologically. The consequences of climate change unfold over decades; for instance, the effects of greenhouse gases from the Industrial Revolution continue to manifest today. Climate change impacts regions worldwide, from the Arctic to Pacific islands. This diffusion can negatively impact our perception of risk and compromise our inherent ability to tackle such issues effectively.⁵⁹⁶

The complex nature of climate change also influences our psychological response. The complexity of climate change arises from a variety of interconnected factors, including human activities like industry, transportation, and deforestation causing greenhouse gas emissions, as well as natural occurrences like volcanic eruptions and solar radiation. Moreover, climate change exacerbates other environmental challenges such as biodiversity loss, water scarcity, and land

⁵⁹⁶ Rowell & Bilz, *supra* note 29, pp. 219-30.

degradation. This complexity can lead to patterned thinking or simplification heuristics, causing us to underestimate current risks and diminish our capacity to address these issues adequately.⁵⁹⁷

For instance, templating behavior⁵⁹⁸ and availability heuristic bias⁵⁹⁹ might result in further misunderstandings of transboundary environmental harm, thereby impairing the legitimacy of environmental policies. The cognitive process of discovery templating enables animals to reduce complicated items to simple templates. When this method is successful, locating templates helps us immediately reflect or categorize a few core characteristics and reduce them to their most fundamental elements. In the case of the EGA, attributing environmental protections to tariff concessions may result in the oversimplification of transboundary impact on the basis of tariffs alone. Consequently, individuals may misinterpret the evaluation of tariffs and environmental protections; namely, they may focus primarily on tariff concessions and disregard environmental concerns.

The present study proposes that the psychology of IEL could provide a supplementary explanation for a long-debated puzzle. The EU was unwilling to list bicycles as environmental goods due to the issue of anti-dumping with China. After an investigation, the EU imposed a 30.6% anti-dumping tax against China starting in 1993 and increased it to 48.5% in 2015 to protect the EU bicycle industry.⁶⁰⁰ Therefore, listing bicycles as environmental goods in the EGA will lead to a cancellation of the anti-dumping duty. The EU's concern over bicycles brought the conflict between environmental and trade interests to the WTO stage. It is yet another example of how economic values are prioritized, given that environmental interests were minimized. This could be

⁵⁹⁷ *Id.* pp. 230-60.

⁵⁹⁸ Mattson, *supra* note 202.

⁵⁹⁹ Valeries Folkes, *The Availability Heuristics and Perceived Risk*, 15 J. CONSUMER RESEARCH, 13 (1988).

⁶⁰⁰ Philip Blenkinsop, *EU Extends Tariffs on Chinese Bicycles, Fearing Import Flood*, REUTERS, Aug. 29, 2019, at <https://www.reuters.com/article/idUSKCN1VJ1M3/>.

the consequence of the psychology of environmental impact, given the diffusion and complexity of transboundary environmental harm that leads to the undervaluation of environmental damages.

This chapter utilizes a psychological perspective of IEL to examine potential justifications for the prioritization of economic interests by governments, namely the undervaluation of transboundary environmental harm. Due to diffusion, complexity, and responses to non-human variables, individuals are more likely to disregard transboundary harm, a tendency that increases the likelihood of misperceptions. These types of psychological missteps among decision makers are particularly detrimental when they attempt to achieve a balance between conflicting interests, as seen in the case with the EGA. The parties attempted to find a compromise between economic interests and environmental concerns, but the nature of transboundary environmental harm led to a serious underestimation of important factors. By emphasizing their own economic self-interests, the participating countries created a shift in the trade-interest balance.

The distortion caused by transboundary environmental harm alters the value placed on environmental preservation and disrupts the “win-win” structure of the EGA. However, employing a psychological strategy can offer an alternate explanation for state behaviors in this context. States’ biases could potentially sway the outcome of the EGA negotiation. Even when countries intend to prioritize environmental protection, misconceptions associated with transboundary environmental harm can still influence how the environment is valued and managed. This research sheds light on a previously obscure topic, and its introduction of the unique psychological response to transboundary environmental harm could serve as a useful reference.

4.4 CONCLUSION

The psychology of IEL provides a comprehensive framework that expands rational choice theory, enabling a deeper exploration of the intricacy of state actions in governing transboundary environmental harm. This viewpoint acknowledges a multitude of relevant elements, such as voluntariness, fragmentation, political borders, diffusion, complexity, and non-human object interactions. These elements collectively influence how governments perceive and respond to transboundary environmental harm, influencing their decision-making processes in IEL.

The failure of the WTO EGA agreement highlights the difficulties faced when economic interests overshadow environmental considerations. This disparity emphasizes the significance of incorporating psychological insights into our comprehension of state behavior, particularly in negotiation scenarios where competing interests frequently arise. While rational choice theory offers fundamental insights, psychological observations add complexity by considering cognitive biases, mental motivations, emotional reactions, and social dynamics.

Traditional rational choice theory offers an understanding of state behavior but falls short in explaining important factors in negotiations such as cognition, motivation, emotion, and social context. These subtle yet pivotal aspects are key in negotiations but are often overlooked by rational choice theory. Psychological analysis bridges this gap by providing empirical insights and addressing nuances that rational choice theory might miss. Additionally, psychology helps illuminate the rationale behind state behavior when combined with these viewpoints.

The present research aims to bridge the gap between rational choice theory and psychological perspectives on IEL and negotiating processes. By examining how psychological aspects interact with classic theories like rational choice theory, we can gain a better understanding

of state preferences, perceptions, and decision-making dynamics in environmental negotiations. This integrated approach enhances our ability to study and comprehend state behavior, leading to more informed and effective strategies for resolving transboundary environmental concerns at the international level.

In the upcoming chapter, this research will delve deeper into the psychological analysis of Taiwan's involvement in IEL. Specifically, this chapter will explore the question of why Taiwan actively seeks engagement in the international legal sphere despite the associated costs. Chapter 6 aims to apply a psychological perspective to understand Taiwan's motivations, with an aim to provide valuable insights into Taiwan's state entity in relation to international law.

CHAPTER 5. THE PSYCHOLOGY OF COMPLIANCE: THE CASE OF TAIWAN IN INTERNATIONAL CLIMATE COMPLIANCE

Taiwan's compliance with international law presents a puzzle for international law scholars. As the Republic of China, Taiwan was an original founding member of the United Nations in 1945. However, in 1971, Taiwan lost its representation in the United Nations due to United Nations General Assembly Resolution 2758.⁶⁰¹ Resolution 2758 effectively stripped Taiwan of its recognition as the official representative government for China, relegating Taiwan to the status of a contested territory in the eyes of international law. This status has continued up to the present time. However, despite this unique circumstance, Taiwan has continued efforts to comply with international law.

The international legal compliance of Taiwan is especially striking. Given that Taiwan is not widely recognized as a state, it is not formally a party to most international agreements. Yet, Taiwan has repeatedly invested substantial resources in complying with international agreements to which it is not formally a party. Consider how in 2009, to comply with international human rights agreements, Taiwan passed multiple domestic laws, including the Act to Implement the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social, and Cultural Rights (ICESCR). Similarly, Taiwan has committed to implementing the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement through the passage of the "Greenhouse Gas Reduction and Management Act."

⁶⁰¹ UN GA Res. 2758 (1971).

Taiwan does not belong to any of these agreements but continues to comply with them. Why does Taiwan undertake such costly compliance measures despite not being a contracting party?

International law scholars typically explain state compliance with international law through rational choice frameworks, positing that states primarily act to maximize their economic benefits. For example, one dominant argument has been that states enter into international agreements at least in part because of the benefits of reciprocity. Indeed, reciprocity is sometimes described as a crucial building block of international law.⁶⁰² Yet, Taiwan's non-party status seems to exclude it from many, if not all, reciprocity-based benefits, even though it bears the implementation costs just like any other state. Thus, rational choice framework fails to fully elucidate why Taiwan, despite not being a contracting party, willingly incurs the costs of compliance with international law. If this behavior does not serve to maximize Taiwan's economic benefits, this behavior cannot be explained by rational choice theory, posing puzzles to international law scholars. This chapter suggests that the answer to the puzzle of Taiwanese non-reciprocal compliance might be better explored through the lens of law and psychology.

By incorporating the psychological method into Taiwan's climate compliance, scholars gain insight into the various variables that can motivate a state to take action, beyond only economic interests. Psychological observation, particularly in the areas of cognition, motivation, emotion, and social context, can be influential variables that prompt a state to take action under IEL. Furthermore, psychological research addresses the deficiency left by rational choice theory, which mostly stresses economic interests. Psychological observation aids in understanding the

⁶⁰² See Bruno Stimm, *Reciprocity*, in MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW (Rudiger Wolfrum ed., 2008), at <https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law9780199231690-e1461#law-9780199231690-e1461-div1-4>.

behavior of a state, elucidating its underlying motives and cognitive processes that may lead to international legal consequences.

This chapter applies the psychology of international environmental law (IEL) to Taiwan's compliance with UNFCCC, suggesting that Taiwan's costly involvement can be better explained and understood through psychological insights. Exploring the nexus between psychology and IEL can offer another viewpoint of Taiwan's international compliance, providing supplemental explanations and uncovering overlooked aspects. Examples of irrational or seemingly irrational actions in Taiwan's compliance with the international community can be examined through a psychological lens. Further implications drawn from this study can be employed as precedent for future international legal compliance research.

This chapter contains four parts. *First*, the chapter examines Taiwan's compliance with international law and IEL, providing background context and offering further psychological explanations for compliance. This section analyzes Taiwan's international legal compliance and highlights psychological implication from official statements. This research argues that the record of the Taiwanese governmental document reflects a significant degree of psychological concern over the compliance with international law. The *second* part reviews the conventional and current state of the compliance theory in international law and IEL and suggests that another supplementary viewpoint from psychology can broaden the scope of analysis for scholars' better exploration. This research proposes that applying a psychological lens into IEL could reveal blind spots that have long been neglected by international legal scholars. In the *third* section, this section applies the framework developed in Chapter 3 for analyzing law and psychology within IEL. This research anticipates that the insights gained from analyzing Taiwan's experience through a psychological lens on Taiwan could inform further research on the compliance of non-state actors

in IEL. Lastly, the *fourth* section, concludes the psychological observation on Taiwan's voluntary compliance in UNFCCC.

5.1 TAIWAN'S UNILATERAL COMPLIANCE IN INTERNATIONAL LAW

Taiwan has faced resistance in international participation in both political and legal forums. Taiwan today is often characterized as a de facto state, possessing its own population, territory, government, and ability to engage in international affairs.⁶⁰³ However, since Mao Zedong's Communist forces claimed victory in 1949, the People's Republic of China (PRC) has asserted sovereignty over Taiwan. In 2005, a Chinese law was enacted, asserting China's right to use force against Taiwan, officially recognized as the Republic of China (ROC), should it attempt to declare independence.⁶⁰⁴ This law reflects the One-China policy, which asserts that mainland China and Taiwan are integral parts of a unified nation.⁶⁰⁵ Further, as noted above, after 1971-with the passage of United Nations General Resolution 2758⁶⁰⁶--Taiwan lost its ability to participate fully in all United Nations frameworks.⁶⁰⁷ The change in government recognition significantly impacted the island state's foreign and international status.

Due to its separate governance status quo, Taiwan has become a special and, in some ways, unique entity in the international community. It meets all the criteria to be considered a state, but

⁶⁰³ Mikaela Ediger, *International Law and the Use of Force against Contested States: The Case of Taiwan*, 93 NYU L. REV. 1668 (2018); SCOTT PEGG, DE FACTO STATES IN THE INTERNATIONAL SYSTEM 4 (1998).

⁶⁰⁴ Mainland Affairs Council, Republic of China (Taiwan), The Official Position of the Republic of China (Taiwan) on the People's Republic of China's Anti-Secession (Anti-Separation) Law, at https://www.mac.gov.tw/en/News_Content.aspx?n=8A319E37A32E01EA&sms=2413CFE1BCE87E0E&s=D1B0D66D5788F2DE.

⁶⁰⁵ Keyuan Zou, *Governing the Taiwan Issue in Accordance with Law: An Essay on China's Anti-Secession Law*, 4 CHINESE J. INT'L LAW, 455 (2005).

⁶⁰⁶ GA Res., *supra* note 601.

⁶⁰⁷ *Id.*

international recognition as such is hindered by cross-strait (i.e., China and Taiwan) relations and questions surrounding the legitimacy of its government. Ever since the passage of Resolution 2758, 70 countries have severed official diplomatic relations with Taiwan. The situation reached a critical point when the U.S. severed the official diplomatic relation with Taiwan in 1979, leaving Taiwan internationally isolated.

Throughout these diplomatic challenges, Taiwan has remained actively engaged in international affairs, adhering to almost all international norms and participating in sixty-five international organizations.⁶⁰⁸ For example, Taiwan participates as a member in thirty-seven intergovernmental or non-intergovernmental organizations, including APEC, WTO, Asian Development Bank (ADB), Asia Pacific Group on Money Laundering (APG), and Egmont Group (EG). Indeed, Taiwan has struggled to obtain even observer status in organizations like the World Health Organization and International Civil Aviation Organization under UN system.⁶⁰⁹ As a result, its compliance with international norms occurs despite the lack of membership in most international legal frameworks.

Furthermore, Taiwan has a history of implementing agreements into its domestic legislation. Consider on this front the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). CPTPP is an international regional trade agreement involving cross-

⁶⁰⁸ Executive Yuan, List of Important Statistics of the Republic of China, April 6, 2012 (行政院·中華民國重要統計數據一覽·2012 民國 111 年 4 月 6 日) at <https://www.ey.gov.tw/state/B099023D3EE2B593/e529d6b0-e467-45fc-9a5a-4facb49a8243>.

⁶⁰⁹ Jonathan Herington & Kelly Lee, *The Limits of Global Diplomacy: Taiwan's Observer Status at the World Health Assembly*, 10 GLOBAL HEALTH (2014); Ram S. Jakhu & Kuan-Wei Chen, *The Missing Link in the Global Aviation Safety and Security Network: The Case of Taiwan*, in ASIA-PACIFIC SECURITY CHALLENGES 243-61 (Anthony J. Masys & Leo S. F. Lin eds., 2017).

pacific countries.⁶¹⁰ Following the withdrawal of the U.S. from the Trans-Pacific Partnership Agreement, the remaining parties concluded CPTPP and incorporated the text of TPP into CPTPP. Taiwan has been seeking to join CPTPP as a member. In April 2022, Taiwan took unilateral steps to comply with the CPTPP by passing intellectual property laws.⁶¹¹ The Office of Trade Negotiation under the Executive Yuan, Taiwan's main representative office for international trade negotiation, also supported the application to join the CPTPP.⁶¹²

Another example of Taiwan's investment in complying with agreements it is not a party to lies in its domestic implementation of international human rights conventions. Although Taiwan cannot officially sign and ratify international human rights conventions due to its special status, it has incorporated ICCPR, ICESCR and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) into its domestic laws. In 2009, the passage of the Act to Implement the ICCPR and the ICESCR requires governmental agencies to comply with ICCPR and ICESCR. For example, when the government reviews or passes a law or regulation, a further consideration related to rights and obligations under ICCPR and ICESCR should be conducted and written in official documents. And the government should establish a human rights report review system to supervise the implementation of this act.⁶¹³ Similar veins were mirrored by the Taiwanese government in the 2011 Enforcement Act of CEDAW,⁶¹⁴ 2014 Act to Implement the

⁶¹⁰ The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (signed in 2016). Contracting parties include Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam.

⁶¹¹ Joy Tseng, Wang Yang-Yu & Kay Liu, *Taiwan Passes CPTPP-Compliant Intellectual Property Amendments*, FOCUS TAIWAN, Apr. 15, 2022.

⁶¹² Office of Trade Negotiation Executive Yuan, Taiwan applies to join CPTPP, Sep. 23, 2021.

⁶¹³ See Art. 5 & 6 of the Act to Implement the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights (兩人權公約施行法), at <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=I0020028>.

⁶¹⁴ 2011 Enforcement Act of Convention on the Elimination of All Forms of Discrimination against Women (消除對婦女一切形式歧視公約施行法), at <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=D0050175>.

Convention on the Rights of Persons with Disabilities,⁶¹⁵ and the 2019 Implementation Act of the Convention on the Rights of the Child.⁶¹⁶

As shown with the above examples, Taiwan also has a long history of compliance with IEL agreements as a non-contracting party. Its history with international climate change agreements is especially instructive. Taiwan is not a contracting party to the FCCC, Kyoto Protocol and Paris Agreement. Yet as noted below, it has actively participated in the international effort to address climate change through multiple methods, including via compliance with international scientific organizations and extensive implementation of treaty “obligations” via domestic legislation.

For example, Taiwan has joined climate change scientific organizations such as the International Geosphere Biosphere Programme, International Group of Funding Agencies for Global Change Research, and the Energy and Resource Lab of the Industrial Technology Research Institute. Taiwan’s compliance with CO₂ emission processes has been consistent with international standards.⁶¹⁷ Taiwan has also implemented substantial domestic law and policy to comply with international agreements on climate change. To ensure the implementation of UNFCCC and related treaties, the Taiwanese government established the Global Change Policy Guideline Task Force under the Executive Yuan (the major administrative organization in Taiwan) in 1994 to coordinate the cross-departmental cooperation on sustainable development. In 1997, the Task Force was integrated into the National Council on Sustainable Development, which oversaw eight working groups covering areas from air quality surveillance to energy arrangements. While

⁶¹⁵ 2014 Act to Implement the Convention on the Rights of Persons with Disabilities (身心障礙者權利公約施行法), at <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=D0050194>.

⁶¹⁶ 2019 Implementation Act of the Convention on the Rights of the Child (兒童權利公約施行法), at <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=D0050193>.

⁶¹⁷ Wen-Chen Shih, *The Implementation of the UN Framework Convention on Climate Change in a Non-Party State: Taiwan*, 2 INTERNATIONAL ENVIRONMENTAL AGREEMENTS: POLITICS, LAW & ECONOMICS 74, 69 (2001).

the CO₂ reduction was initially considered a medium- or long-term goal, the Council was under no urgent pressure to reach a plan in the short term.⁶¹⁸

Yet, recognizing the urgency of global warming, the Taiwanese government took further steps. In 2015, the Greenhouse Gas Reduction and Management Act was enacted to regulate the carbon reduction measures and adaptation strategies. The responsible authority, Environmental Protection Administration (EPA), supervises the implementation of this act while also enhancing grants and education related to climate change.⁶¹⁹

Furthermore, in February 2017, the Taiwan EPA promulgated the “National Action Guideline responding to Climate Change” (國家因應氣候變遷行動綱領), outlining Taiwan’s response to climate change. Subsequently, in 2018, the National Action Guideline for Climate Change Adaptation was established to further solidify Taiwan’s efforts in adapting to climate change impacts. The Executive Yuan consistently dispatched representatives, along with those from EPA, to attend conferences related to the Paris Agreement and to ensure that Taiwan remained updated with international developments conclusions.⁶²⁰

However, these costs are incurred without the benefits that parties receive from compliance. For instance, Taiwan is not eligible to participate in the cost-sharing and subsidizing provisions of the Paris Agreement, which are designed to help parties mitigate the expenses of implementing the Agreement’s terms. It is important to note that complying with international

⁶¹⁸ *Id.* at 84.

⁶¹⁹ See generally, Greenhouse Gas Reduction and Management Act (溫室氣體減量及管理法), the act can be reached at <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=O0020098>.

⁶²⁰ The 3479th meeting of the Executive Yuan, progress of the Paris Climate Convention and subsequent planning actions in response to climate change (行政院第 3479 次會議 · 巴黎氣候公約會議進展暨因應氣候變遷後續規劃作為).

human rights laws is at least as costly for non-parties as it would be for parties. According to a Legislative Yuan report on budget estimation in 2021, compliance with human rights laws alone could cost 124 million New Taiwan Dollars (3.84 million USD) annually.⁶²¹ Unilateral participation in international organizations share similar situation, for promoting Taiwan's participation in international community, the ministry of Foreign Affairs spent 48.7 million New Taiwan Dollars (15 million USD) in 2011.⁶²² Despite this significant expenditure, the compliance and participation does not yield sufficient rewards for Taiwan, as it remains in a contested status within the international community.

Rational choice theory would explain Taiwan's compliance in global climate change based on its interests.⁶²³ Yet the choice to engage in costly compliance without many of the benefits of becoming a party presents a puzzle to this view. This chapter proposes an alternative viewpoint. Specifically, it will argue that psychological research can help explain Taiwan's decision to comply with international agreements while the benefits of their decision might not outweigh the costs.

⁶²¹ 2021 Annual Unit Budget Evaluation Report of the Oversight Yuan (監察院 110 年度單位預算評估報告), at <https://www.ly.gov.tw/Pages/Detail.aspx?nodeid=44131&pid=202613>.

⁶²² Ministry of Foreign Affairs, Taiwan, Media reports that the Ministry of Foreign Affairs has budgeted NT\$487 million to promote participation in the WHA and WHO are inconsistent with the facts (有關媒體報導外交部編列新台幣 4.87 億元的預算推動參與 WHA 及 WHO 與事實不符), at https://subsite.mofa.gov.tw/igo/News_Content.aspx?n=6053&s=110203.

⁶²³ Goldsmith & Posner, *supra* note 13.

5.2 TAIWAN'S NON-RECIPROCAL COMPLIANCE UNDER CONVENTIONAL DISCUSSION

This section begins with a further orientation into the traditional rational choice discussions regarding the rationale behind states' compliance with IEL. It then explains how this traditional rational choice approach fails to account for voluntary costly compliance with international law.

Rational choice theory discussions suggest that states comply with international law only when the benefits outweigh the costs.⁶²⁴ Jack Goldsmith and Eric Posner expanded the economics model to elucidate the dynamics of cooperation and competition between states.⁶²⁵ According to their framework, international law arises from states acting rationally to maximize their interests, taking into account their perceptions of other states' interests and the distribution of state power.⁶²⁶ By state interest, it refers to the preferences of a state regarding outcomes.⁶²⁷ In their book, although they recognize the decision-making entity is individual, the focus is on the state's interest. They assert the state's interests are collective and can be identified through specific domestic institutions and evidence. These state interests are consequentialist in nature, meaning that the desired outcome may lead to the action of the state.⁶²⁸

Based on this premise, Goldsmith and Posner proposed four possible models to explain the interaction of states: coincidence, coordination, cooperation, and coercion.⁶²⁹ Coincidence refers to patterns of behavior resulting from each state pursuing its self-interest without any regard to the action of other states.⁶³⁰ Coordination occurs when conflicting states coordinate with each other to

⁶²⁴ *Id.*

⁶²⁵ *Id.*

⁶²⁶ *Id.* at 3.

⁶²⁷ *Id.* at 6.

⁶²⁸ *Id.* at 5.

⁶²⁹ *Id.* at 13

⁶³⁰ *Id.* at 12.

resolve the conflict.⁶³¹ A third possible explanation for the behavior is cooperation. Both states could mutually benefit from the cooperation, provided they adhere to the agreement. In the case of cooperation, states mutually refrain from acting against the agreement. Lastly, coercion arises when a powerful state (or coalition of states with convergent interests) compels weaker states to engage in acts that run counter to their interests.⁶³²

Notably, none of these categories explains the costly compliance by a non-party. Firstly, Taiwan's compliance cannot be considered coincidental within the international community due to its unique status, requiring consideration of every political concern, especially those of its allies. Secondly, coordination does not account for Taiwan's compliance, as its unique status prevents it from conflicting with other states in international legal forums where it is not a party. Thirdly, cooperation does not explain Taiwan's unilateral compliance with the UNFCCC, since no specific interest is provided to any party through Taiwan's unilateral enforcement. Lastly, coercion does not apply to Taiwan's compliance with the UNFCCC, as there are no apparent conflicting interests with other states in a non-party treaty for Taiwan.

Goldsmith and Posner's argument does not imply that Taiwan's compliance behavior is entirely uninfluenced by coincidence, coordination, cooperation, or coercion. For instance, Shih has examined Taiwan's compliance with trade-related agreements, noting that Taiwan could face trade sanctions, even as a non-party, for violating certain provisions of such agreements.⁶³³ She argued that in order to mitigate the cost of trade sanctions, Taiwan complies with UNFCCC actively. From a global viewpoint, first, Taiwan has always been wary of provisions pertaining to non-parties in multilateral environmental agreements (MEAs), given its non-membership status in

⁶³¹ *Id.*

⁶³² *Id.*

⁶³³ Shih, *supra* note 617.

these accords. Taiwan is especially worried about the clauses in MEAs that might limit or penalize trade with non-Parties, because its economy is highly dependent on international commerce. In her opinion, similar rules to those in the Montreal Protocol may potentially be incorporated in future protocols or revisions of the Kyoto Protocol and the FCCC, despite the absence of specific language addressing non-Parties or trade restrictions in these agreements at present. To entice more governments to join the Kyoto Protocol and the Convention, for example, the Protocol's flexible procedures might face limitations in their application to non-Parties, potentially leading to the prohibition of carbon trading with them.⁶³⁴ She contended that Taiwan actively complies with the Convention to mitigate the cost of trade sanctions.

However, her observation cannot fully explain the costly compliance when a state is a non-contracting party or member in certain international legal forums. The compliance for a non-party/member is costly. For its international cooperation and development budget, Taiwan had directed NTD\$12.9 billion (about \$432 million in USD) in 2022 to projects that fulfilled the OECD's Official Development Assistance standards. The percentage of Taiwan's gross national revenue that went toward these expenses increased from 0.04 percent in 2021 to 0.055 percent in that year.⁶³⁵ Ensuring compliance with international human rights legislation is an expensive endeavor. According to a 2021 Legislative Yuan budget estimation report, the mere compliance with these laws could result in a cost of 124 million New Taiwan Dollars (3.84 million USD).⁶³⁶ In 2011, the Ministry of Foreign Affairs allocated 487 million New Taiwan Dollars (15 million USD) to advance Taiwan's involvement in international organizations.⁶³⁷ A designed treaty or

⁶³⁴ *Id.*

⁶³⁵ Ministry of Foreign Affairs, Republic of China (Taiwan), Official Development Assistance, at <https://en.mofa.gov.tw/cp.aspx?n=1579>.

⁶³⁶ 2021 Annual Unit Budget Evaluation Report, *supra* note 621.

⁶³⁷ Ministry of Foreign Affairs, *supra* note 622.

organization may lack transparency for non-party/members. Additionally, these states may face increased expenses related to compliance due to their non-party or non-member status when transforming international law into domestic legislation. Considering the potential costs of trade sanctions, Taiwan, not being a contracting party to major MEAs, makes it challenging for other countries to assert that Taiwan has violated MEAs obligations and justify their sanction under the current circumstances. Although some supplemental discussions on compliance motivation provide that states may also focus on other invisible gains, such as reputation and fairness, these incommensurable interests still complicate the valuation process for international scholars. Shih's argument focused on the potential future trade cost is incommensurable for Taiwan's compliance. However, the costs mentioned above clearly demonstrate the high expense of compliance.

According to rational choice theory, therefore, Taiwan would not be expected to participate in international climate forums or engage in unilateral compliance because the costs are too high and the rewards too minimal, especially for non-parties. Recall, on this front, that Taiwan is not a party to either the UNFCCC or the Paris Agreement, making access to information costly. For instance, the Executive Yuan sends representatives to the UNFCCC Conference of the Parties (COP) to obtain the latest information. Given Taiwan's non-party status, acquiring updated information is challenging and often involves diplomatic trade-offs. Moreover, Taiwan is unable to access capacity building, economic support, technology transfer, or compensation for loss and damage under the Paris Agreement mechanism. Taiwan's unilateral compliance does not yield reciprocal rewards for its climate governance efforts.

The primary question for Taiwan's compliance is: why does Taiwan, a special state-like entity, strive to engage in international law even if such endeavor is costly? Such unilateral compliance is costly. As noted, Taiwan invests substantial resources in compliance. Furthermore,

costly compliance in international forums has thus far failed to reward Taiwan in changed or improved international status. Even after decades of costly compliance, Taiwan still struggles to participate in international legal negotiations, such as those addressing climate change.

Rational choice theory can thus not fully address Taiwan's compliance due to its unique status under international law. Taiwan is not part of any treaty framework and is marginalized by the international community. These conditions make Taiwan an exclusive subject for discussions on international compliance. The conventional discussions do not fully explain Taiwan's compliance in climate matters, leaving an academic gap for insights from other disciplines. Traditional rational choice theory also lacks a comprehensive understanding of what constitutes "interest."⁶³⁸ While economic factors may be one consideration, other preferences and valuation processes are not necessarily addressed or explained by this theory.

These gaps present an opportunity for intervention from psychology. Psychological research delves into individual cognition, motivation, emotion, and social context, providing insights into how individuals perceive and make decisions. This research posits that incorporating psychological observations could enhance our understanding of Taiwan's actions in international law, focusing in on the case study of Taiwan's compliance with international climate law.

5.3 A CASE STUDY OF TAIWAN'S NON-RECIPROCAL CLIMATE COMPLIANCE

The existing academic gap presents an opportunity for law and psychology. This gap is addressed through the psychological observations provided in this section. This section is composed of two parts. The first part refers to the broad psychology of compliance and decision-

⁶³⁸ Renninger & Su, *supra* note 503,167-84.

making within international law in prior chapters. The second part extends this psychological discourse by integrating theories developed in the preceding chapter, specifically focusing on the psychology of IEL.

General psychology provides valuable empirical insights into compliance and decision-making dynamics within the realm of international law.⁶³⁹ It encompasses topics such as cognition, motivation, and emotion, all of which are pertinent to understanding behavior in international legal contexts. These psychological insights are applicable and relevant to the domain of international law.

Subsequently, this section delves into the psychology of IEL, using it to analyze Taiwan's compliance with climate issues. It argues that Taiwan's actions are influenced by psychological preferences and perceptions, highlighting the significance of a psychological approach in enhancing our comprehension of this subject matter. As a unique state, Taiwan endeavors to integrate into international society and is influenced by the perceptions of allied countries. Psychological observations can provide insight into this relationship.

5.3.1 The General Psychology of International Law in Compliance and Decision-making

As is the case with other areas that have benefited from law and psychology over the past decade, empirical research on human behavior provides helpful observations about how and why people act as they do. Chapter 1 and 2 have noted that the general psychology of international law has been historically overlooked and it can offer insights into how state leaders perceive and process information on international law. From psychology of compliance to decision-making process of individual, psychological observation provides fruitful studies for our reference.

⁶³⁹ van Aaken, *supra* note 112.

As outlined in Chapter 3, IEL encompasses aspects such as transboundary governance and environmental impact. Transboundary governance is characterized by voluntariness, fragmentation, and political border elements, while environmental impact, as described by Rowell and Bilz, includes diffusion, complexity, and non-human factors. These features can elicit specific psychological responses that influence individual decision-making processes regarding cognition, motivation, emotion, and social context. To gain a deeper insight into how the psychology of IEL influences Taiwan's climate compliance, this study applies the psychology of IEL to Taiwan's compliance in subsequent sections.

5.3.2 Psychological Explanation to Taiwan's Climate Compliance

In this section, this research analyzes scholarly discussion, official reports and documents sourced from Taiwan's Ministry of Foreign Affairs and Administrative Yuan. By delving into these documents, the study aims to uncover the underlying motivations driving Taiwan's compliance with IEL, particularly from a psychological perspective. This research will explore and utilize six key features of the psychology of IEL, i.e., voluntariness, fragmentation, political borders, (under the umbrella transboundary governance) diffusion, complexity, and non-human character, (under the umbrella environmental impact) to elucidate Taiwan's unilateral compliance with IEL. The dissertation finds that Taiwan places a high value on IEL, resulting in compliance even under costly conditions.

Psychology of Transboundary Governance in Taiwan's Compliance with IEL

Taiwan's unilateral climate compliance can be understood from a psychological perspective. Psychological observations provide a rationale for why Taiwan values IEL more

highly than the associated costs. International law is fragmented and decentralized.⁶⁴⁰ Legally speaking, every sovereignty is supreme and not subject to the jurisdiction of others; no supreme power can alter the act of a sovereign state unless the state chooses to allow it to do so. In practice, when considering the enforcement of the international law, one should not take the enforcement mechanism into account.⁶⁴¹ Therefore, state enforcement first depends on a state's (e.g., Taiwan's) voluntariness. In the current situation, Taiwan's voluntary compliance is more pronounced compared to other countries, given the costly and uncertain nature of Taiwan's international relationships. Yet the cost and uncertainty does not halt Taiwan's participation and compliance to international laws, and IEL. Moreover, the psychology of fragmentation is also significant in this context. How states perceive a fragmented mechanism affects their assessment and compliance. This section argues that Taiwan's efforts to gain international recognition exemplify a perception of centralization within the psychology of fragmentation. Lastly, the influence of political borders

⁶⁴⁰ Martti Koskeniemi & Päivi Leino, *Fragmentation of International Law? Postmodern Anxieties*, 15 LEIDEN J. INT'L L. 553 (2002).

⁶⁴¹ For international law compliance, scholars also offer various explanations. This dissertation consider psychological observation could also supplement the scholarly discussion by its empirical evidence. MARTTI KOSKENIEMI, *THE POLITICS OF INTERNATIONAL LAW* 61 (2011), Koskeniemi posits that the meaning and operation of law transcend what the literature has suggested thus far. His seminal work "the politics of international law" argues that political choice is intrinsic to decision-making in international law. He further points out that determining the legality of a nation hinges upon one's interpretation of political correctness or justness. In alignment with Koskeniemi's viewpoint, Harold Hongju Koh, *Why do Nations Obey International Law*, 106 YALE L.J. 2599 (1997), Harold Koh focuses more on the internalization of international law. Koh points out the often-ignored areas such as interaction, interpretation, and internationalization of international norms into domestic legal systems are pivotal to understand why nations obey international law. He proposes that both the managerial and fairness explanations regarding compliance overlook a detailed examination of the intricate process of institutional interaction. This process involves more than just debating and interpreting global norms; it also involves the internalization of these norms in domestic legal systems. ABRAM CHAYES & ANTONIA HANDLER CHAYES, *THE NEW SOVEREIGNTY COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS* 3 (1995), in the Chayeses' view, the managerial model, nations obey international rules not because they are threatened with sanctions, but because they are persuaded to comply by the dynamics created by treaty regimes to which they belong. Further, THOMAS M. FRANCK, *THE POWER OF LEGITIMACY AMONG NATIONS* (1990), Thomas Franck argues that the key to compliance is not so much on the managerial process as on the fairness of international rules themselves. He asserts that nations obey powerless rules because they are pulled toward compliance by considerations of legitimacy (or "right process") and distributive justice.

on subjective identity impacts Taiwan's compliance. For instance, Taiwan aligning itself with other democratic states in a campaign could influence Taiwan's behavior under the UNFCCC.

This section attempts to answer: what drives Taiwan's motivation in complying with agreements—including climate agreements—to which it is not a party? To understand the behavior of Taiwan better, this research suggests that the psychological approach can provide additional insights into and a deeper understanding of the psychology behind voluntariness in state actions, the fragmentation of international law, and the significance of political borders.

Voluntariness

The psychology of voluntariness helps understand state compliance under international law. States act to voluntarily comply with international law in the sense that no supreme institution has the power to enforce the law under the decentralization of international law.⁶⁴² Therefore, why states comply to international law has been a debatable puzzle.⁶⁴³ This dissertation argues that a state's voluntarily compliance can be understood by the psychology of voluntariness, including loss aversion, social conformity, and pursuit of recognition, with Taiwan's unilateral compliance as an example.

Firstly, research on loss aversion presents some of the most robust findings in psychological research. This dissertation suggests that loss aversion—wherein individuals seek to prevent losses from a baseline more than they pursue gains⁶⁴⁴—is especially import to law,⁶⁴⁵ including international law, where compliance presents a heightened challenge. Loss aversion may create self-enforcing incentives for compliance. The successful establishment of a standard

⁶⁴² Anne van Aaken & Betül Simsek, *Rewarding in International Law*, 115 AM. J. INT'L L. 195 (2021).

⁶⁴³ Koh, *supra* note 641.

⁶⁴⁴ Nathan Novemsky & Daniel Kahneman, *The Boundaries of Loss Aversion*, 42 J. MARKETING RESEARCH, 119 (2005).

⁶⁴⁵ Eyal Zamir, *Loss Aversion and the Law*, 65 VAND. L. REV. 829 (2012).

perception by international law might lead decision-makers to perceive the departure from that standard as "losses." Adding to the motivation to follow global standards, this raises the concept of loss aversion.⁶⁴⁶ And this approach could also be applied to explain Taiwan's compliance with international law. As almost all states comply with international laws, violating international laws could be considered a "loss."⁶⁴⁷ To avoid such an intangible loss, Taiwan chooses to align with peer states' behaviors in the domain of climate change and complies with relevant international agreements.

Second, from the social psychology perspective, the information provided can lead to the phenomenon of conformity in societal context. *Conformity* refers to individuals displaying identical behaviors or actions along with others due to group pressure.⁶⁴⁸ The research on individuals' conformity has been extensively studied and replicated by scholars. Sherif's experiment explained the conformity of minority to the majority.⁶⁴⁹ while Asch showed that the group pressure could influence judgment formation.⁶⁵⁰ In Asch's experiment, a group of individuals were seated and told to select one card from two different cards. Each person who selected a card was then asked to provide a wrong answer to the rest of the group. This setup aimed to observe the interacting behavior of last person. The result showed that 76% of the subjects in the experiment chose the wrong answer to confirm with the group's choices at least once.⁶⁵¹

⁶⁴⁶ Arden Rowell & Josephine van Zeben, *A New Status Quo? The Psychological Impact of the Paris Agreement on Climate Change*, 7 EUR. J. RISK REGULATION, 49 (2017).

⁶⁴⁷ Henkin, *supra* note 246; See also Chayes & Chayes, *supra* note 246.

⁶⁴⁸ Guandong Song et al., *The Psychology Explanation of Conformity*, 40 SOCIAL BEHAVIOR & PERSONALITY, 1365 (2012); David Myers & Sidney Arenson, *Stimulus Factors in Conformity*, 76 J. SOCIAL PSYCHOLOGY 37 (1968).

⁶⁴⁹ Muzafer Sherif, *A Study of Some Social Factors in Perception*, 187 ARCHIVES OF PSYCHOLOGY 5 (1935).

⁶⁵⁰ Solomon Asch, *Group Pressure upon the Modification and Distortion of Judgments*, in GROUPS, LEADERSHIP AND MEN: RESEARCH IN HUMAN RELATIONS 177-90 (H. Guetzkow ed. 1951).

⁶⁵¹ Solomon Asch, *Opinions and Social Pressure-Conformity Experiment*, 193 SCIENTIFIC AMERICAN, 31 (1955).

One possible reason for this phenomenon can be explained by the *normative social influence* and the *informative social influence*.⁶⁵² The normative social influence refers to conformity driven by the worry/fear of peer' exclusion or antipathy;⁶⁵³ while the informative social influence occurs in a situation where with limited information to make decisions, people usually count on others' opinion and follow their behaviors.⁶⁵⁴ A further experiment demonstrated this observation. Stanley Schachter arranged a group and introduced a deviant member to interact with the others. Eventually, the group had to select one person to single out from the group. The deviant individual continued to act in opposition to the majority opinion of the group. As a result, when it came the time for the group to make a decision, the deviant opinion or subject was ultimately removed from this group. In Stanley Schachter's observation, the majority would try to sway the contrary person's opinion. If the persuasion failed, the deviant would often be excluded from this social group.⁶⁵⁵

While research on this topic is still evolving, the conformity out of peer pressure remains the most widely accepted explanation for conformity. This psychological observation can also be applied to Taiwan's climate compliance given political decisions depend on the decision-maker's perception.⁶⁵⁶ And IEL as part of the international politics and laws shares a similar mechanisms and consequences.⁶⁵⁷ In present case, Taiwan's non-reciprocal and costly compliance in IEL could

⁶⁵² Morton Deutsch & Harold B. Gerard, *A Study of Normative and International Social Influences upon Individual Judgement*, 51 J. ABNORMAL AND SOCIAL PSYCHOLOGY 629 (1955).

⁶⁵³ Jessica M Nolan, et al, *Normative Social Influence is Underdetected*, 34 PERSONALITY & SOCIAL PSYCHOLOGY BULLETIN 913 (2008).

⁶⁵⁴ Deutsch & Gerard, *supra* note 652.

⁶⁵⁵ Stanley Schachter, *Deviation, Rejection, and Communication*, 46 THE JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY 190 (1951).

⁶⁵⁶ Mintz et al., *supra* note 150, pp. 86-101; Jervis, *supra* note 111, pp. 13-40.

⁶⁵⁷ Goldsmith & Posner, *supra* note 13, p. 4.

be considered an act of conformity under the psychology of voluntariness. The example here can help further unpack this scenario.

Taiwan aligned itself with the global consensus established by the international community within the framework of IEL. The aforementioned UNFCCC reflected this consensus, emphasizing the collective effort to combat carbon dioxide emissions and mitigate global warming. Formulated in 1992, this legal framework garnered agreement from 197 UN member states, all committed to addressing carbon emissions, with the overarching objective of reducing carbon emissions clearly defined. Although Taiwan is not a UN member state, which complicates its ability to participate as a contracting party in the UNFCCC and its associated annexes, Taiwan still actively engages in efforts aimed at reducing carbon emissions aligned with the UNFCCC.⁶⁵⁸ The Minister of Foreign Affairs in Taiwan also addressed in the Legislative Yuan serves as a notable example of the conformity phenomenon. In the speech, Minister Joseph Jaushieh Wu highlighted that following international (environmental) law would be a beneficial positive impact and impression for Taiwan under international society.⁶⁵⁹ This statement indicates that adherence to IEL leads to favorable international expectation that are in alignment with international social consensus. This speech emphasized the impact of collective pressure from the international community on Taiwan's adherence to IEL. The Minister's statements also highlighted a subjective belief in the

⁶⁵⁸ Wen-Chen Shih, *supra* note 617; see also Tsung-Han Tai, Shih-Ming Kao & Wan-Chun Ho, *International Soft Laws against IUU Fishing for Sustainable Marine Resources: Adoption of the Voluntary Guidelines for Flag State Performance and Challenges for Taiwan*, 12 SUSTAINABILITY 6013 (2020). In a number of other cases, sub-national governments—barred from entering directly into international agreements—have adopted international environmental goals. See, e.g., U.S. Climate Alliance (representing a coalition of U.S. state Governors committed to reducing emissions consistent with the goals of the Paris Agreement); see generally Rowell & van Zeben, *supra* note 5, (summarizing the role of subnational actors in U.S. climate law and policy). In some cases, participation of these entities is even seen as key to the successful achievement of environmental goals.

⁶⁵⁹ 2022 Report on Diplomatic Affairs of the Fifth Session of the Tenth Legislative Yuan by the Minister of Foreign Affairs(外交部長立法院第十屆第五會期外交業務報告); 2021 Report on Diplomatic Affairs of the Fourth Session of the Tenth Session of the Foreign Minister(外交部長第十屆第四會期外交業務報告).

interconnectedness of following IEL. This aligns with the concept of international social influence, whereby the perceived norms and expectations of the global community shape or mold state behaviors.

Another finding for the theory of conformity is the *internal consistency* of individuals regarding the object they perceive, which results in the conformity. Individuals perceive and agree upon the purpose, reason, mental processes and emotional experiences of the subject, and act according to their perception.⁶⁶⁰ Conforming behavior reaffirms an individual's internal informative consistency, thereby constructing their self-identity. In other words, the conformity behavior is not solely driven by external peer pressure but also by the internal informative consistency. Thus, understanding individual perceptions is critical in reviewing the conformity behavior.

Internal consistency could also be used to explain the compliance of Taiwan in climate change legislation. For instance, the National Climate Change Adaptation Policy Framework, outlined by Taiwan's Administrative Yuan, references report from the United Nations Intergovernmental Panel on Climate Change (IPCC) released in 1990, 1995, 2001, and 2007. These reports unequivocally highlight the significant impact of human activities on the Earth's natural environmental systems since the onset of industrialization. They emphasize that surpassing the critical threshold of the Earth's dynamic equilibrium due to human activities could lead to rapid and abnormal changes across various domains. These changes, furthermore, could manifest in linear and unpredictable alterations in physical, chemical, and biological processes, with the most

⁶⁶⁰ Song et al., *supra* note 648, at 1368.

noticeable one being the atmospheric changes, notably global warming.⁶⁶¹ Similarly, a Policy White Paper from the Ministry of Health and Welfare also delivered similar sentiments, describing the Paris Agreement adopted during the United Nations Climate Summit on December 12, 2015, following the Kyoto Protocol and extending the climate action plan beyond 2020. This agreement aims to foster collaboration among nations through strategies such as mitigation and adaptation to achieve the shared objective of addressing climate change globally. The Paris Agreement marks the largest coalition of countries in history working towards climate response, highlighting the universal and pressing nature of climate change impacts that demand immediate attention and resolution.⁶⁶² These compliance efforts demonstrate how Taiwan has internalized IEL into its domestic legislation to align with the international social consensus.

Taiwan views IEL as universal norms, and therefore acts in accordance with the UNFCCC. From scholarly discussion, Hsieh's observation addressed how Taiwan perceive IEL as international social norm also reflects the psychological argument on persistent consistency. Pasha Hsieh's observation on Taiwan's approach to international law highlights that Taiwan's educational framework historically and pragmatically views international law as universally applicable norm, this intrinsic perspective offers only a psychologically supportive understanding of Taiwan's approach to and discourse of compliance.⁶⁶³ The conformity explanation under the psychology of voluntariness enhances the understanding on Taiwan's compliance from intrinsic and social context.

⁶⁶¹ Council For Economic Planning and Development, *Adaptation Strategy to Climate Change in Taiwan* (行政院經濟建設委員會·國家氣候變遷調適政策綱領), Oct. 2012.

⁶⁶² Ministry of Health and Welfare, *White Paper on Policies to Address the Health Impacts of Climate Change* (衛生福利部·因應氣候變遷之健康衝擊政策白皮書) 2018.

⁶⁶³ Pasha Hsieh, *The Discipline of International Law in Republican China and Contemporary Taiwan*, 14 WASH. U. GLOBAL STUD. L. REV. 87 (2015).

Third, in addition, some argue that Taiwan complies with IEL for the goal of looking for political recognition under international law.⁶⁶⁴ For example, Taiwan and the People's Republic of China are at odds over which Pacific Island states will recognize the other. Some of these governments have already recognized Taiwan, conferring Taiwan some international support.⁶⁶⁵ The pursuing of recognition under the international community can also be understood as a way in which Taiwan engages with conformity of social norms—given that “recognition” is the fruit of international societal dialogue. Recognition can encompass various procedures within international relations, including acknowledging states or governments. State recognition specifically refers to the formal acknowledgment and acceptance of sovereign states by each other as equal entities within the global system.⁶⁶⁶ The practice of recognizing a distinct entity as a legitimate state has long been widely accepted. While recognition alone does not create a state, it does affirm the state's standing as an authentic participant in the broader global community.⁶⁶⁷ In pursuing recognition within the international community, Taiwan's actions highlight its exposure to international social norms and pressure regarding its identity. The international social psychology could offer helpful observation for acts as such.

The psychology of voluntariness with concepts like loss aversion and social psychology, aids in comprehending Taiwan's potential motivation for complying with the UNFCCC. Compliance with the UNFCCC comes at a significant cost for Taiwan. Despite the unclear and non-reciprocal rewards, Taiwan continues to make efforts to comply using any available means.

⁶⁶⁴ Timothy Rich, *Status for Sale: Taiwan and the Competition for Diplomatic Recognition*, 45 ISSUES & STUDIES, 159 (2009).

⁶⁶⁵ Anthony van Fossen, *The Struggle for Recognition: Diplomatic Competition between China and Taiwan in Oceania*, 12 J. CHINESE POLITICAL SCIENCE, 125 (2007).

⁶⁶⁶ Pal Kolstø, *The Sustainability and Future of Unrecognized Quasi-States*, 43 J. PEACE RESEARCH, 727 (2006)

⁶⁶⁷ James Ker-Lindsay, *Engagement without Recognition: The Limits of Diplomatic Interaction with Contested States*, 91 INT'L AFFAIRS, 267, 269 (2015).

A psychological perspective illuminates Taiwan's motivations and cognitive processes, offering insights for future research in this area.

The act of Taiwan could also be explained by the perception of a fragmented mechanism within the psychology of fragmentation, which would improve our understanding of Taiwan's unilateral compliance.

Fragmentation

In addition to voluntariness, the psychology of fragmentation could also shed light on Taiwan's compliance especially on its pursuing of international recognition. The fragmentation of international law may psychologically influence government action. International law becomes fragmented due to the decentralization of international institutions and legal systems. The parallel connection between international institutions and norms—neither of which is deemed superior to the other—is referred to as the fragmentation of international law. How individual states perceive such a fragmentation could play an important role in shaping their behavior. For instance, individuals often perceive others' behavior in an organized or structural pattern.⁶⁶⁸ State leaders might view international law through a centralized perspective within the global legal framework, which can serve as motivation for compliance with international law.

Likewise, the perception of international law as a centralized order could serve as a psychological factor motivating Taiwan. People frequently view others' behavior as more centralized, resulting in the establishment of cognition or motivation that can then drive action. The general population tends to overestimate the extent to which others' behaviors are regulated,

⁶⁶⁸ Yu Shelepin et al., *Analysis of the studies of the Perception of Fragmented Images: Global Description and Perception Using Local Features*, 39 NEUROSCIENCE & BEHAVIORAL PHYSIOLOGY, 569 (2009); Linda Argote et al., *supra* note 569; Jim Hewitt & Marlene Scardamalia, *Design Principles for Distributed Knowledge Building Processes*, 10 EDUCATIONAL PSYCHOLOGY REV. 75 (1998).

coordinated, and controlled.⁶⁶⁹ This reflects a broader inclination, in which people try to fit complicated and unrelated events into a cohesive framework. Everyone seeks a satisfactory explanation for everything that occurs to them. Admitting that a phenomenon defies explanation—or at least defies explanation without inserting numerous, complex qualifiers to our beliefs—is emotionally and intellectually exhausting.⁶⁷⁰ Therefore, people may attempt to pinpoint a single cause or aspect for a result due to the fragmentation of international law.

One instance of this is seeking political and diplomatic acknowledgment. Taiwan's pursuit of international recognition is rooted in its belief that adherence to international norms and order is crucial for recognition on the global stage. The prevailing "centralized" norm within the international community creates a pathway for Taiwan's specific efforts to gain recognition. According to Hsieh's observation, Taiwan has historically educated its lawyers that international (environmental) law, as a universal legal norm applicable in the society, exemplifies such belief or perception that international order is arranged in a concentrated form.⁶⁷¹ This perspective from psychology helps illuminate such actions.

The perception of fragmentation or the misinterpretation of centralization provides an alternative explanation for what drives Taiwan to participate in global climate change initiatives despite its disputed status. Another psychological perspective that aids in understanding this compliance is to consider the nature of international law, which addresses issues that transcend political borders.

Political Borders

⁶⁶⁹ Mitchel Resnick, *Beyond the Centralized Mindset*, 5 J. THE LEARNING SCIENCES 1 (2009).

⁶⁷⁰ ROBERT JERVIS, PERCEPTION AND MISPERCEPTION IN INTERNATIONAL POLITICS 319 (2017).

⁶⁷¹ Hsieh, *supra* note 663.

This dissertation has proposed that political boundaries have psychological impact at least in part because they provide a sense of *identity*. This abstract border or boundary can develop into a conceptual boundary that influences and defines individual identity. Since international law deals with cross-border relationships between states, the political boundary is essential to the logic of international law. The fundamental issues with international law are forces between two entities, trade and traffic, and diplomatic and consular contacts. These matters are essential to international law because they influence the treatment of individuals who live outside state borders. Political borders and other transboundary harm have been covered by IEL recently. People potentially interpret political boundaries psychologically since all international rules transcend national boundaries and triggered certain psychological phenomena.

Individuals often categorize themselves into groups, a tendency that leads them to see themselves as part of a particular group. Consequently, those outside of this identified group are viewed as outgroups. Social identity theory posits that individuals perceive themselves not only through their individual "personal identity" but also through a "social identity" defined by group affiliations. This theory also explains the concept of ingroup favoritism, where individuals strive to enhance their self-esteem by highlighting the positive qualities of their ingroups compared to those of outgroups, ultimately benefiting their ingroup.⁶⁷²

Ingroup bias could provide an additional rationale for Taiwan's compliance with IEL. As indicated by the Minister of Foreign Affairs' speech in 2022,⁶⁷³ Taiwan aligns itself with democratic ideals, positioning itself against authoritarian regimes.⁶⁷⁴ This alignment reflects a

⁶⁷² J. C. Turner et al., *Social Comparison and Group Interest in Group Favouritism*, 9 EUR. J. SOC. PSYCHOL. 187 (1979).

⁶⁷³ 2022 & 2021 Report by the Minister of Foreign Affairs, *supra* note 659.

⁶⁷⁴ Office of the President, Republic of China (Taiwan), President Tsai Publishes Article in Foreign Affairs on Taiwan's Democracy and Positive International Role, at <https://english.president.gov.tw/NEWS/6169>.

sense of belonging to a democratic group, showcasing Taiwan's adherence to social identity theory. Taiwan's compliance can be seen as a way to express solidarity with perceived ingroup members who share similar democratic values.

In term of international solidarity, Taiwan considers itself in “democratic campaign” that acts against the authoritarian.⁶⁷⁵ The recognized campaign results in self-categorization or self-identification in the phenomenon called “grouping.”⁶⁷⁶ The sense of grouping might be one result of the perceived political borders. This conceptualized political border plays a role in shaping Taiwan’s identity and its actions towards international legal compliance. Anyone from outside the identified group will be treated differently from the perspective of psychology. That is, psychologically, individuals tend to prefer things from the group s/he recognizes or identifies with when making a decision.⁶⁷⁷ Therefore, this grouping effect could impact the decision-making under international law. Taiwan could tend to follow the intention of in-group members, for example, the US, Japan, and those who belong in the democratic campaign. How Taiwan shapes this grouping or categorization process is important.

In addition to the campaign narrative, the perceived alliance between the United States-Taiwan and Japan-Taiwan further reinforces the influence of political borders and motivates Taiwan's compliance with international law. The Ministry of Foreign Affairs of Taiwan has repeatedly emphasized in their reports to the Legislative Yuan the strong partnership with the US and Japan as a key strategic approach to international cooperation.⁶⁷⁸ This involves adhering to

⁶⁷⁵ 2022 Report by the Minister of Foreign Affairs, *supra* note 659.

⁶⁷⁶ Phillip Tetlock et al., *Assessing Political Group Dynamics: A Test of the Groupthink Model*, 63 J. PERSONALITY & SOCIAL PSYCHOLOGY, 403 (1992).

⁶⁷⁷ Yueh-Ting Lee & Victor Ottati, *Attitudes Toward U.S. Immigration Policy: The Roles of In-Group-Out-Group Bias, Economic Concern, and Obedience to Law*, 142 J. SOCIAL PSYCHOLOGY 617 (2002).

⁶⁷⁸ Sheila Smith, *The United States, Japan and Taiwan: What Has Russia’s Aggression Changed?*, 17 ASIA POL’Y, 69 (2022).

international law and collaborating closely with these two partner countries. The sense of belonging to a group may provide insight into Taiwan's motivation for compliance from a psychological standpoint.

In the context of climate change governance, a crucial concern of the current times, the United States and Japan collaborate in establishing legal frameworks to address the climate change within various multilateral agreements like APEC, OECD, CPTPP, and USMCA. Taiwan, recognizing itself as a strong ally of these nations, is compelled to adhere to international regulations regarding climate change. This commitment to compliance is exemplified by Taiwan's enactment of the Climate Change Response Act by the Ministry of Environment in 2023.

The concept of imagining political borders play a significant role in shaping Taiwan's motivation and actions towards climate change. This perception refers to how Taiwan views itself within the international community, especially in the context of political recognition and participation in global initiatives. Despite its disputed political status or status of sovereignty, Taiwan, motivated by an intersection of multiple factors, still actively engages in climate change action.

From a psychological perspective, the imaging of political borders can be seen as a cognitive framework through which Taiwan perceives its role and responsibilities in addressing climate change. This framework encompasses not just legal or physical boundaries but also includes the socio-political dynamics and expectations placed upon Taiwan by the international community. Psychological studies supplement this phenomenon by offering insightful observations into Taiwan's motivations. These studies delve into cognitive processes, motivations, emotions, and social contexts that influence Taiwan's decision-making regarding climate change.

They help unravel the complexities of Taiwan's position, highlighting how perceptions of borders, both physical and conceptual, influence its proactive stance on climate action.

By understanding how imaging political borders impact Taiwan's motivation and actions, policymakers and researchers gain valuable insights into the interplay between international relations, psychology, and environmental governance. This comprehensive perspective contributes to crafting more effective strategies for global climate change cooperation and collaboration.

Psychology of Environmental Impact in Taiwan's Climate Compliance

Although environmental impact characteristics such as diffusion, complexity, and non-human involvement can affect our risk perception, they can also function to motivate state involvement should they draw sufficient attention from the state. As mentioned earlier, Taiwan's preferences and behavior are influenced by the information and risk perceptions it acquires from the international allied community. This section provides further analysis of how Taiwan's psychological reactions are influenced by its response to environmental impact, which in turn affects its compliance with climate issues.

The diffusion, complexity, and non-human attributes associated with environmental harm prompt and hasten Taiwan's recognition of its involvement in global climate change efforts. Climate change is an international problem that transcends national boundaries and influences multiple aspects of the ecosystem. The term "diffusion" describes how climate change moves in space and time and affects different parts of the world. This dispersion is complicated and involves many different causes, including deforestation, greenhouse gas emissions, ocean acidification, and altered weather patterns. These intricacies contribute to the complicated construction of climate change, which makes it a complex and difficult problem to solve. Moreover, the effects of climate change extend beyond human activity to affect the non-human environment. Such influence

encompasses natural resources, biodiversity, ecosystems, and wildlife habitats. The functioning and stability of ecosystems across the world are significantly impacted by changes in temperature, precipitation patterns, sea levels, and other variables. Climate change therefore has a significant impact on the non-human environment, causing disruptions, habitat loss, species extinction, and other negative outcomes.⁶⁷⁹

The nature and impact of climate change does inform Taiwan's perceptions on and approaches to climate change strategies despite the fact that Taiwan is frequently absent from international climate forums. The passage of the Climate Adaptation Act and other policy descriptions such as the white paper and climate guideline mirrors this perception domestically in Taiwan.⁶⁸⁰ Besides the mitigation and adaptation to climate change, further adoption on renewable energy is undertaken in Taiwan. The ongoing revision on Renewable Energy Development Act⁶⁸¹ by the Ministry of Economic Affairs shows the practical concern. The encouragement on offshore wind power over traditional thermal power generation echoes one spot of this ongoing development.⁶⁸² The Taiwanese government will subsidize relevant transactions to promote the use of green energy through bulk purchasing of renewable energy.⁶⁸³ This commitment shows Taiwan's dedication on the international stage to address climate change through mitigation and adaptation efforts, aligning with its climate allies.

⁶⁷⁹ Rowell & Bilz, *supra* note 29, pp. 232-8.

⁶⁸⁰ Ministry of Health, *supra* note 662; Ministry of Environment, National Climate Change Action Guidelines (環境部國家因應氣候變遷行動綱領), at <https://enews.moenv.gov.tw/DisplayFile.aspx?FileID=E7A42393F51D3B88>.

⁶⁸¹ Renewable Energy Development Act (再生能源發展條例).

⁶⁸² Offshore Wind Power Demonstration Incentives (離岸風力發電示範獎勵辦法).

⁶⁸³ The wholesale purchase rate of renewable energy and its calculation formula for the 105th year of the Republic of China, Taiwan (中華民國一百零五年度再生能源電能躉購費率及其計算公式).

Further psychological research elucidates how individual beliefs and ideologies shape their perceptions regarding climate change. People's ideologies shape their individual beliefs about the existence of climate change.⁶⁸⁴ Put simply, individuals tend to believe more in climate change science when they have greater trust in climate scientists and perceive a consensus among scientists regarding the reality of climate change.⁶⁸⁵ The “democratic campaign,” claimed by Taiwan, could shape or influence the ideology. Nowadays, though the results have not yet been positively observed, most democratic countries have been actively striving to tackle the problem of climate change. For example, the US and EU, as the two major democratic entities in the world, both implement or develop climate change relevant policies domestically or internationally.⁶⁸⁶ To align with the democratic campaign, Taiwan choose to implement their strategies accordingly. This psychological motivation and cognitive factor could influence Taiwan's stance against climate change, diverging from rational choice or other theories in international relations.

In addition, according to the construal-level theory, distant perspectives tend to prioritize abstract features in decision-making, while closer perspectives give more weight to concrete features. Expanding this theory, we suggest that psychological distance influences how the framing of risk and efficacy impacts compliance with climate change issues. Risk perceptions, related to the overall impact of climate change mitigation efforts, are likely to affect compliance when viewed from a distant perspective. Conversely, perceptions of efficacy, regarding the attainability of desired outcomes, hold more sway over compliance when viewed from a closer perspective.

⁶⁸⁴ Dan Kahan et al., *Cultural Cognition of Scientific Consensus*, 14 J. RISK RESEARCH, 147 (2011).

⁶⁸⁵ Matthew Hornsey et al., *Meta-Analyses of the Determinants and Outcomes of Belief in Climate Change*, 6 NATURE CLIMATE CHANGE, 622 (2016).

⁶⁸⁶ Rowell & van Zeben, *supra* note 5, pp. 252-68 (2021); JOSEPHINE VAN ZEBEN & ARDEN ROWELL, A GUIDE TO EU ENVIRONMENTAL LAW 193-229 (2021).

Chu and Yang's research, encompassing an experimental survey conducted with a sample size of 1,282 individuals that was representative of the national population, corroborated the construal level theory. Their study discovered that when individuals perceived climate change as being closer in spatial distance, framing messages in terms of efficacy enhanced their intent to act towards climate mitigation. Conversely, when the issue felt more distant, framing messages in terms of risk heightened the perception of risk and consequently increased behavioral intent.⁶⁸⁷

These results imply that when addressing abstract and distant risks, highlighting potential disastrous consequences could be more effective in motivating actions. Conversely, for immediate and tangible risks, emphasizing the feasibility of actions may be a stronger motivator.

Taiwan's response to climate change resonates with the psychological distance theory proposed by Chu and Yang. The escalating effects of climate change have profoundly impacted the island nation.⁶⁸⁸ Each passing year brings heavier rainfall during summers and more intense typhoons, indicative of a warming planet conducive to tropical storms.⁶⁸⁹ Extreme predictions suggest that flood-prone regions along Taiwan's low-lying southwest coast will expand by 92% between the late 20th and mid-21st centuries, assuming perfect correlation. This rise can be ascribed to the combined effect of rainfall and storm surges. On the other hand, if we overlook the compound impact and solely consider storm surges, the flood-prone area would see a small 15% rise in the best-case scenario. Coastal flooding is primarily caused by the combination of rainfall and storm surges rather than by the climate-induced amplification of any single element alone.⁶⁹⁰

⁶⁸⁷ Haoran Chu & Janet Yang, *Risk or Efficacy? How Psychological Distance Influences Climate Change Engagement*, 40 RISK ANALYSIS, 758 (2020).

⁶⁸⁸ An-Yuan Tsai & Wen-Cheng Huang, *Impact of Climate Change on Water Resources in Taiwan*, 22 TERR. ATMOS. OCEAN SCI., 507 (2011).

⁶⁸⁹ Tingyeh Wu et al., *A Comprehensive Disaster Impact Assessment of Extreme Rainfall Events under Climate Change: A Case Study in Zheng-Wen River Basin, Taiwan*, 75 ENVTL EARTH SCIENCES, 596 (2016).

⁶⁹⁰ Shih-Chun Hsiao et al., *Flood Risk Influenced by the Compound Effect of Storm Surge and Rainfall under Climate Change for Low-Lying Coastal Areas*, 764 SCIENCE OF THE TOTAL ENVIRONMENT, 1 (2021).

These tangible impacts have reduced Taiwan's psychological distance from climate change, prompting the government to enact more legislation and policies addressing this environmental challenge.

Furthermore, social networks play a significant role in climate action. Greater connections with individuals who acknowledge climate change leads to increased information-seeking and adaptation efforts.⁶⁹¹ Data gathered from three southeastern United States communities linked to natural resources show that strong connections among groups might discourage individuals from actively seeking new information regarding climate change impacts. On the contrary, having a wide range of connections across different groups is associated with a higher tendency to seek out such information. In other words, the social networks impact the cognition and motivation. Moreover, the results from other study support the idea that people's emotional and psychological ties to their local environment play a role in how they perceive their ability to adapt to climate-related changes.⁶⁹² The social network forms the perception of individuals, which further impacts the international negotiation. Another research on groupthink and climate action in COP26 also sheds light on this connection. The psychological perception could contribute to the failure of COP26.⁶⁹³ Hence, the environment in which a decision-maker operates also plays a role in shaping their perception of environmental impact.

Taiwan's social network reflects a pro-climate change action with its trade and diplomatic relations, particularly by working closely with Japan, the EU and the U.S. A notable instance of this commitment occurred in March 2021 when Taiwan and the United States signed a

⁶⁹¹ Jordan Smith et al., *Social Capital, Place Meanings, and Perceived Resilience to Climate Change*, 77 RURAL SOCIOLOGY, 380 (2012).

⁶⁹² Lynne C. Manzo, *Beyond House and Haven: Toward a Revisioning of Emotional Relationships with Places*, 23 JOURNAL OF ENVIRONMENTAL PSYCHOLOGY 47-61 (2003).

⁶⁹³ Myriam Gicquello, *The Failures of COP26: Using Group Psychology and Dynamics to Scale up the Adoption of Climate Mitigation and Adaptation Measures*, 13 TRANSNATIONAL LEGAL THEORY, 366, 379 (2022).

memorandum of understanding to establish a coast guard working group. This collaborative effort aims to enhance communication and information exchange between the U.S. and Taiwanese coast guards, fostering increased cooperation on mutual goals. These objectives included safeguarding maritime resources and combatting illegal, unreported, and unregulated fishing activities. This agreement was expected to pave the way for expanded cooperation on non-military initiatives with other Indo-Pacific partners.⁶⁹⁴ Taiwan and Japan set aside their territorial disagreements and tackled their conflict of fisheries management through the signing of a fisheries agreement in 2013. The agreement aimed to resolve or, at the very least, effectively manage the fisheries dispute in their overlapping waters.⁶⁹⁵ According to research from trade perspective, EU-Taiwan FTA demonstrates a rebalancing function from the regional trade perspective. France and the United Kingdom could turn their deficit in motor car trade into a surplus by significantly doubling their exports and boosting their agricultural surpluses by €200-€400 million apiece. For example, the United Kingdom may increase its service exports by half, France by the same amount, and Germany by the same amount in the industrial and automobile industries.⁶⁹⁶

The active participation of close partners like the United States, the European Union (EU), and Japan in addressing climate change significantly influences Taiwan's stance on this global issue. For the US, though statistically only half of Americans construe climate change as a personal risk,⁶⁹⁷ the U.S. Department of Defense still considers climate change to be one of the most severe threats to its society.⁶⁹⁸ On January 20, 2020 during his inaugural day in office, President Biden

⁶⁹⁴ Tsai Ing-Wen, *Taiwan and the Fight for Democracy: A Force for Good in the Changing International Order*, 100 FOREIGN AFF. 74 (2021).

⁶⁹⁵ Yun-Hu Yeh et al., *Taiwan and Japan: A Complex Fisheries Relationship*, 51 MARINE POL'Y, 293 (2015).

⁶⁹⁶ Michal Krol & Hosuk Lee-Makiyama, *A EU-Taiwan Trade Accord from EU Member States Perspective: Rebalancing Regional Trade*, ECIPE POLICY BRIEF NO. 13/2012 (2012).

⁶⁹⁷ Matthew Ballew et al., *Climate Change in the American Mind: Data, Tools, and Trends*, 61 ENVIRONMENT: SCIENCE & POL'Y FOR SUSTAINABLE DEVELOPMENT, 4 (2019).

⁶⁹⁸ U.S. Department of Defense, *Quadrennial Defense Review* (Washington, DC, 2014).

signed the paperwork to rejoin the Paris Agreement.⁶⁹⁹ Similarly, EU's Emissions Trading System has been instrumental in reducing carbon emissions, with more than 1 billion tons of CO₂ between 2008 and 2016 being saved.⁷⁰⁰ With its close alliance with the United States and the EU, Taiwan, under the influence of these two entities, turns itself into a pro-climate change action state despite its limited voice on international climate forums.

The psychology of environmental impact provides us with a better understanding of how the nature of climate change molds and influences state leaders' perception and preferences within the international community, as well as how the perception and preference reflect in international law. Psychological discussion provides an alternative and useful discussion point on inner motivation development, cognitive influence, and external social influences, which depict the inter-state dynamics between Taiwan and other states in the landscape of climate change politics. Together, if we incorporate the psychological method with other conversations and approaches, we may gain a greater comprehension of the action of this exceptional state—Taiwan.

5.4 CONCLUSION

The fields of law and psychology can enhance our understanding of why Taiwan invests significantly in complying with international agreements, such as climate agreements, even though it is not a party to them. Taiwan's emphasis on IEL reflects a different perception of international social norms, leading to compliance despite higher costs. Empirical studies in behavioral, cognitive, and social psychology provide insights into Taiwan's motivation for adhering to IEL.

⁶⁹⁹ U.S. Department of State, The United States Officially Rejoins the Paris Agreement, Feb 19, 2021, at <https://www.state.gov/the-united-states-officially-rejoins-the-paris-agreement/>.

⁷⁰⁰ Patrick Bay & Michaël Aklin, *The European Union Emission Trading System Reduced CO₂ Emissions despite Low Prices*, 117 PROCEEDINGS OF THE NAT'L ACADEMY OF SCIENCES, 8804 (2020).

Traditional accounts of state action, which focus on state interest and the benefits of reciprocity, do not explain why a state like Taiwan would invest in such actions. A psychological analysis helps to explain Taiwan's choices, focusing especially on the psychology of IEL. Perspectives from voluntariness, fragmentation, political borders, diffusion, complexity and non-human characteristics shed light on why Taiwan complies with IEL and what motivates Taiwan's compliance. The psychological approach provides a potential framework for understanding Taiwan's behavior in international affairs.

By adding the psychological technique into Taiwan's climate compliance, scholars get insight into the different reasons that can inspire a state to act, in addition to economic incentives. Psychological observation, particularly in the domains of cognition, motivation, emotion, and social environment, can be significant variables in prompting a state to act under IEL. Furthermore, psychological research fills the gap left by rational choice theory, which primarily emphasizes economic concerns. Psychological observation helps to comprehend a state's actions by illuminating its underlying reasons and cognitive processes, which may have international legal implications. However, more data and further research are necessary to fully comprehend this complex issue.

CONCLUSION

This dissertation addresses the fundamental research question: “What is the role of psychology in international environmental law” This dissertation has sought to achieve this by focusing on three primary objectives. First, it has aimed to bridge the gap between the academic disciplines of law and psychology, environmental law, and international law. Secondly, it has sought to provide deeper psychological insights into how states navigate laws concerning environmental harm that transcends international borders. Thirdly, this dissertation has endeavored to establish avenues for continued exploration of the psychological dimensions within the context of international environmental law.

To fulfill these three objectives, this dissertation has introduced a theory of the “psychology of international environmental law,” which is situated at the intersection of law, psychology, and IEL. This theory posits that international environmental law, with its emphasis on transboundary governance and environmental impact, gives rise to specific psychological phenomena that influence decision-making processes. Key factors—such as voluntariness, fragmentation, and political borders in transboundary governance (international law), alongside diffusion, complexity, and interaction with non-human entities in environmental impacts (environmental law)—play pivotal roles in shaping the psychological dynamics within international environmental law. By addressing these dynamics, the theory aims to enrich the academic discourse and offer alternative perspectives to stakeholders in international environmental law practice.

More, this dissertation has investigated potential benefits of integrating the psychology of IEL into the theory-building process to enhance comprehension of state behavior and to anticipate future implications and applications for IEL. It has examined key aspects such as the psychology

of treaty formation, negotiation of agreements, and compliance with legal obligations, which are central to IEL. To this end, this dissertation examined three specific case studies: the establishment of the 1946 Whaling Convention and Japan's subsequent breach of the convention, the WTO EGA negotiation and its failure, and Taiwan's unilateral compliance with global climate change frameworks. In each case, psychological insights into IEL offered valuable applied observations on state motivation, emotions, and social contexts, surpassing traditional economic interest perspectives, like rational choice theory, and providing a deeper understanding of state actions within the context of IEL.

Despite its contributions, this dissertation acknowledges two significant limitations. First, while it draws on extensive empirical data, the problem of generalizability remains unresolved within the science of psychology. Furthermore, the proposed theory, the psychology of IEL, represents an initial framework and may require ongoing refinement and development through application and debate. However, these limitations highlight opportunities for future research and application.

This dissertation holds substantial implications for policymakers and scholars. Psychological observations can inform policymaking by enhancing understanding of how individual cognition, emotions, and social contexts interact within IEL frameworks. This psychological approach facilitates the establishment and attainment of effective standards and promotes state compliance. The psychological approach offers prospective adaptations for future law-making processes by comprehending the preferences and biases that governments may experience under IEL. This dissertation also offers useful insights for academics: Examining psychology from a structural perspective provides a thorough comprehension of the subject and establishes a basis for future research endeavors in psychology and law, including data collection,

simulations, and broader implications. By employing an interdisciplinary approach that combines the fields of law and psychology, scholars can explore new avenues of international legal research that will shape future discussions.

Two potential avenues for future research are envisioned. First, this dissertation lays a theoretical foundation for subsequent empirical inquiries, establishing a connection between psychology and international environmental law. Further research could delve into the theory underpinning this dissertation. Second, this dissertation provides supplementary and alternative examinations of state conduct in the realm of international environmental law. This discussion remains open-ended, with the possibility of future investigations examining state behaviors through the lenses of sociology, anthropology, or neuroscience. Cross-disciplinary discussions will enrich the study of law.

Although still in its early stages, the emerging psychology approach to IEL enriches the academic discourse by facilitating a more thorough comprehension of human behavior. The significance of employing a psychological approach in this field should not be undervalued, especially when it comes to considering the extensive empirical findings from diverse subfields of psychology that have already contributed to the ongoing discourse. Advanced psychological research can deepen our understanding of the relationship between human behavior, decision-making process, and international environmental laws.

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