## Waivers

### 2NC – Condo [New Aff]

#### Reading condo with a new aff is a joke – we get infinite condo if they don’t disclose the aff and we only read \_\_ so there’s no abuse

#### A) It’s an RVI for block time skew–turns education because there’s less time to engage the aff—and every reason condo is bad

#### B) Condo is good in this instance because it’s the only way to test the aff—their standards are solved by our CPs not applying to their well-prepped advantages.

#### C) Critical thinking - forces strategic 2AC choices and adaptation to information.

#### Reject the argument – add-ons, perms, and 2AC choice check abuse.

## Unjust Enrichment

### Overview---2NC

#### 2. Turns every impact through cascading, complex system failure.

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1. Introduction

Despite recent social protests and climate emergency declarations, efforts to mitigate climate change to date are insufficient.1 Greenhouse gas (GHG) emissions continue to rise and global warming above 3 °C is increasingly likely this century.2 There is emerging evidence of amplifying feedbacks accelerating3 and dampening feedbacks decelerating.4 These feedbacks exacerbate the possibility of runaway global warming,5 estimated at 8 °C or greater by 2100.6 Such temperature increases translate to a range of real dangers,7 shifting the narrow climate niche within which humans have resided for millennia.8

Looking beyond the framing of “global warming”, there is concern that the effects of ﻿ climate change may pose an ﻿ existential risk to humanity, one that threatens “societal collapse” or even extinction.9 Understanding these worst-case scenarios is essential for good risk management.10 Improving awareness of potential pathways through which ﻿ climate change poses such a risk can help inform decision- making about interventions.11 Considering societal impacts that are more tangible for individuals, businesses and governments,12 and better ﻿ aligned with conventional risk priorities,13 may facilitate more effective action to mitigate ﻿ climate change.14

A number of pathways through which ﻿ climate change could cause societal collapse have been identified, one being via food insecurity.15 Climate change is predicted to undermine agricultural systems and disrupt food supply,16 which may lead to economic shocks, socio- political instability as well as starvation, migration and conflict at local through to global scale.17 While the climate science underpinning global warming estimates is well established,18 albeit subject to sensitivities, the uncertainties increase significantly when we start to consider these tangible societal impacts given the complex relationships involved.19 Our understanding of worst-case scenarios, and particularly of empirical evidence addressing the causal pathways through which ﻿ climate change may cause societal collapse, is underdeveloped.20

In this chapter we aim to identify and structure an empirical evidence base of the relationships between ﻿ climate change, food insecurity and societal collapse. We do this using Causal Loop Diagrams (CLD), a system dynamics approach that is useful for visualising the relationships between variables in a complex system.21 This chapter is organised as follows. In Section 2, we review the societal collapse and ﻿ existential risk literature to refine the aim introduced above. In Section 3, we develop an original methodology to establish a new empirical evidence base and create a novel-format CLD of causal pathways between ﻿ climate change and societal collapse. In Section 4, we present and discuss the results from the application of this methodology to the ﻿ climate change, food insecurity and societal collapse causal pathway of interest. We conclude, in Section 5, by identifying avenues of future work that may build upon this chapter.

2. Literature Review

To refine the aim of this chapter, introduced in Section 1, our review examines whether there is historical evidence of ﻿ climate change as a mechanism of societal collapse and to what extent have causal pathways been documented to inform our understanding of ﻿ climate change as an existential threat to contemporary society.

We first define the terms “﻿ existential risk” and “societal collapse” as used in this chapter. Adopting ﻿ Ord’s definition, “an ﻿ existential risk is a risk that threatens the destruction of humanity’s long-term potential” be it incomplete destruction, such as societal collapse, or complete destruction, such as extinction.22 Adopting Kemp’s definition, societal collapse is an “enduring loss of ﻿ population, identity [and/or institutional] complexity”;23 it may be abrupt or gradual, but is typically rapid because it is notably transformative, and may be experienced by a local, national or the global community of people. Fig. 1 presents a conceptual model of societal collapse, synthesised from the broader literature, to provide further contextual definition.

[FIGURE 1 OMITTED]

The rise and fall of civilisations has been documented since the earliest recordings of history and is increasingly studied to inform our understanding of societal collapse.24 We consider two types of historical studies that provide insight into ﻿ climate change as a mechanism of societal collapse in the past. We note that other mechanisms are also discussed in the literature, and there is debate about the role of different mechanisms in particular societal collapse events.

The first type of historical study empirically investigates an individual societal collapse event using primary sources, including anthropological, archaeological and paleontological data. Based on such data analysis, natural ﻿ climate change has been asserted as a mechanism of societal collapse in many of these case studies, as established by de Menocal25 and Weiss and Bradley.26 For example, Hodell et al.,27 Haug et al.,28 and Medina-Elizalde and Rohling29 analyse paleoclimate data alongside the archaeological record to show that drought conditions, driven by ﻿ climate change likely due to solar forcing, contributed to the collapse of the Classic Maya civilisation of Mesoamerica in ~8–10th century CE. Weiss et al.,30 Cullen et al.,31 and Cookson et al.32 show that regional aridity, driven by ﻿ climate change likely due to ﻿ volcanic forcing, contributed to the collapse of multiple societies across Mesopotamia, including the Akkadian Empire in ~22nd century BCE. Similarly, natural ﻿ climate change has been implicated in the collapse of multiple Late Bronze Age societies around the Mediterranean,33 including Mycenaean Kingdoms in ~12th century BCE,34 the Harappan Civilization of South Asia in ~19th century BCE,35 the Angkor Empire of Southeast Asia in ~15th century CE,36 multiple Chinese Dynasties37 and civilisations along the Silk Road38 during the previous millennium, the Norse Vikings of Greenland in ~16th century AD,39 and the Tiwanaku Empire of Pre- Columbian South America in ~10th century CE40 amongst others.

This first type of studies establishes precedence of natural ﻿ climate change as a mechanism of societal collapse throughout history, demonstrating the risk that anthropogenic ﻿ climate change similarly poses to contemporary society. However, the events examined occurred more than 100 years ago, with most dating back to ancient history, when societies were relatively isolated. Because these case studies pre- date contemporary society, they do not provide empirical evidence of anthropogenic ﻿ climate change in context of today’s highly interconnected society.41

Statistical evaluation of the frequency and significance of natural ﻿ climate change relative to other mechanisms of societal collapse identified across these case studies has not yet been established within the literature. However, the second type of historical study does qualitatively examine collections of these case studies to develop theories of predominant modes of societal collapse. Three major modes are observed, as follows.

Fagan42 and McMichael43 focus on natural impact on the human system across multiple civilisations, concluding that natural ﻿ climate change is predominant having significantly influenced human existence throughout history. Over the past 12,000 years, the natural and human systems developed within the stable climate niche of the Holocene Epoch.44 The associated geographic endowments governed human transition from band societies based on foraging to complex societies based on agriculture. Unfavourable subtle (e.g. weather variations) and drastic (e.g. natural disasters) shifts in climate influenced the collapse of complex societies either by direct loss of life or indirectly via resource insecurity. In particular, in this mode, typically, the loss of agriculture led to de-﻿ population via famine, migration or conflict due to food insecurity.

Ponting,45 Wright,46 and Diamond47 focus on human impact on the natural system across multiple civilisations, concluding that human overpopulation and overexploitation relative to the carrying capacity of the environment is predominant. Societal collapse via environmental degradation often involved unsustainable agriculture, exacerbated by natural ﻿ climate change, leading to de-﻿ population as well as institutional breakdown via loss of economic stability and socio-political dysfunction due to magnified inequality. This mode aligns with early “Malthusian ﻿ catastrophe”,48 ”tragedy of the commons”,49 and “overshoot-and- collapse”50 theories.

In their 12-volume magnum opus exploring the rise and fall of 28 civilizations, Toynbee concludes that “great civilizations are not murdered [but rather] they take their own lives.”51 Building on this, Tainter,52 Acemoglu and Robinson,53 and Johnson54 focus on human impact on the human system across multiple civilisations, concluding that societal complexity in relation to problem-solving inability (e.g. environmental degradation) and institutional dysfunction (e.g. inequality and oligarchy internally, trade ally and hostile neighbour relations externally) is predominant. As a society becomes more complex, it reaches a point beyond which “continued investment in complexity as a problem-solving strategy yields a declining marginal return” and it will be at risk of collapsing under its own weight via institutional breakdown and de-﻿ population.55 This mode aligns with ”energy returned on energy invested” theory,56 applied to explore societal collapse by Homer-Dixon.57

Diamond,58 Turchin,59 and Schwartz and Nichols60 examine why some civilisations have been able to thrive or recover, rather than collapse. They similarly conclude that societies have flourished due to combinations of favourable geographic endowment, managing their existence within the carrying capacity of the natural system, and co-operative action in problem-solving.

This second type of studies highlights that societal collapse involves a complex nexus of factors and dynamically interlinked events. For instance, Gibbon details how all three of the modes, described in the preceding five paragraphs, contributed to the collapse of the ﻿ Roman Empire.61 These modes of societal collapse, although based on empirical evidence pre-dating contemporary society, describe key aspects of the anthropogenic ﻿ climate change problem faced today. While these studies describe causal pathways of relevance, to the best of our knowledge, no study has used CLDs to untangle the complexity and give structure to the dense information in this evidence base.

Across these historical studies, we observe no apparent temporal or spatial influence on the occurrence of societal collapse. Rather, societal collapse has been described as occurring in various forms, whether it be by known “white-swan” or surprise “black swan” events,62 in different geographic locations and times throughout history. Additionally, a quantitative statistical analysis by Arbesman shows that societal collapse has occurred randomly and independent of civilisation life- spans.63 These qualitative and quantitative observations highlight that any society may be susceptible to collapse, much in-line with the Red Queen Hypothesis of the Law of Extinction.

From these historical studies, we observe sets of secondary determinants for each of the primary determinants introduced in Fig. 1, which are defined in Fig. 2. Considering a geographically bounded society, emigration refers to any permanent departure of ﻿ population including both voluntary or forced migration, conflict mortality accounts for deaths directly arising from any form of domestic or international conflict (e.g. due to ﻿ war), and natural mortality accounts for deaths related to domestic environmental conditions (e.g. due to famine). The loss of socio-cultural norms, political structures or economic value accounts for that which notably transforms the identity and institutions of the society.

[FIGURE 2 OMITTED]

In addition to these historical studies, we consider the relatively nascent studies of existential risks (X-risks) that provide insight into how ﻿ climate change may trigger societal collapse in the future.

Comprehensive surveys of X-risks reveal mechanisms that could cause the collapse of contemporary society. Bostrom and Ćirković,65 ﻿ Rees,66 and Ord67 provide eminent scholarly treatment of the field, drawing from the academic literature. The World Economic Forum68 and Global Challenges Foundation69 produce global risk reports drawing from decision-makers and experts across intergovernmental and non-governmental organisations. These surveys establish that many historically observed mechanisms of societal collapse, including natural ﻿ climate change, remain applicable as X-risks today. However, the ﻿ state of existence of contemporary society has led to a different landscape in which these mechanisms apply, and to a number of unprecedented mechanisms, including anthropogenic ﻿ climate change. ﻿ Ehrlich and ﻿ Ehrlich70 and Häggström71 note that although increased complexity, such as globalisation and ﻿ technological advancement, can increase a society’s resilience and adaptability, it can also increase ﻿ vulnerability. For example, globalisation increases resilience to local agricultural production shocks through access to global markets; however, it also increases ﻿ vulnerability through ﻿ exposure to sudden reversal in connectivity, such as trade restrictions.72 Some geoengineering technologies, for example, may enable society to mitigate and adapt to ﻿ climate change; however, they may also increase ﻿ vulnerability to ﻿ termination shocks, where failure of the technology exposes society to sudden temperature increases.73 In this highly interconnected landscape, “synchronous”74 and ”cascading”75 failures create the potential for mechanisms and outcomes of societal collapse, once contained to a single localised civilisation, to rapidly spread across multiple nations and impact humanity on a global scale.

Works by Lynas,76 Wallace-Wells77 and Gowdy78 draw on the scientific ﻿ climate change literature to explore hypothetical futures under best- to worst-case scenarios. The scenarios consider the feedbacks within the natural system that could worsen, as well as the potential for humans to mitigate, anthropogenic ﻿ climate change. Shifts in average weather (e.g. temperature) and natural disasters (e.g. floods) affected by ﻿ climate change could impact human mortality directly. These two effects, coupled with sea level rise due to melting of ice caps, could indirectly impact human mortality via degradation of the natural world system (e.g. land quality) and the human world system (e.g. ﻿ infrastructure failures) resulting in resource and service insecurity. This insecurity could impact institutional stability, resulting in economic loss, political dysfunction and social unrest, as well as migration and conflict. The hypothetical outcomes for contemporary society against the threat of anthropogenic ﻿ climate change range from dystopian (collapse) to utopian (recovery).

These futures studies identify endpoints of different causal pathways between anthropogenic ﻿ climate change effects and potential impacts on the human world system, with the latter reflecting key determinants of societal collapse observed in the historical studies. Scholars have made limited in-roads to empirically investigating the top-level relationships between some of these endpoints using recent datasets. The direct links between ﻿ climate change and the endpoint impacts of mortality, conflict and migration are, respectively, examined by Mora et al.,79 Hsiang et al.80 and Hauer et al.81 The feedback between migration and conflict driven by climate change is examined by Abel et al.82 The direct links between ﻿ climate change and the endpoint impacts of economic loss, political instability and shifts in cultural norms are examined by Burke et al.,83 Sofuoğlu and Ay,84 and Adger et al.85 respectively. However, the complex bottom-level links between and surrounding these endpoints are generally ill understood,86 and the strength of empirical evidence is poorly documented from a systems science perspective.87 To the best of our knowledge, no study has empirically examined how the impacts of ﻿ climate change could explicitly translate into societal collapse for contemporary society. We do not have a clear picture of ﻿ climate change as a ﻿ systemic risk to our globalised society, particularly at spatial scales accounting for the heterogeneity of individual identity, business governance and policymaking across nations, and international exchanges. This limits our ability to understand feedbacks, identify intervention points, develop quantitative models and inform strategies to minimise the risk of societal collapse occurring in the future.88

Given the insights from this review, we refine the aim of this chapter as follows. Firstly, the empirical evidence base should specifically address contemporary society. Secondly, the CLD should be constructed at a scale and granularity that addresses the heterogenous characteristics of nations and international interactions. The refined aim of this chapter is thus to identify an empirical evidence base of ﻿ climate change, food insecurity and societal collapse in contemporary society and structure the evidence base with a CLD defined at global scale and national granularity.

3. Methodology

A two-stage framework, consisting of five steps, was developed to achieve the aim of this chapter. For each step, below, we first introduce it generically and then describe its application to our specific analysis of the ﻿ climate change, food insecurity and societal collapse causal pathway.

3.1. Stage 1: Establishing an empirical evidence base of societal collapse in contemporary society

Step I deploys societal collapse proxies via a key word search to identify “evidence points”, which in this instance may be considered data points, in the form of publications that empirically examine the causal pathway of interest in contemporary society.

The determinants defined in Fig. 2 provide these societal collapse proxies to establish the new empirical evidence base in lieu of historical societal collapse events pre-dating contemporary society. The ﻿ population loss set are straightforward to isolate, consistent to measure across nations and describe tangible consequences. The institutional breakdown set are relatively less so. Thus, the societal collapse proxies adopted in this study were natural mortality (i.e. starvation, with respect to food insecurity), conflict mortality and emigration; subsequent studies could use the institutional breakdown set. Key words were selected based on terminology of ﻿ climate change, food insecurity and the societal collapse proxies. Peer-reviewed journal articles were chosen as the form of evidence point in this study; subsequent studies could use other publications, such as books and reports.

The keyword search was performed in Scopus. A record of the search is contained in the Supplementary Information (A.). Approximately 3,000 publications were reviewed by reading the title, abstract and main body as needed. Evidence points were selected based on satisfaction of the following criteria: the publication (a) is a peer-reviewed, English- language, journal article; (b) uses empirical, data driven methods; (c) examines the period from 1990 to present (2019), representative of contemporary society; and (d) primarily examines the causal pathway of interest. We made an exception to (a) to include the most recent Limits to Growth book,89 which was not itself a search result but documents the World3 model that was identified in the search results. We note that (b) precluded selection of review or essay-style publications; however, we found that these were often discussed in the literature review of selected evidence points, so were, nonetheless, accounted for indirectly.

This step resulted in a new empirical evidence base consisting of 41 evidence points, which are summarised in Fig. 4.

Step II defines a custom colour-coded typology for the new empirical evidence base. This typology is used in Stage 2, to construct a final CLD (f-CLD) in a novel format showing the spread of the evidence base across the system.

In this study, we were interested in the methodological spread as this provides information on data that may be useful for future studies. Four methodological categories were identified in the new empirical evidence base. Each evidence point was classified into one of these categories and assigned a colour coding, namely: quantitative ﻿ complex systems model — red; statistical analysis of quantitative dataset — blue; collection / analysis of qualitative interview / survey data — green; quantitative data-led case study / scenario — yellow.

The resulting typology of the new empirical evidence base is shown in Fig. 4.

3.2. Stage 2: Constructing a novel-format causal loop diagram from the empirical evidence base

Step III involves creating an individual CLD (i-CLD) for each evidence point to clearly structure the complex causal relationships examined. These i-CLDs provide the building blocks from which to construct the f-CLD in Step IV.

[FIGURE 3 REMOVED]

The process to create an i-CLD is as follows. The corresponding evidence point was examined in its entirety to identify and record key information in the form of variables (nodes), links (arrowed lines) and relationship notation (positive or negative). Key information derived from the original data-driven content, i.e. the main analysis, of the evidence point was colour coded in the i-CLD according to the typology classification established in Step II. Any relationships hypothesised but not supported by the main analysis were coloured grey. Key information derived from other content, i.e. the literature review, of the evidence point was coloured black. The scale and granularity of the i-CLD was recorded as detailed in the evidence point. This process was repeated for each evidence point in isolation until a complete set of i-CLDs was produced for the new empirical evidence base.

All 41 i-CLDs created in this study are contained in the Supplementary Information (B.). One of the i-CLDs is shown in Fig. 3 as an example. Step IV reconciles the set of i-CLDs into a standardised format in order to construct the f-CLD of the system of interest at the desired scale and granularity.

The standardisation process has two aspects. One aspect is related to component (variables and links) definition, necessary to maximise clarity of the f-CLD while covering all information contained in the evidence base. This addresses the typical challenge of CLDs becoming dense and overcomplicated, which decreases their ﻿ utility. The other aspect is related to level of aggregation, necessary to ensure the f-CLD conveys information at the intended scale and granularity. The standardisation is an iterative process, as follows.

The ~950 variables from the set of 41 i-CLDs were recorded on a blank worksheet for the f-CLD, without links between them. A clustering approach was used to reconcile these variables into like groups. For each group, an overarching major node was isolated and the i-CLD variables in the group were virtually deposited into a matrix for that major node. For example, drought, sea level rise and crop disease were some of the i-CLD variables clustered into an environmental risk factors f-CLD major node matrix. The f-CLD major nodes were defined at a level of aggregation representative of a nation. Doing so effectively scaled down any global or regional aggregation, and scaled up any sub-national or local aggregation, in the i-CLD variables. For example, household food imports was an i-CLD variable of local aggregation that was scaled up to national food imports (trade) in the f-CLD.

The ~1150 links from the set of 41 i-CLDs were reconciled into arrowed lines between the major nodes in the f-CLD. This sometimes- required interpretation of implied causality in the i-CLD relationships in order to route them across the major nodes in the f-CLD. For example, where an i-CLD showed a direct link from international food price to conflict variables, this was routed using arrowed lines from international food price to national food price to food ﻿ accessibility to food insecurity and finally to conflict major nodes defined in the f-CLD. Where there was a discrepancy between relationship descriptions, the relationship with the most supporting i-CLDs was adopted.

The interim f-CLD produced at the end of each standardisation iteration was examined to determine whether the major node definition could be refined to maximise clarity. For example, in one iteration water and land were defined as separate major nodes, but examination determined that each had the same arrowed lines to other major nodes; therefore, another iteration was undertaken with water and land now clustered under a single natural resources major node in order to minimise redundant arrowed lines. This process was iterated several times until an f-CLD had been constructed at an appropriate level of detail for this study. Additionally, relevant literature reviewed in Section 290 was cross- referenced, but not included as evidence points, to ensure comprehensive coverage of key relationships in the f-CLD.

The standard-format f-CLD, consisting of uncoloured and unweighted components, resulting at the end of this step is contained in the Supplementary Information (C.).

Step V maps each i-CLD to the f-CLD using a weighted (line thickness) typology (colour-coded) approach. This visually documents the spread of the evidence base across the system described by the f-CLD.

The process to map an i-CLD to the f-CLD is as follows. Each variable (node) of the i-CLD was assigned to its corresponding major node(s) in the f-CLD. Each link (arrowed line) of the i-CLD was assigned to a corresponding route along the arrowed lines in the f-CLD. Each time an arrowed line in the f-CLD had an i-CLD link assigned to it, an incremental weighting of one-unit line thickness in the corresponding typology colour-coding of the i-CLD link was added to the f-CLD arrowed line. This process was repeated for each of the 41 i-CLDs until all had been mapped to the f-CLD. A record of this process for each of the 41 i-CLDs is contained in the Supplementary Information (D.).

The novel-format f-CLD, consisting of colour-coded and weighted components, resulting at the end of this final step is presented in Fig. 5.

4. Results and Discussion

The new empirical evidence base and novel-format CLD of ﻿ climate change, food insecurity and societal collapse in contemporary society resulting from the application of our original methodology (Section 3) are discussed in turn below.

4.1. Empirical evidence base of climate change, food insecurity and societal collapse in contemporary society

The new empirical evidence base (Section 3, Step I), along with its colour-coded typology (Section 3, Step II), is presented in Fig. 4. It consists of 41 evidence points, of which 9 examine the natural mortality (i.e. starvation, with respect to food insecurity), 20 the conflict mortality and 12 the emigration societal collapse proxy, alongside other human and natural world system factors. We discuss three key aspects of the evidence base, namely temporal and spatial distribution, data-driven method distribution, and advantages of each data-driven methods, below.

The temporal scale and granularity of study varies across the evidence base; however, our methodology limited the possible scale of study to the period from 1990 to present, representative of contemporary society. Within this period, approximately half of the evidence points cover a scale of less than one decade and the other half a scale of greater than one decade. Approximately half of the evidence points conduct analyses at yearly granularity and the other half conduct analyses at granularity greater than one year, with only a few studies conducting analyses at monthly granularity. The spatial scale and granularity of study varies across the evidence base. Approximately one third of the evidence points investigate the system at a global scale, with the remaining two thirds focusing on regional or national scales, primarily in Africa as well as the Middle East and Asia. Approximately half of the evidence points analyse the causal pathway at sub-national granularity, with the other half primarily focusing on national-level granularity. This variation provided different coverage of the complex relationships within the system, which was informative for constructing our CLD.

The distribution of data-driven methods used across the evidence base is notably different for each societal collapse proxy. Evidence points for natural mortality mostly use collection/analysis of interview/ survey data. This is likely because the minimum daily food intake for human survival is well established;91 as such, statistical analysis of food and mortality data sets would not yield significantly new insights into thresholds whereas interviews/surveys can provide insight into an individual’s circumstances influencing this relationship. Evidence points for conflict mortality mostly use statistical analysis of existing datasets. This likely reflects the interest in rigorously curated conflict datasets, such as UCDP/PRIO,92 across the conflict and peace fields. Evidence points for emigration mostly use collection/analysis of interview/survey data, likely because this provides nuanced insight into an individual’s decision to migrate. It may also be due to data availability and quality challenges that limit quantitative statistical analyses, which are being addressed by groups such as the International Organization for Migration’s Global Migration Data Analysis Centre.93 Amongst these data challenges, it is important to recognise the issue of reconciling different types of voluntary and forced migration with causal drivers, given the complex social, economic and political factors at play; this challenge similarly applies to the other societal collapse proxies but is particularly noted in the migration studies. We observe from these studies that a food insecurity threshold for natural mortality is well established but thresholds for conflict mortality and emigration are not. Indeed, distinguishing causal drivers within datasets and defining quantitative thresholds for these determinants remains a ”grand challenge”.94

[FIGURE 4 REMOVED]

Each data-driven method offers different advantages. The ﻿ complex ﻿ systems models each describe “chunks” of the system at different scale and granularity. The models provide mathematical definition, are ﻿ calibrated to real-world data and enable quantitative simulation of key relationships in the system. The statistical analyses quantitatively examine relationships between a dependent variable and one or more independent variables within the system, which can be used as a mathematical basis for extending ﻿ modelling capabilities. The collection/ analysis of interview/survey data provides insight into qualitative aspects of human perspective and decision-making that quantitative data sets cannot provide directly. The data-led case study/scenarios combine quantitative data with qualitative expert interpretation to better understand global trends and ﻿ forecasts. These latter two methods can also be used to inform the development of ﻿ modelling capabilities, the scenarios analysed by such models and their application in decision- making processes. Collectively, these different data-driven methods can yield useful insights into the nuances of relationships in the system of interest.

4.2. Causal loop diagram of the climate change, food insecurity and societal collapse in contemporary society at global scale and national granularity

The main result of this chapter is the CLD (the f-CLD from Section 3, Step V), presented in Fig. 5. It structures the relationships between ﻿ climate change, food insecurity and societal collapse as described in our new empirical evidence base (presented in Fig. 4 and discussed in Section 4.1). We discuss three key aspects of the CLD, namely insights related to the spread of empirical evidence, the qualitative ﻿ complex system depicted, and quantitative ﻿ complex system ﻿ modelling, below, alongside consideration of well-established benefits and limitations of CLDs.

Our CLD is presented in a novel format that documents the spread of our empirical evidence base. We use line thickness and colour, respectively, to depict the density and type of the data-driven methods used by the empirical evidence points to analyse a given link between two variables.

Doing this aids comprehension of where existing work has been focused with respect to the ﻿ climate change, food insecurity and societal collapse causal pathway. It may also help with the identification of gaps in existing analyses. For example, we can see that the link between food insecurity and conflict has been investigated mostly by evidence points using statistical analyses (blue), whereas the links between food insecurity and migration, and food insecurity and natural mortality, have been investigated mostly by evidence points using interviews/surveys (green). This hints that it may be useful to investigate the former using quantitative statistics, and the latter using qualitative interviews/surveys, to gain further insights offered by the different data-driven methods as described in Section 4.1.

It is important to recognise that our CLD may show negligible density for important links or even be missing important variables and/or links, either because they have not yet been studied or because our key word search failed to identify evidence points that have studied them. For example, our study focused on the ﻿ climate change, food insecurity and societal collapse causal pathway, so the density of our empirical evidence is concentrated along links central to this pathway, whereas the links between peripheral variables in the system, such as between fertility and births, show a lower density of empirical evidence. Similarly, our use of the ﻿ population loss set of societal collapse proxies means that the evidence base details natural mortality, conflict mortality and emigration, whereas the institutional breakdown set are not detailed. In considering this issue, our methodology attempted to maximise the ﻿ rigour and transparency of our study by documenting the spread of our empirical evidence base to help make the reader aware of exactly how much and what type of evidence was supporting the CLD presented here.

Further, we can see that while empirical studies have linked ﻿ climate change via food insecurity to our societal collapse proxies of natural mortality, conflict mortality and emigration, we found no empirical studies linking these proxies to the explicit term of societal collapse. This was expected given the motivation of this study (Section 1) and is due to the fact that there are no contemporary events of societal collapse, under the same definition as those in the historical studies pre-dating contemporary society, that enable these links to be empirically studied.95

Having considered the spread of empirical evidence, we now consider the ﻿ complex system documented. A key benefit of CLDs is that they simply present a myriad of information in a single diagram; in doing so, CLDs enable comprehension of the structure and behaviour of ﻿ complex systems, including feedbacks, intervention points and far- reaching interdependencies.96 Our CLD visually depicts a system of 39 variables, 105 links and 32,000 feedback loops,97 integrating information from different fields including climate science, ﻿ food security, conflict, migration and health research.

Walking through the CLD at a high-level, we can see how ﻿ population growth and lifestyle emissions, influenced by institutional/demographic factors (e.g. emission reduction incentives), combine to directly drive ﻿ climate change. Similarly, they indirectly drive ﻿ climate change via consumer demand on food production, which produces emissions directly (e.g. ruminant livestock) and indirectly via industrial capital/ output (e.g. processing factories). The environmental risk factors (e.g. extreme weather events) of ﻿ climate change may cause losses of food production either directly (e.g. plant disease) or indirectly via agricultural input availability (e.g. loss of water source for irrigation). A country’s food availability is influenced by domestic food production and international food trade. Food ﻿ accessibility is influenced by its food price, which responds to domestic (e.g. cost of food production and distribution) and international (e.g. international food price) markets, and institutional/demographic factors (e.g. food subsidies). Food utilisation is influenced by ﻿ infrastructure/services (e.g. ﻿ education) and institutional/demographic factors (e.g. cultural traditions). Food insecurity is underpinned by these three pillars of food availability, food ﻿ accessibility and food utilisation. For a given country, food insecurity can drive natural mortality (i.e. starvation), conflict and migration, contributing to ﻿ population loss, as well as economic shocks and socio- political instability, contributing to institutional breakdown, which exacerbates the risk of societal collapse.

Beyond a given country suffering increased natural mortality, famines (i.e. food insecurity) can place pressure on international humanitarian efforts (i.e. institutional risk factors). Conflict may occur domestically or internationally and can feedback to exacerbate food insecurity and institutional fragility (i.e. institutional risk factors). Potential mass emigration can increase pressure on food availability, natural resources and ﻿ infrastructure/services in the destination nation, which can lead to socio- cultural tensions (i.e. institutional risk factors) that fuel conflict. Food insecurity can also directly contribute to institutional risk factors such as social unrest, political instability and economic inequality, which increase the risk of societal collapse due to institutional breakdown, that may also ﻿ cascade internationally. While already fragile ﻿ states are expected to be hit the worst directly, these insights reveal the indirect ramifications of ﻿ climate change on our globalised society,98 with serious consequences for humanity’s ”existential security”.99

While some of these relationships may appear obvious, it is the act of bringing this information, which may otherwise be siloed and thus preventing consideration of the full story, together in one place that is of value.100 In doing so, our CLD attempts to provide readers with the opportunity to explore the ﻿ climate change, food insecurity and societal collapse causal pathway, consider worst-case scenarios that we want to avoid, develop transformative narratives of “where we want to go” and think about interventions that may help us attain this desired future.101

It is important to appreciate that CLDs are only as good as their information inputs; our CLD documents relationships based on information portrayed in our empirical evidence base as well as our interpretation of that information. As such, there exist challenges and limitations.102 For instance, CLDs may mask variability of relationships in different contexts and locations, because they can only depict a single scale and granularity. The portrayal of explicit causality between variables in a CLD is a challenge as this can often work in both directions rather than one. CLDs can often become either too complicated or too simplified, which undermines their usefulness. In considering each of these issues, our original methodology attempted to maximise the ﻿ rigour and transparency of our study by first documenting the information in each evidence point with an i-CLD and then consistently applying, and recording, the iterative process of reconciling the variables and links from each i-CLD to construct the f-CLD at the selected global scale and national granularity. In doing so, we sought to enable the reader to be aware of the nuances of the different scales and granularity of information underpinning our CLD, as well as our process of carefully reconciling causality, over 950 variables to 39 variables and 1150 links to 105 links to maximise the information conveyed while balancing readability.

It is also important to note that, due to their qualitative and static ﻿ nature, CLDs do not enable us to comprehend the dynamics of the system, including nonlinear and emergent behaviour, non-intuitive quantitative results and time delays.103 Complex systems models, although with their own challenges and limitations,104 provide the opportunity to quantitatively analyse the dynamics of a system and gain insights into the potentially far-reaching impacts of our decisions.105 However, ﻿ complex ﻿ systems models that explicitly examine societal collapse in contemporary society are underdeveloped. The World3 system dynamics model106 — an evidence point in this study (refer to Supplementary Information D).107 — is the eminent model of relevance, with only a limited number of studies building on it. World3 examines the potential for “overshoot-and-collapse” given ﻿ population and industrial growth within the finite carrying capacity of the natural world system, implicitly accounting for ﻿ climate change and explicitly accounting for food availability.

The information contained in our CLD and empirical evidence base may be useful in identifying and informing opportunities to improve these existing ﻿ complex systems ﻿ modelling capabilities for ﻿ climate change, food insecurity and societal collapse scenarios. For example, our CLD highlights important factors at global scale and national granularity that World3 does not incorporate because it is defined at global scale and granularity.108 World3 does not distinguish heterogenous characteristics of nations, such as distribution of ﻿ population or geographic endowment of natural resources. It also does not account for international interactions, such as food trade, conflict and migration. Relatedly, World3 evaluates societal collapse only by natural mortality (defined by food availability, age and pollution) and does not include the other two ﻿ population loss secondary determinants, as noted in the previous sentence, nor the three institutional breakdown secondary determinants. While our empirical evidence base may provide useful direction to datasets, it is important to note that quantitatively defining these relationships, particularly thresholds as discussed in Section 4.1, remains a key challenge of developing ﻿ complex ﻿ systems models. Nonetheless, given that individuals associate with national identity, business governance and policy-making are concentrated at national level, and international interactions underpin the functioning of contemporary society it could be valuable to model societal collapse risk profiles of different nations to inform the prioritisation and development of intervention strategies.

[FIGURE 5 REMOVED]

5. Conclusions and Future Work

This chapter identified an empirical evidence base of ﻿ climate change, food insecurity and societal collapse in contemporary society and structured the evidence base using a novel-format CLD defined at global scale and national granularity.

Two types of future work could extend from the results of this chapter. Identification of gaps in the spread of evidence across the CLD may guide future data-driven efforts to examine these causal relationships and define thresholds. The CLD and evidence base may be used to develop quantitative ﻿ modelling capabilities, particularly by transforming the structure of World3 to account for heterogenous national characteristics and international interactions. Three types of future work could extend from the methodology and literature synthesis. The causal pathway examined in this chapter could be further detailed by re-applying the methodology using the institutional breakdown set of societal collapse proxies instead of the ﻿ population loss set. The methodology, using either set of societal collapse proxies, could be applied to detail other causal pathways between ﻿ climate change and societal collapse. The methodology, excluding the contemporary time- period limitation, could be applied to document the information in the historical studies identified in the literature review. Similarly, the methodology could be applied to construct CLDs at different scales and granularities.

It is hoped that this chapter has contributed to developing our understanding of the causal pathways through which ﻿ climate change poses an ﻿ existential risk to humanity and facilitates opportunities for future work.

[REFERENCES OMITTED]

[CHAPTER 14 BEGINS]

Highlights:

• In this short chapter the authors draw on several research strands and papers within CSER to offer a theoretical reflection on how to think about catastrophic climate change and what Existential Risk Studies can learn from climate change research.

• This is intended to build on the previous chapter, in which Catherine Richards, Richard Lupton, and Julian Allwood provide an empirical assessment of one highly concerning risk cascade involving climate change and highlight its potential contribution to global catastrophic and existential risk.

• Climate change is one of the most empirically well-studied risks and has deep links to pre-existing bodies of literature, such as disaster risk management, environmental studies, and food security.

• Drawing on these studies and more, the chapter reflects on how to frame research questions in existential risk, what causes catastrophic climate change to be neglected by climate and existential risk researchers alike, and how to incorporate assessments of response risk and co-benefits into thinking about catastrophic climate change.

This short chapter brings together a number of important ideas and draws readers attention to other extant bodies of literature. The relative value of ﻿ co-benefits approaches is discussed in other chapters in this volume, including Chapter 4, in more detail. The dangers of ﻿ response risks are further discussed in Chapter 2.

1. Asking the Wrong Questions for the Right Reasons

Within Existential Risk Studies it is common to hear people ask the question “is ﻿ climate change an ﻿ existential risk?”, and many who ask this question answer negatively, arguing that as a result ﻿ climate change is not an important topic of research within the field. However, whether it is answered affirmatively or not, this question is misguided. There are three reasons for thinking this. Firstly, it makes little sense on a probabilistic level; whether something will be a threat to our collective existence is not a binary matter, it is a question of likelihood. However, many researchers within Existential Risk Studies mistakenly conflict ﻿ existential risk with events that could be existential ﻿ catastrophes. Secondly, ﻿ climate change is not a single uniform process that will affect everyone in the same way; it is a set of diffuse impacts to different ﻿ exposed populations, interacting with different ﻿ vulnerabilities and ﻿ exposures, and activating different risk ﻿ cascades. As Richards et al. show, it will inevitably interact with a host of other threats (not only ﻿ food security and societal collapse, but even factors such as the explosivity of ﻿ volcanic eruptions or the emergence of zoonotic pathogens),1 and these can interact with one another to create reinforcing feedback loops or “global systems death spirals”.2 Finally, “﻿ existential risk” is too vague and arbitrary a concept for the question to ever be answered. All the definitions of ﻿ existential risk that have received the greatest public attention thus far, such as Toby ﻿ Ord’s, focused not in terms of an impact on humanity at any point in time but rather in terms of “the loss of long-term future value”;3 either referring to the author(s) particular vision of a high-tech intergalactic utopia, or a fuzzy undefined idea of “our potential”.4

Other authors have practised attribution substitution and sought to answer an easier question such as “will the direct impacts of ﻿ climate change make the Earth uninhabitable?” as a proxy for existential risk,5 or suggested agricultural impossibility as a proxy for ﻿ civilisational collapse at a given level of temperature rise.6 These are certainly more tractable questions, but they are also entirely different questions, and there is a danger in thinking that answering them is sufficient to assess the overall level of ﻿ climate risk.

We are better off reverting back to the common-sense definition of ﻿ existential risk as the risk to the existence of a given object, and specifying whether the object under threat is humanity as a whole (﻿ extinction risk), global industrial society (collapse risk), or something else entirely. We should be thinking of an overall level of risk emergent from a particular socio-ecological system, and how much ﻿ climate change influences this level.7 And the question we should be asking about this risk is what contribution, under certain scenarios, ﻿ climate change will make, bearing in mind that it will almost certainly be operating in tandem with many other drivers of risk.

Considering this revised question can also help to rectify a recurring problem in the ﻿ climate risk literature: using mean global temperature rise as the sole threat indicator. Authors and ﻿ activists alike have frequently made a direct link between the level of warming and the likelihood of global ﻿ catastrophe, with 4–6 °C being most frequently used as this terrible threshold.8 However, global surface temperature is only one of the ﻿ climate change induced factors we need to worry about. 3 °C of warming above pre-industrial levels could be entirely manageable if it occurs in a world of adaptive technologies, high levels of multilateral cooperation, wealth equality, trust in institutions, and the safe management of other ﻿ planetary boundaries. It could also be catastrophic in a world where other ﻿ planetary boundaries are transgressed, the international order is riven with conflict, lethal autonomous weapons are in mass production, and societies are scarred by inequality, low trust, and polarisation. Understanding the contribution of ﻿ climate change to Global Catastrophic Risk requires a more sophisticated approach which looks beyond the direct impacts of a given level of warming to think through fully formed climate scenarios. We believe that, when conceived of in this way, the risks associated with ﻿ climate change are more appreciable and it is far harder to argue that understanding them is unimportant; however, even if others disagree with this assessment, we still maintain that this is the right way to think about the problem.

2. Catastrophic Neglect

Given how poorly questions about catastrophic ﻿ climate change are often framed, it is hardly surprising that it has been a highly neglected subject of study, not only among ﻿ existential risk researchers but also among ﻿ climate change researchers. Even at the basic level of temperature rise scenarios, we give far more attention to studying the impacts of lower- end warming rather than high-end warming. Text-mining of IPCC reports shows that mentions of 3 °C and above is underrepresented relative to its likelihood (and impact),9 a finding that has been verified by both literature sampling and the reports of popular authors trying to summarise the climate risk science.10 If anything, this trend appears to have worsened over time with subsequent IPCC reports.111 The use of complex risk assessments to study climate scenarios has also been neglected: looking at compound hazards is already rare,12 let alone considering risk ﻿ cascades and integrated climate ﻿ catastrophe assessments. Yet catastrophic ﻿ climate change remains high on the public and political agenda, creating both a perception that this is a risk receiving far more attention than it is, and also an intellectual vacuum that is easily filled by poor quality research, ranging from speculative doom-mongering13 to overly simplistic neoclassical economic models.14

There are four key reasons for this oversight of extreme global ﻿ climate risk. First is international climate policy. The 2015 Paris Climate Agreement on Climate Change has channelled scientific attention toward the agreement’s goal of limiting warming to 2 °C above pre- industrial levels and pursuing efforts to stabilise it below 1.5 °C, as these are now the publicly stated goals of climate ﻿ negotiations (even if they are highly unlikely to actually be realised). Second, analysis of high-end warming scenarios and complex risk assessments are simply harder to do. The higher the warming gets, the more difficult it becomes to study, as these scenarios are more displaced for the current climatic niche. Moreover, complex ﻿ climate risk assessments involving multiple factors are far more challenging than a ﻿ hazard-centric analysis focusing on only the direct impacts of mean global temperature rise. Third, climate scholarship has had a strong incentive to “err on the side of least drama”.15 Climate change has long been the target of fossil-fuel industry campaigns to sow doubt, not just on attempts to assess ﻿ climate change’s catastrophic potential but even the fundamental science, and this creates incentives for conservative science that builds consensus and does not risk exploring divergent hypotheses.16 Finally, many fear that discussing extreme risk could cause people to dwell too much on worst case scenarios, breeding fatalism and paralysis. However, this concern is misplaced; meta-analyses over hopeful vs. fearful messaging are mixed,17 and in any case this is a false dichotomy. One of the most referenced pieces for those concerned about the paralytic effect of fear does show that hopeful messaging is more poignant than fear but also that “worry” is even more effective than hope.18 The difference between worry and fear is one of degrees; the latter could even dissipate into the former over time. Furthermore, research should not be a PR exercise aimed to sway the public, in open democracies we have a duty to do honest risk assessments combined with clear recommendations for what can be done.19

Of course, these factors are only compounded by the consensus procedures of the IPCC, which seeks to synthesise scientific evidence for political purposes but is still often held up as a neutral arbiter of climate science. While useful, these procedures tend to produce lowest common-denominator outcome, which is precisely what is not needed when exploring extreme risks.20 This is an important point of reflection for any future efforts to build similar bodies aimed at bringing scientific research to bear on the governance of other global risks.

3. The Risks and Rewards of Responding

Climate change is inherently tractable and we already have the technologies we need to stop creating it, albeit without the institutions to fairly distribute them with a sufficient level of urgency. However, responding to risks like ﻿ climate change can incur risks of its own. Indeed, the IPCC, in its risk concept notes to the sixth assessment report, does not just discuss the usual three determinants of risk, ﻿ hazard, ﻿ vulnerability, and exposure, but also identifies “﻿ response risks”.21 Others have suggested that response should be added to the classic list of determinants.22 In some cases, responses may be far worse than the initial perceived risk, that is, they are iatrogenic: the treatment is worse than the disease.

Existential risk is especially prone to ﻿ response risks due to its scale, severity, and often speculative ﻿ nature. For instance, at the extreme a speculative fear of dispersed ﻿ weapons of mass destruction could justify a mass surveillance state.23 In general, there is always the potential for concerns over global risk to justify a Stomp Reflex — the abuse of emergency powers which inappropriately empower those atop a hierarchy and shield them from scrutiny. 24 This is also true for climate change

Reacting to ﻿ climate change could lead to emergency responses, such as ﻿ stratospheric aerosol injection (﻿ SAI), in an attempt to manipulate the quantity of solar radiation hitting the earth and thus counter some of the impacts of ﻿ climate change. Existing data on the direct impacts of ﻿ SAI and its contribution to ﻿ systemic risk or triggering other ﻿ hazards is sparse. Preliminary analysis suggests that the greatest problem is the ﻿ latent risks of “﻿ termination shock”. If a calamity such as a nuclear ﻿ war deactivates the system for a prolonged time, then this could significantly accelerate warming. Hence ﻿ SAI shifts the ﻿ risk distribution by likely lowering the level of risk in an average scenario but fattening the tail or “worst-case” scenarios depending on how ﻿ SAI is deployed, to what degree it is used, and what geopolitical and ecological world it is dispersed into.25 On the other hand, there are also frequently neglected ﻿ co-benefits of climate mitigation policies, such as the public health benefits of eliminating coal smoke and other pollutants from our air.26

Such problems of ﻿ response risk are perhaps the most neglected. Yet they are precisely what the study of ﻿ existential risk needs to grapple with. This could include by using robust decision-making procedures, such as the minimax principle, to aid in selecting policy options under ﻿ uncertainty or using ﻿ deliberative democratic processes to combine ﻿ diverse perspectives and co-create effective policy responses.

#### 3. Resource scarcity escalates a litany of nuclear dyads.

Michael Klare 20, Five College professor emeritus, peace and world security studies, Hampshire College; Ph.D., Graduate School of the Union Institute, "How Rising Temperatures Increase the Likelihood of Nuclear War," The Nation, 01/13/2020, https://www.thenation.com/article/archive/nuclear-defense-climate-change/

Climbing world temperatures and rising sea levels will diminish the supply of food and water in many resource-deprived areas, increasing the risk of widespread starvation, social unrest, and human flight. Global corn production, for example, is projected to fall by as much as 14 percent in a 2°C warmer world, according to research cited in a 2018 special report by the UN’s Intergovernmental Panel on Climate Change (IPCC). Food scarcity and crop failures risk pushing hundreds of millions of people into overcrowded cities, where the likelihood of pandemics, ethnic strife, and severe storm damage is bound to increase. All of this will impose an immense burden on human institutions. Some states may collapse or break up into a collection of warring chiefdoms—all fighting over sources of water and other vital resources.

A similar momentum is now evident in the emerging nuclear arms race, with all three major powers—China, Russia, and the United States—rushing to deploy a host of new munitions. This dangerous process commenced a decade ago, when Russian and Chinese leaders sought improvements to their nuclear arsenals and President Barack Obama, in order to secure Senate approval of the New Strategic Arms Reduction Treaty of 2010, agreed to initial funding for the modernization of all three legs of America’s strategic triad, which encompasses submarines, intercontinental ballistic missiles, and bombers. (New START, which mandated significant reductions in US and Russian arsenals, will expire in February 2021 unless renewed by the two countries.) Although Obama initiated the modernization of the nuclear triad, the Trump administration has sought funds to proceed with their full-scale production, at an estimated initial installment of $500 billion over 10 years.

Even during the initial modernization program of the Obama era, Russian and Chinese leaders were sufficiently alarmed to hasten their own nuclear acquisitions. Both countries were already in the process of modernizing their stockpiles—Russia to replace Cold War–era systems that had become unreliable, China to provide its relatively small arsenal with enhanced capabilities. Trump’s decision to acquire a whole new suite of ICBMs, nuclear-armed submarines, and bombers has added momentum to these efforts. And with all three major powers upgrading their arsenals, the other nuclear-weapon states—led by India, Pakistan, and North Korea—have been expanding their stockpiles as well. Moreover, with Trump’s recent decision to abandon the Intermediate-Range Nuclear Forces (INF) Treaty, all major powers are developing missile delivery systems for a regional nuclear war such as might erupt in Europe, South Asia, or the western Pacific.

All things being equal, rising temperatures will increase the likelihood of nuclear war, largely because climate change will heighten the risk of social stress, the decay of nation-states, and armed violence in general, as I argue in my new book, All Hell Breaking Loose. As food and water supplies dwindle and governments come under ever-increasing pressure to meet the vital needs of their populations, disputes over critical resources are likely to become more heated and violent, whether the parties involved have nuclear arms or not. But this danger is compounded by the possibility that several nuclear-armed powers—notably India, Pakistan, and China—will break apart as a result of climate change and accompanying battles over disputed supplies of water.

Together, these three countries are projected by the UN Population Division to number approximately 3.4 billion people in 2050, or 34 percent of the world’s population. Yet they possess a much smaller share of the world’s freshwater supplies, and climate change is destined to reduce what they have even further. Warmer temperatures are also expected to diminish crop yields in these countries, adding to the desperation of farmers and very likely resulting in widespread ethnic strife and population displacement. Under these circumstances, climate-related internal turmoil would increase the risk of nuclear war in two ways: by enabling the capture of nuclear arms by rogue elements of the military and their possible use against perceived enemies and by inciting wars between these states over vital supplies of water and other critical resources.

The risk to Pakistan from climate change is thought to be particularly acute. A large part of the population is still engaged in agriculture, and much of the best land—along with access to water—is controlled by wealthy landowners (who also dominate national politics). Water scarcity and mismanagement is a perennial challenge, and climate change is bound to make the problem worse. Climate and Social Stress: Implications for Security Analysis, a 2013 report by the National Research Council for the US intelligence community, highlights the danger of chaos and conflict in that country as global warming advances. Pakistan, the report notes, is expected to suffer from inadequate water supplies during the dry season and severe flooding during the monsoon—outcomes that will devastate its agriculture and amplify the poverty and unrest already afflicting much of the country. “The Pakistan case,” the report reads, “illustrates how a highly stressed environmental system on which a tense society depends can be a source of political instability and how that source can intensify when climate events put increased stress on the system.” Thus, as global temperatures rise and agriculture declines, Pakistan could shatter along ethnic, class, and religious lines, precisely the scenario that might trigger the sort of intervention anticipated by the US Joint Special Operations Command.

Assuming that Pakistan remains intact, another great danger arising from increasing world temperatures is a conflict between it and India or between China and India over access to shared river systems. Whatever their differences, Pakistan and western India are forced by geography to share a single river system, the Indus, for much of their water requirements. Likewise, western China and eastern India also share a river, the Brahmaputra, for their vital water needs. The Indus and the Brahmaputra obtain much of their flow from periods of heavy precipitation; they also depend on meltwater from Himalayan glaciers, and these are at risk of melting because of rising temperatures. According to the IPCC, the Himalayan glaciers could lose as much as 29 percent of their total mass by 2035 and 78 percent by 2100. This would produce periodic flooding as the ice melts but would eventually result in long periods of negligible flow, with calamitous consequences for downstream agriculture. The widespread starvation and chaos that could result would prove daunting to all the governments involved and make any water-related disputes between them a potential flash point for escalation.

As in Pakistan, water supply has always played a pivotal role in the social and economic life of China and India, with both countries highly dependent on a few major river systems for civic and agricultural purposes. Excessive rainfall can lead to catastrophic flooding, and prolonged drought has often led to widespread famine and mass starvation. In such a setting, water management has always been a prime responsibility of government—and a failure to fulfill this function effectively has often resulted in civil unrest. Climate change is bound to increase this danger by causing prolonged water shortages interspersed with severe flooding. This has prompted leaders of both countries to build ever more dams on all key rivers.

India, as the upstream power on several tributaries of the Indus, and China, as the upstream power on the Brahmaputra, have considered damming these rivers and diverting their waters for exclusive national use, thereby diminishing the flow to downstream users. Three of the Indus’s principal tributaries, the Jhelum, Chenab, and Ravi rivers, flow through Indian-controlled Kashmir (now in total lockdown, with government forces suppressing all public functions). It’s possible that India seeks full control of Kashmir in order to dam the tributaries there and divert their waters from Pakistan—a move that could easily trigger a war if it occurs at a time of severe food and water stress and one that would very likely invite the use of nuclear weapons, given Pakistan’s attitude toward them.

The situation regarding the Brahmaputra could prove equally precarious. China has already installed one dam on the river, the Zangmu Dam in Tibet, and has announced plans for several more. Some Chinese hydrologists have proposed the construction of canals linking the Brahmaputra to more northerly rivers in China, allowing the diversion of its waters to drought-stricken areas of the heavily populated northeast. These plans have yet to come to fruition, but as global warming increases water scarcity across northern China, Beijing might proceed with the idea. “If China was determined to move forward with such a scheme,” the US National Intelligence Council warned in 2009, “it could become a major element in pushing China and India towards an adversarial rather than simply a competitive relationship.”

Severe water scarcity in northern China could prompt yet another move with nuclear implications: an attempted annexation by China of largely uninhabited but water-rich areas of Russian Siberia. Thousands of Chinese farmers and merchants have already taken up residence in eastern Siberia, and some commentators have spoken of a time when climate change prompts a formal Chinese takeover of those areas—which would almost certainly prompt fierce Russian resistance and the possible use of nuclear weapons.

In the Arctic, global warming is producing a wholly different sort of peril: geopolitical competition and conflict made possible by the melting of the polar ice cap. Before long, the Arctic ice cap is expected to disappear in summertime and to shrink noticeably in the winter, making the region more attractive for resource extraction. According to the US Geological Survey, an estimated 30 percent of the world’s remaining undiscovered natural gas is above the Arctic Circle; vast reserves of iron ore, uranium, and rare earth minerals are also thought to be buried there. These resources, along with the appeal of faster commercial shipping routes linking Europe and Asia, have induced all the major powers, including China, to establish or expand operations in the region. Russia has rehabilitated numerous Arctic bases abandoned after the Cold War and built others; the United States has done likewise, modernizing its radar installation at Thule in Greenland, reoccupying an airfield at Keflavík in Iceland, and establishing bases in northern Norway.

Increased economic and military competition in the Arctic has significant nuclear implications, as numerous weapons are deployed there and geography lends it a key role in many nuclear scenarios. Most of Russia’s missile-carrying submarines are based near Murmansk, on the Barents Sea (an offshoot of the Arctic Ocean), and many of its nuclear-armed bombers are also at bases in the region to take advantage of the short polar route to North America. As a counterweight, the Pentagon has deployed additional subs and antisubmarine aircraft near the Barents Sea and interceptor aircraft in Alaska, followed by further measures by Moscow. “I do not want to stoke any fears here,” Russian President Vladimir Putin declared in June 2017, “but experts are aware that US nuclear submarines remain on duty in northern Norway…. We must protect [Russia’s] shore accordingly.”

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#### 1. Collective bargaining rights are legal.

Magic M. Wade 15, Associate Professor and Director of School of Politics and International Affairs at University of Illinois Springfield, PhD in Political Science from University of Minnesota, "Labor's Last Stand? The Great Recession and Public Sector Collective Bargaining Reform in the American States," Dissertation, University of Minnesota, 08/01/2015, https://conservancy.umn.edu/server/api/core/bitstreams/0faf5ad1-fec5-4cfc-873d-986d91505a3c/content

To shed light on this nationwide phenomenon, I have compiled an extensive original data set containing bill content and status information for these and similar reforms introduced across state legislatures between 2007-2014. This data was obtained utilizing a combination of state legislative archives key word searches and the National Conference of State Legislatures Collective Bargaining database. With this information I categorized individual bills according to their purpose in restructuring labor relations. So, bills seeking to change labor relations in ways that advantage employees and their unions are considered to be “pro-labor,” while those that would give the advantage to the employer at the detriment of workers and unions are classified as “anti-labor.” My data collection efforts reveal that Cantin’s (2012) observation about the “wave of anti-publicsector-collective-bargaining statutes” was potentially understated. Indeed, approximately 2500 bills seeking to weaken, strengthen, or preserve workers’ union organizing and contract negotiation rights were introduced across a majority of states surrounding the economic downturn. In the sections that follow, I offer more detailed descriptions of the content of this legislation while shedding light on how state labor relations agendas evolved over the course of the Recession.

THE LABOR RELATIONS REFORM AGENDA IN THE STATES

Collective bargaining rights are legal protections extended to workers permitting or requiring employers to meet with employees regarding the terms and conditions of their employment. However, collective bargaining rights for state and local government employees are not generally extended or restricted through a single legal provision; myriad occupation-specific laws regulate union organizing and contract negotiation rights. For this reason, state lawmakers pursued a multi-prong approach to reforming public sector labor relations during the Great Recession. This is indicated by the wide-ranging content of bills related to union organizing and employee rights introduced in state legislatures from 2007-2014.

#### The BLS agrees.

FC 25, Faster Capital, "The Role of Labor Unions: BLS Perspectives and Analysis," Faster Capital, 04/11/2025, https://fastercapital.com/content/The-Role-of-Labor-Unions--BLS-Perspectives-and-Analysis.html

1. The Decline in Union Membership:

According to the bureau of Labor statistics (BLS), union membership in the United States has been steadily declining over the past few decades. This decline can be attributed to a variety of factors, including changes in the economy, shifts in the labor market, and changes in labor laws. From a labor union perspective, this decline is concerning as it represents a loss of collective bargaining power and a weakening of workers' rights. On the other hand, some argue that this decline is a result of workers' changing preferences and the rise of alternative forms of worker representation, such as employee associations or advocacy groups.

- The BLS data shows that union membership as a percentage of the total workforce has decreased from around 20% in 1983 to just over 10% in 2020. This decline is particularly pronounced in the private sector, where union membership has dropped to single digits. The decline can be attributed to several factors, including the outsourcing of jobs to countries with lower labor costs, the decline of manufacturing industries, and the rise of the gig economy.

- Additionally, changes in labor laws and regulations have made it more difficult for unions to organize and maintain membership. Right-to-work laws, which allow workers to opt out of paying union dues while still receiving the benefits of union representation, have been enacted in many states. These laws have weakened unions' financial resources and reduced their ability to effectively advocate for workers' rights.

- Another contributing factor is the changing composition of the workforce. The decline in union membership can be partially attributed to the decline of industries traditionally associated with strong union representation, such as manufacturing. As these industries have declined, new industries with lower levels of unionization, such as the service sector, have grown.

2. The Benefits of Union Membership:

Despite the decline in union membership, there are still many benefits to joining a labor union. Unionized workers tend to earn higher wages, receive better benefits, and have more job security compared to their non-union counterparts. The collective bargaining power of unions allows them to negotiate for better working conditions, improved healthcare coverage, and retirement benefits. Union members also have access to grievance procedures and legal representation in case of workplace disputes.

- For example, studies have shown that unionized workers earn on average 10-20% higher wages compared to non-union workers in similar jobs. This wage premium can make a significant difference in workers' economic well-being, allowing them to support their families and invest in their future.

- Union membership also provides a sense of solidarity and a platform for workers to collectively voice their concerns and advocate for their rights. Unions can play a crucial role in ensuring fair treatment and preventing workplace abuses. They have been instrumental in fighting for improved safety standards, fair working hours, and protection against discrimination.

- Moreover, union membership can provide workers with opportunities for skills development and career advancement. Many unions offer training programs and apprenticeships that help workers acquire new skills and improve their employability.

3. Exploring Alternative Worker Representation Models:

In light of the declining union membership, alternative worker representation models have emerged to address the changing needs and preferences of workers. These models include employee associations, worker centers, and advocacy groups that focus on specific industries or issues.

- Employee associations, similar to unions, aim to represent workers' interests and negotiate with employers for better working conditions. However, unlike unions, membership in employee associations is often voluntary, and they may not possess the same legal rights and protections as labor unions. Employee associations can be found in industries like education, healthcare, and public service.

- Worker centers, on the other hand, focus on organizing and advocating for workers in low-wage and marginalized sectors, such as domestic workers, farmworkers, or gig economy workers. These centers often provide resources and support to workers, including legal advice, education, and community organizing.

- Advocacy groups, such as Fight for $15 or the #MeToo movement, have also emerged as powerful forces for worker advocacy. These groups use grassroots organizing, media campaigns, and public pressure to bring attention to workplace issues and push for policy changes.

4. The Importance of Balancing Worker Representation:

While the decline in union membership raises concerns about the erosion of workers' rights, it is essential to recognize that alternative worker representation models can also play a valuable role in advocating for workers' interests. Balancing the strengths of labor unions with the flexibility and innovation of alternative models may be the key to effectively representing workers in the modern economy.

- For example, unions can learn from the agility and organizing strategies of worker centers and advocacy groups to adapt to the changing needs of workers. By embracing new technologies and organizing methods, unions can reach out to a broader range of workers, including those in non-traditional employment arrangements.

- At the same time, alternative worker representation models can benefit from the legal protections and collective bargaining power that unions possess. Collaborations between these models and unions can amplify their impact and create stronger worker representation networks.

By understanding the trends and challenges facing labor union membership, as well as the benefits of union membership and alternative worker representation models, we can gain insights into the evolving role of labor unions in the modern labor market. This knowledge can inform discussions and strategies aimed at strengthening workers' rights and promoting equitable workplaces.

4. How Unions Negotiate for Workers Rights?

Collective Bargaining: How Unions Negotiate for Workers' Rights

Collective bargaining is a fundamental process through which labor unions negotiate with employers to secure better working conditions, wages, and benefits for their members. This crucial mechanism enables workers to have a voice in shaping their work environment and ensures fair treatment. In this section, we will delve into the intricacies of collective bargaining, exploring its significance, different perspectives, and the options available to unions and employers.

1. Understanding Collective Bargaining:

Collective bargaining is a method by which unions and employers engage in negotiations to reach a collective agreement that outlines the terms and conditions of employment. This process typically includes discussions on wages, working hours, benefits, grievance procedures, and other important aspects of the employment relationship. It is essential to note that collective bargaining is a legal right protected by labor laws in many countries, providing workers with a platform to address their concerns and protect their rights.

#### So do legislative debates surrounding NLRA ratification.

William P. Connery Jr. 1934, Representative from Massachusetts, "Congressional Record," Volume 78, 04/26/1934, pp. 7379-7507

Mr. CONNERY. Mr. Chairman, the whole purpose of this amendment is that it is asked for by organized labor to pro< tect the school teachers in their right to organize, if they see fit to do so and to join an organization of their own choosing. In some instances boards of education may say to the teachers, “ We forbid you to join a labor union.” The House will notice that the language in the amendment is “any legal organization of their own choosing.” Since labor organizations are legal I do not see how any Member can have any objection to this amendment which I am offering.

The right of labor to organize, the right of collective bargaining, is a legal right now under the NRA; and the pur- pose of this amendment is merely to prevent some board of education from saying to its teachers that they shall not be permitted to join a labor organization under penalty of losing their positions. That is the sole purpose of this amendment. I am not trying to harm this bill. I am in favor of the bill, I favor the general principle of voca- tional education, but I do not want to allow any board of education toe get funds from the United States Government and then use those funds to outlaw labor-union organiza- tions. I hope the committee will adopt the amendment, because it injures the bill in no manner whatsoever and merely protects the right of school teachers to organize if they want to, and as they should be entitled to under the the law.

#### 2. Collective bargaining rights are statutorily wedded to monetary damages. That makes those rights ‘legal in nature’.

Casey Warren Baker et al. 24, Baker, McInerney, and Knotts are affiliated with Marshall University, "More Questions than Answers: NLRB Enforcement Actions in a Post-Jarkesy World," American Bar Association, 10/14/2024, https://www.americanbar.org/groups/business\_law/resources/business-law-today/2024-october/nlrb-enforcement-actions-post-jarkesy-world/

Jarkesy Framework, Part 1: The Nature of the Remedy

The Seventh Amendment to the U.S. Constitution provides that “[i]n suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved. . . .” As explained in Jarkesy, the initial question is whether an internal administrative adjudication falls within the Seventh Amendment as a “suit at common law.” According to the Court, despite the amendment’s phrasing, the right to a jury is not strictly limited to claims arising under common law: a statutory claim is subject to the amendment if the claim is “legal in nature”—that is, not arising under equity, admiralty, or maritime jurisprudence.

According to the Court, in making such an assessment, the nature of the remedy is the most important consideration. Monetary damages, especially when imposed to punish or deter wrongful conduct, are within the scope of legal remedies. In contrast, remedies designed to restore the status quo are more likely to be considered equitable in nature.

As discussed above, the relief typically imposed by the NLRB is equitable in nature, with remediation of harm the primary objective. In the 1937 case of National Labor Relations Board v. Jones & Laughlin Steel Corp., the Court held that NLRB awards of money damages incident to equitable relief (such as back pay) are not subject to the Seventh Amendment. But awards of back pay serve not merely a remedial purpose—they also act as a deterrent against wrongful conduct. Jarkesy’s emphasis on the purpose of the remedy calls into question whether Jones & Laughlin Steel should be revisited to determine whether the dual purposes of such relief render back pay damages subject to the Seventh Amendment.

Jarkesy Framework, Part 2: The Public Rights Exception

Even if the NLRB’s monetary awards are legal in nature, the agency may nevertheless be able to claim an exception to the Seventh Amendment’s jury requirement. As the Jarkesy majority recognized, under the so-called public rights exception, if a cause of action has historically been determined by the executive or legislative branches, the judicial branch does not have exclusive jurisdiction over the claim. This exception typically extends to various types of administrative actions including revenue collection, immigration, relations with Indian tribes, administration of public lands, and the granting of public benefits.

In looking at the claim in Jarkesy—fraud—the majority considered whether the cause of action was substantially the same as one that might have arisen under traditional English common-law customs circa the late eighteenth century. The Court had little difficulty determining that the exception did not apply, as fraud was well-known in traditional common-law courts.

However, the majority distinguished the fraud claim at issue from an earlier decision, Atlas Roofing Co. v. Occupational Safety & Health Review Commission, involving workplace safety regulations. Since the regulations at issue in Atlas Roofing were not founded in common law, the Jarkesy majority found the case inapplicable to its consideration.

Therefore, determining whether unfair labor practice claims are within the public rights exception requires a review of the history of labor rights and whether the unfair labor practices policed by the NLRB have historical common-law analogs or are creations of modern legislative and executive functions.

There is at least one example of an English court in the 1700s relying on common-law criminal conspiracy principles to restrict the collective rights of organized workers. However, scholars debate whether the decision was truly based on common-law doctrines or a statute passed the preceding year. The leading early American case considering the question expressly rejected the English precedent as a common-law rule because of the existence of statutory prohibition. Essentially, in the absence of a statute making the collective action unlawful, a conspiracy to engage in the action cannot be considered criminal under the common law.

Thus, there is a historical American legal tradition of looking to statute to define lawful and unlawful collective bargaining rights and duties. The Act does just that, assigning the adjudication of such rights and duties to the NLRB as permitted by the public rights exception. But the Jarkesy majority cautioned that the public rights exception is an exception, with Article III courts presumptively the appropriate forum even where an argument can be made in support of the exception’s application.

#### 3. Damages are distinct from non-legal restitution awards for unjust enrichment, which scale with wrongdoer benefit instead of victim harm.

Dylan B. Carp et al. 24, Attorneys for Petitioner/Cross-Respondent/Intervenor MACY'S INC., "Supplemental Brief on Impact of Supreme Court's Decision in SEC v. Jarkesy, 144 S. Ct. 2117 (2024)," United States Court of Appeals for the Ninth Circuit, Case Nos. 23-124, 23-150, and 23-188, 2024

Under SEC v. Jarkesy, 144 S. Ct. 2117 (2024), the Seventh Amendment prohibits the National Labor Relations Board (“NLRB” or the “Board”) from seeking to impose on Macy’s, Inc. the remedies discussed in Thryv, Inc., 372 NLRB No. 22 (Dec. 13, 2022) (enforcement denied other grounds by Thryv Inc. v. NLRB, 102 F.4th 727 (5th Cir. 2024)). (ECF No. 89.1). In Jarkesy, the Supreme Court held that an administrative agency violates the Seventh Amendment’s right to a jury trial when it brings a statutory claim that is “legal in nature” through an administrative proceeding. Because the NLRB has used its in-house administrative hearing process to impose Thryv type damages that are purely “legal in nature” against Macy’s—in this case (remote) compensatory monetary damages—it has deprived Macy’s of its constitutional right to a jury trial. The Board’s decision, therefore, cannot stand under Jarkesy. And because Macy’s was entitled to a jury trial, this Court should not enforce the Board’s decision and order.

II. Jarkesy held the SEC’s administrative proceeding seeking money damages for a statutory claim of securities fraud violated the Seventh Amendment.

In Jarkesy, the Securities and Exchange Commission charged George Jarkesy and his firm with securities fraud. After an evidentiary hearing, an SEC Administrative Law Judge found respondents liable and levied a $300,000 civil penalty against them. See Jarkesy, 144 S. Ct. at 2127. On appeal, the Supreme Court held that the SEC’s actions violated the Seventh Amendment. The Court first reiterated that the right to a jury trial is “‘of such importance and occupies so firm a place in our history and jurisprudence that any seeming curtailment of the right’ has always been and ‘should be scrutinized with the utmost care.’” Id. at 2128 (quoting Dimick v. Schiedt, 293 U.S. 474, 486 (1935)). From that starting point, the Court explained that the Seventh Amendment guarantees the right to jury trial for all “Suits at common law.” U.S. Const. amend. VII. That phrase, according to the Court, encompasses all suits “which are not of equity or admiralty jurisdiction, whatever the peculiar form which they may assume.” Id. (citation omitted).

The phrase also encompasses statutory claims brought by administrative agencies that are “legal in nature.” Id. (citing Granfinanciera, S. A. v. Nordberg, 492 U.S. 33, 53 (1989)). Jarkesy explained that to determine whether a suit is legal in nature, courts should consider both the cause of action and the remedy that it provides, although the remedy is the “more important consideration” in making that evaluation. Id. at 2129 (internal citation omitted). In Jarkesy, the remedy was “all but dispositive.” Id. at 2129. “For respondents’ alleged fraud, the SEC [sought] civil penalties, a form of monetary relief.” Id. “While monetary relief can be legal or equitable, money damages are the prototypical common law remedy.” Id. As to the cause of action, “[t]he close relationship between the causes of action in [Jarkesy] and common law fraud” confirmed the conclusion that the claims were legal in nature because both targeted “the same basic conduct: misrepresenting or concealing material facts.” Id.

III. Under Jarkesy, the Board’s administrative proceeding seeking Thryv remedies for a statutory claim of a wrongful lockout violated the Seventh Amendment.

A. Thryv remedies are compensatory damages that are legal in nature and thus covered by the Seventh Amendment.

As in Jarkesy, the Board’s Thryv remedies are “all but dispositive” of the result here. Jarkesy, 144 S. Ct. at 2122. Those remedies are plainly legal in nature, meaning that Macy’s must have the opportunity to present its defenses in a jury trial. In Thryv, the Board declared that it had authority to award money “to compensate affected employees for all direct or foreseeable harms that these employees suffer as a result of the [employer’s] unfair labor practices.” Thryv, 372 NLRB No. 22, at \*1. These monetary awards may include:

 credit card debt, including interest and late fees;

 retirement account early withdrawal penalties to cover living expenses;

 compensation for loss of a car or home based on inability to make monthly loan payments;

 increased transportation costs; and

 increased childcare costs.

Thryv, 372 NLRB No. 22 at \*9-10. (citation omitted). According to the Board’s General Counsel, Thryv damages may also include monetary awards for “specialty tool costs,” “legal representation costs in eviction proceedings,” and “expenses resulting from a change in immigration status.” Memorandum GC 24-04 (April 8, 2024) (available online at https://apps.nlrb.gov/link/document.aspx/ 09031d4583ce3de3).

These remedies are compensatory and thus legal because they look to “what has the owner lost, not what has the taker gained.” Monterey v. Del Monte Dunes at Monterey, Ltd., 526 U.S. 687, 710 (1999). Here, Thryv damages focus on what the “owner,” (i.e., the alleged discriminatee) has lost. They do not focus on any gains by the company. These remedies are plainly compensatory since they seek to compensate through monetary damages for harm purported to have resulted, however tangentially, from violations of the National Labor Relations Act (“NLRA”). As this Court has held, claims that seek compensatory damages, such as the ones brought in Monterey, are legal ones because “compensation is a purpose traditionally associated with legal relief.”). Tamosaitis v. URS, Inc., 781 F.3d 468, 486 (9th Cir. 2014) (internal citations omitted); see also Mertens v. Hewitt Assoc., 508 U.S. 248, 255 (1993) (“Compensatory damages” or “monetary relief for all losses … sustained as a result of the alleged breach of duties,” are “the classic form of legal relief”); Feltner v. Columbia Pictures Television, Inc., 523 U.S. 340, 352 (1998) (the “general rule” is that “monetary relief is legal”) (citation omitted).

That these damages are compensatory—and thus legal in nature—is further shown by the treatment of damages under Title VII before its 1991 amendments. As explained in more detail in Macy’s Opening Brief, the remedial scheme under Title VII of the Civil Rights Act of 1964 was directly modeled after the NLRA’s remedial scheme. See Albermarle Paper Co. v. Moody, 422 U.S. 405, 419 n. 11 (1975). The Supreme Court’s proclamations on Title VII therefore should apply with equal force to the NLRA. And when the Supreme Court evaluated the damage remedies available under Title VII, it explained that “make-whole relief,” which the Board unconvincingly claims to only seek, consists of “restoring victims, through backpay awards and injunctive relief” to wage and employment positions they would have had even without the unlawful discrimination. United States v. Burke, 504 U.S. 229, 239 (1992). Yet the Court also made clear that compensatory damages such as “pain and suffering, emotional distress, harm to reputation, or other consequential damages (e.g., a ruined credit rating)” were not part of make-whole relief. Id.

The Supreme Court’s Burke decision, although issued in 1992, evaluated the pre-1991 version of Title VII. In 1991, Congress amended Title VII to allow a plaintiff to recover compensatory and punitive damages for violations of that civil rights law. Yet, “to protect the rights of all persons under the Seventh Amendment,” Congress also amended the law to provided that “any party may demand a trial by jury” when such damages are sought. See EEOC v. Bass Pro Outdoor World, LLC, 826 F.3d 791, 796 (5th Cir. 2016) (citations omitted); see also 42 U.S.C. § 1981a(c).

The Board now seeks monetary damages under Thryv for “ruined credit rating” and many other types of damages that allegedly can be remedied through payments. But Congress recognized that remedy expansion under Title VII, whose remedial scheme mirrored that of the NLRA, required Seventh Amendment compliance. The Board, in contrast, has deemed to grant itself the right to award such damages by ignoring the text of the NLRA, relevant precedent such as Burke, and, most problematically, the Constitution. It cannot do so. In fact, the dissent in Thryv pointed out that the Board’s expansive remedial scheme went “well beyond the remedies available under Title VII” even though the Seventh Amendment required jury trials for Title VII’s compensatory damages. Thryv, 372 NLRB No. 22, at \*19 (Members Kaplan and Ring, concurring in part and dissenting in part).

#### It’s a totally different paradigm for remedies, even if it results in the same money transfers.

Patrick J. Bumatay 25, Judge of the United States Court of Appeals for the Ninth Circuit, Yale University BA, Harvard University JD, "International Union of Operating Engineers, Stationary Engineers, Local 39 v. National Labor Relations Board," United States Court of Appeals for the Ninth Circuit, No. 23-124, 01/21/2025

First, consider the remedies the Board seeks to impose—arguably the most important concern. Recall, under its make-whole authority, the Board believes that it may make employers pay for any foreseeable pecuniary harm that employees experience because of an unfair labor practice. This includes such attenuated harms as babysitting fees, credit card late fees, car payments, and attorneys’ fees to sue landlords. But all this exceeds the purely equitable remedies that the Board may order.

Without question, the Board has the equitable powers to restore employees to the status quo through monetary relief. See NLRB v. Jones & Laughlin Steel Corp., 301 U.S. 1, 48 (1937) (the Board may order a monetary recovery as “an incident to equitable relief”); Leviton Mfg. Co., 111 F.2d at 621 (the Board’s authority to order payments “must . . . be confined to restitution for the wrong done”). But it has no authority to award money damages as a tort remedy. See Jarkesy, 603 U.S. at 123 (“[M]oney damages are the prototypical common law remedy”); Teamsters v. Terry, 494 U.S. 558, 570 (1990) (“Generally, an action for money damages was ‘the traditional form of relief offered in the courts of law.’”) (simplified).

To be sure, sometimes equitable restitution and money damages can look the same. In some cases, they can even lead to the same dollar award against a party. See Dan B. Dobbs, 1 Dobbs Law of Remedies 280 (2d. ed. 1993). Even so, they are distinct. And this distinction is significant:

[T]hey are often triggered by different situations and always measured by a different yardstick. Damages always begins with the aim of compensation for the plaintiff . . . . Restitution, in contrast, begins with the aim of preventing unjust enrichment of the defendant. To measure damages, courts look at the plaintiff’s loss or injury. To measure restitution, courts look at the defendant’s gain or benefit.

Id. In other words, when distinguishing ordinary money damages at law from “equitable restitution and other monetary remedies available in equity,” “the question is what has the owner lost, not what has the taker gained.” City of Monterey v. Del Monte Dunes at Monterey, Ltd., 526 U.S. 687, 710 (1999) (simplified). And so, as a corollary, the question for equitable remedies is only the unjust gain of the taker or employer—not the loss to the owner or employee.

Explaining the difference between equitable monetary relief and monetary damages should illuminate the problem here. The Board wants to measure monetary relief from the perspective of the employee’s loss—not the employer’s gain. The Board’s foreseeable-damages regime asks: What did the employee lose? What fees did the employee incur because of the unfair labor practice? What opportunities did the employee forgo because of the proscribed conduct? But this would be inappropriate under equity. Equitable relief should ask only what the employer has unjustly gained. When employers withhold pay from employees based on unlawful employment actions, employers unjustly keep the employees’ wages and so equitable relief equates to back pay—exactly as contemplated by § 160(c). On the other hand, the award of broad foreseeable damages goes beyond equitable restitution and crosses into the tort remedy of money damages.

#### a. CBRs are legislative, not courts

Thomas Waterman 19, Justice, Supreme Court of Iowa, "AFSCME Iowa Council 61 v. State," no. 17-1841, 5/17/2019

"We reiterate that the scope of collective bargaining rights of public employees "is a matter for the legislature, not the courts." State Bd. of Regents v. United Packing House Food & Allied Workers, Local No. 1258, 175 N.W.2d 110, 113 (Iowa 1970); see also Bennett v. City of Redfield, 446 N.W.2d 467, 473 (Iowa 1989) ("The right to public employment is not a fundamental right."). House File 291 does not prohibit or restrict unions from soliciting members, disseminating materials, engaging in political activities, or expressing their views. As the State argues, "There is a fundamental distinction between the right to associate and whether someone must listen when you do. Declining to collectively bargain over certain topics does not inhibit the ability to associate." We agree and apply rational basis review to this challenge. Nothing in House File 291 prohibits public employees from joining AFSCME or any other union.…" AFSCME Iowa Council 61 v. State, 928 N.W.2d 21, 41.

#### b. Resolved is legislative

Louisiana State Legislature 5, Governing body of the state of Louisiana, "Legislative Glossary," https://www.legis.la.gov/legis/Glossary.aspx

Resolution

A legislative instrument that generally is used for making declarations, stating policies, and making decisions where some other form is not required. A bill includes the constitutionally required enacting clause; a resolution uses the term "resolved". Not subject to a time limit for introduction nor to governor's veto. (Const. Art. III, §17(B) and House Rules 8.11, 13.1, 6.8, and 7.4 and Senate Rules 10.9, 13.5 and 15.1)

#### c. PRECISION---our ev’s from cases applying the legal nature of the NLRA to labor disputes. That’s the only predictable basis of reference.

Anne Mayerson et al. 16, Attorneys, "Amicus Curiae Brief for the Amalgamated Transit Union (ATU) in Support of Defendants' Motion to Dismiss, or in the Alternative, for Summary Judgment, and in Opposition to Plaintiffs' Motion for Summary Judgment," United States District Court Eastern District of California, Cadse No. 2:13-CV-02069-KJM-DAD, 04/05/2016, Lexis

When Congress enacted Section 13(c)(2) in 1964, it obviously did not draw the term “collective bargaining rights” out of thin air; rather, it had something specific in mind. And, considering the circumstances that led Congress to enact Section 13(c)(2) in 1964 to provide for the “continuation” of “collective bargaining rights”—viz., a trend towards public acquisitions of private sector transit companies whose employees and their unions would continue to be covered by and enjoy the protections of the National Labor Relations Act (“NLRA”) but for such public acquisitions—that something specific could only have been “collective bargaining rights” of the kind historically made available to private sector employees under the NLRA. See generally ATU v. Donovan, supra, 767 F.2d at 948-49. Accordingly, in its determinations on remand, the DOL was right to look to “[t]he prevailing [case] law” under the NLRA “when section 13(c) was enacted” in determining what Congress meant when it used the term “collective bargaining rights” in Section 13(c)(2). See SacRTD Determination, at 11-13.

### 2NC – PICs – T/L

### Solvency---AT: Certainty

#### 2. THE CP IS CERTAIN. The basic principle might be vague, but no more so than the basic principles of statutory law. The CP’s specific applications clarifies the doctrine in the plan’s area.

Harvard Law Review 20, "The Intellectual History of Unjust Enrichment," Harvard Law Review, vol. 133, 04/01/2020, p. 2077

C. Attempted Fusion Across Law and Equity

Given unjust enrichment's development in both common law and equity, it became a compelling candidate for fusion. This section traces the history of this attempt, arguing that the fusion of law and equity in the United States plays an explanatory role in unjust enrichment's relative lack of popularity. A bridge between equitable remedies and the common law doctrine of quasi-contract was underway in the late-nineteenth century within U.S. courts. Scholars built on early decisions to fashion a theory of unjust enrichment that straddled both common law and equity, culminating in the 1937 First Restatement of Restitution. The timing coincided with the realist-driven fusion of common law and equity in federal and state courts, which may have contributed to a mischaracterization of unjust enrichment as primarily an equitable doctrine. Unjust enrichment came to be seen as a product of the judge's conscience, rather than a source of interpersonal obligations equally as rooted in our law as contract and tort.

There is much at stake in deciding whether to treat unjust enrichment as an equitable or legal principle. In many ways the merger of law and equity remains elusive in the United States, and equity is still viewed as "subordinate, extraordinary, or unusual." 127Equitable doctrines gained a reputation as too expansive, ill-defined, and discretionary, and equity stopped being taught as a required course in American [\*2090] law schools. 128The law is also littered with "remnants of equitable tests that continue to operate as prerequisites for access to certain remedies." 129The irreparable injury rule is sometimes applied to deny plaintiffs a remedy for unjust enrichment. 130The irreparable injury test "commands that no equitable remedy will flow if adequate legal remedy exists." 131But applying the irreparable injury rule makes little sense in the context of unjust enrichment if unjust enrichment was itself a "legal remedy" stemming from common law. Misclassification has further consequences given that only litigants with common law claims have a right to a jury trial. 132

The bridge between equitable remedies and common law quasi-contract began in the nineteenth century with American courts, which responded in varying degrees to legislative mergers of law and equity. 133In an 1885 Indiana Supreme Court case, Peirce v. Higgins, 134the court provided an equitable remedy for a quasi-contractual claim. 135First the court explained that subrogation, the requested remedy, is an equitable one: "[T]he right results more from equity than from contract or quasi contract." 136Nevertheless, "[T]he principles of equity entered into that contract as a silent but potent factor . . . . [The] parties in contracting assume that the law is one of the elements of their contract." 137Another early example of attempted fusion is a federal case from 1887 in which the court viewed the equitable remedy for mistaken improvers as an equitable defense to an action at law. 138The court explained it had the power to combine equity and common law because the state legislature had "obliterated the line between equitable and legal defenses." 139

Despite the scholarship of Ames and Keener, twentieth-century scholarship and case law most often considered unjust enrichment in quasi-contract and equity separately; even so, scholars increasingly [\*2091] noted similarities in the subjects. 140In 1937, the American Law Institute officially recognized the unity between contracts implied in law and equitable remedies based on the principle of unjust enrichment in the First Restatement of the Law of Restitution: Quasi Contracts and Constructive Trusts. 141The original name included the "Law of Restitution and Unjust Enrichment," but this was considered too long of a title. 142The name has been almost universally disparaged. Professor Peter Birks critiqued it best:

The series 'contract (or, larger, consent), wrongs, unjust enrichment, and other causative events' is on its face a well-dressed series in which every term is of the same kind. It is a classification of the events which generate legal rights and duties. When we substitute restitution for unjust enrichment, we appear to have invited a cuckoo into the nest. One term now refers, not to a cause, but to an effect. 143

Despite the blunder in name, the First Restatement was an important advancement and had a tremendous impact in the United States and abroad. The choice of organization separated quasi-contract from the Restatement on Contracts, and separated constructive trusts from the Restatement on Trusts. 144Sitting side by side, these two fields represented the law of "restitution," straddling both common law and equity. The Reporters, Professors Austin Scott and Warren Seavey, explained this unification thus: "In bringing these situations together under one heading, the Institute expresses the conviction that they are all subject to one unitary principle which heretofore has not had general recognition. In this it has recognized the tripartite division of the law into contracts, torts and restitution . . . ." 145The Reporters were attuned to criticism that unjust enrichment was "so broad as to be meaningless." 146They responded that tort law turns on the definition of broad terms such as "wrong" that have been defined through an extensive set of rules, many of which are attributed more to history than to logic. 147The same could be said for "unjustified" within the law of unjust enrichment. As for unclear doctrinal boundaries such as cases where facts could give rise to a claim in both contract and unjust enrichment or in [\*2092] both tort and unjust enrichment, 148they argued that the plaintiff could choose which claim to bring based on what elements could be proven or the remedies available. 149

#### \*4. PRINCIPLES ARE BETTER THAN BRIGHTLINE RULES. Regulated parties understand them and respond in good faith.

Irit Samet 18, Professor in the Dickson Poon School of Law, “Equity’s Own Room,” Equity: Conscience Goes to Market, Oxford University Press, 2018, pp. 1–76

4.2 Prescription for certainty and consistency

Thus far, in my defence of the ex post morally infused equitable principles, I accepted the assumption that tightly specified rules increase legal certainty. Raz’s observation that ‘rules . . . are more certain than principles and lend themselves more easily to uniform and predictable applications’ is taken as the premise of many inquiries into the correct balance between principles and rules, whatever their conclusion.290 Even the classical realists, as Hanoch Dagan shows, held deep respect for the requirement of predictability that is implied by the ROL ideal, and conceived of legal rules as promoting the worthy goals of the ROL.291 However, when considering the sacrifice in terms of predictability that equitable standards may demand, we need to remember that empirical evidence does not necessarily support a direct linkage between the use of rules and high levels of legal certainty. On the contrary, in their ground- breaking work on the relationship between certainty and rules, John and Valerie Braithwaite argued that when we attempt to regulate ‘complex actions in changing environments where large economic interests are at stake . . . principles are more likely to enable legal certainty than rules’.292 This conclusion followed from a large study of the regulation of care- homes in the US and Australia in which the researchers compared the results of inspections which were based on a thicket of bright- line rules (in the US) with those that applied a nimble set of amorphous principles (in Australia).293 It turns out that a set of rules which attempts to cover every aspect of a highly complex human activity, such as caring for the elderly, yields unpredictable assessments of whether the rules have been complied with. As a result, the managers cannot know for sure what they need to do in order to secure a good inspection report, as much depends on the identity of the individual inspector and how he/ she approaches the complex net of the applicable rules. In contrast, a minimal list of principles, some of which are as vague as the requirement to care for the inhabitants with ‘dignity and compassion’ and create a ‘ “home- like” environment’ for them, led to a set of far more unified and predictable inspection reviews. Presumably, managers of care- homes know very well what most people would consider a ‘home- like’ environment, whereas an administrator that engages in a frantic ‘tick the box’ exercise is much more likely to miss on some rules (exactly those the regulated may focus on if she is unlucky), and be in the dark as to the way different parts of the voluminous set of rules interact. The authors conclude that ‘there are contexts in which standards are both more certain and more flexible, more uniform and more individualised than rules’.294 A ‘prudent’ combination of rules and principles, where principles are to be followed in case of contradiction, the authors find, is the best prescription for a high score in ‘predictability’.295

One important reason why rules often fail to deliver the consistency and predictability which a ‘government by rules’ promises, says Braithwaite, is that ‘wealthy legal game players aim for the penumbra, [i.e.] play the game in ways that expand the grey area of the law’.296 In dynamic areas, where the penumbra of uncertainty is relatively large, the ‘game- players’ deliberately exploit it to achieve goals that undermine the purpose of the law. And when regulators rush to clarify the uncertainty and close the loopholes, the result is often a glut of rules which neither the law’s subjects, nor its enforcer can master, so that enforcement becomes largely random. This is another aspect of the phenomenon described by McBarnet, Whelan, and others in the context of financial regulations and tax law. Braithwaite’s empirical studies help to shed light on the way in which an attempt by the lawmaker to close loopholes by adding more rules undermines the very reason for which rules (rather than standards) were used in the first place, viz. to ensure the predictability of legal results. Similarly, in the area of private law, the Law Commission of Victoria, for example, suggests that introducing broad unconscionability principles into contract law will help to solve the predicament of ‘rules and qualifications designed to give precision [which] exist in such numbers [that they] produce uncertainty, cost and delay in the resolutions of disputes’. The committee proposes to create a dual structure, whereby ‘established rules of contract law [would be the] essential points of departure’ but these will be qualified where ‘the facts of the case makes invoking them unconscionable’.297

One argument against importing the Victorian Law Commission’s view to England is that the Common Law courts’ zealous devotion to the virtues of clarity and predictability generates a significant social good: it supports a lucrative line of export in the form of commercial litigation. As Hugh Beale explains:

Our courts handle many cases that have no real connection with England save that the parties have chosen that the contract should be governed by English law. This is often coupled with a choice of England and Wales as the jurisdiction. This ‘law for export’ has deliberately been kept even closer to the classical model than the law for domestic consumption.298

Conceding that this line of export is ‘of huge importance to our economy’, Terence Etherton nevertheless finds that it is a misguided basis for the suggestion that a concept of unconscionability that involves judicial discretion should not be incorporated into law that applies to businesses. This is because unconscionability, like dishonesty, ‘is not a concept lacking in principle or certainty merely because it depends on the court’s perception and application of an objective societal norm’; it is rather a principle which is ‘clear and certain even if its application to particular facts is contested and uncertain’.299 In that sense, he reminds us, conscionability is not much different from cannons of contract interpretation like ‘reasonable’ or ‘commercial common sense’, that depend upon the judges’ perception of these standards. It is exactly the flexibility of Equity that renders them so useful and conducive for the resolution of commercial disputes. I end this section by noting that even Friedrich Hayek came to believe late in his life that ‘judicial decision may in fact be more predictable if the judge is also bound by generally held views of what is just, even when they are not supported by the letter of the law’.300

### Climate NB---I/L---2NC

#### Unjust enrichment drives mitigation efforts that stop climate change from becoming existential.

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In this regard, as mentioned before, it’s an established principle of international law that states are responsible for the adverse consequences of actions that originate from their soil.138 For instance, the United States attacked Afghanistan since the Taliban government in power there at the time harbored Osama Bin Laden and the Al Qaeda that, in turn, attacked America.139 If an international trust is violated or damaged it is the primary legal responsibility of the offending states as trustee to restore the damaged “goods” or stolen wealth to the status quo ante.140 [FOOTNOTE 140 BEGINS] 140 Arguing by analogy concerning the duties of any Trustee, and civil remedies; Rickett Granthan, Disgorgement for Unjust Enrichment?, 62 CAMBRIDGE L.J. 159-180 (2003); Barry L. Zins, Trustee Liability for Breach of the Duty of Loyalty: Good Faith Inquiry and Appreciation Damages, 49 FORDHAM L. REV. 1012 (1981); Finally see Paola Gallo, Unjust Enrichment: A Comparative Analysis, 40 AM. J. COMP. L. 431-465 (1989). As argued in Part I, there is a second tier of possible remediation as well. [FOOTNOTE 140 ENDS] If this fails, then the offending states must seek the damaged party whole through surrogate means, such as monetary or even property awards. Under established negligence or tort law in many jurisdictions, the onus is on the worst offenders first, and a treaty should recognize this legal responsibility – though all states must have a role to play in order to preserve the Earth’s Atmosphere as a Global Trust.141 In this regard, the Rio Summit (1992) affirmed the responsibility of all states to address climate change.142 As the same time, the principle of Proportionate Responsibility (PR) advocated here is different than the one recognized in the Rio Declaration, which emphasized the “common yet differentiated” responsibilities of states.143 As argued here, Proportionate Responsibility argues that a small group of the worst offenders — the MIOPs — have the first, collective and primary duty to take effective action, though all states must make effective good faith efforts to reduce their carbon footprint as well.

Any state that egregiously ignores the compelling and scientific evidence about the anthropogenic origins and massive contribution to current climate change, and continues to pour GHGs into the atmosphere from its own territory, is committing an Earth Crime. Specifically, such a crime occurs when a state fails to use prudent care, breaching a common legal duty to protect the Earth or its commons as a trust, and wantonly destroys the health and well-being of present or future generations. In the past, states could perhaps once plea ignorance to the effects of GHGs in the atmosphere; but the scientific evidence has been persistent, growing and is now conclusive.144 Further, gross negligence and wanton disregard or destruction of a global commons that results in real damages to present or future generations cannot longer be justified or denied by states; such activities that emanate from their own territories constitute an Earth Crime for which individual states can and must be held accountable if humanity is to flourish, or let alone survive, in the future. We do not live in some abstract Cartesian space that can be indefinitely trashed. Rather, we live in a fragile planet whose ecosystems necessary for life are in a very precarious balance; the law cannot be silent when the health and fate of the entire Earth and all of its inhabitants—human or other—are endangered. As a first and most immediate step in this regard, is to recognize the Earth’s Atmosphere as a global trust.

Furthermore, since ancient Roman times, the status of a trust has been protected by law to insure against “unjust enrichment” — defined broadly as meaning the gaining of any kind of benefit from illegal use of the trust or proprietary resource — by trustees or other outside parties with access to the resources of the trust.145 In medieval and modern times, a violation of a public trust – whether construed as the “King’s Land” or property held in common — legally requires that restoration or restitution occurs so that the damages can be repaired and the integrity of the trust preserved. 146 Courts sometimes retroactively create and impose a “constructive trust” in order to insure that unjust enrichment is punished and future instances of abuse will be prevented.147

The scope of this unjust enrichment is now literally off the scales; with the recording of 400 PPM in May of 2013, the amount of CO2 in the global atmosphere has reached levels that simply have no precedent in all of human history (Scientific American, 2013).148 Over fifty percent of this increase was and is caused by simply four or five states that now have the responsibility to restore the Earth’s atmosphere so that the mere existence of future generations is assured. The collective contribution of these few states, especially if it continues, is an Earth Crime since these activities from states’ territories potentially threaten all of life on this fragile planet we call our home. The time for “finger pointing” among the MIOPs is over; they must be collectively recognized for their massive contributions to GHGs to the global atmosphere, and held legally responsible as individuals or as a group.

The possible and even increasingly probable finding by a domestic court of a developing nation concerning proportionate responsibility of a state, especially the MIOPs, suddenly becomes extremely relevant and necessary for every government to calculate and take into active policy formulation and implementation, especially when coupled with the extremely well established international legal principle that a state is responsible for actions or damages that result from its territories.149 The vast and increasing damages caused by global climate change are increasingly obvious, studied and most importantly, scientifically documented by the best scientists on the planet, such as though in the IPCCC.150 These scientific studies and documents can provide international, regional, national, or indigenous courts with compelling and convincing evidence of a state’s proportionate responsibility for damages incurred by other plaintiff states, other entities capable of international legal personality or possibly even individuals. In fact, over 50% of the CO2 and other greenhouses gases that the resulting and increasingly documented damages of global climate change are have historically emanated from the sovereign territory of only four or five developed or heavily industrialized states.151

A global commons as an explicit legal trust belongs to all, and no one state has the right to abuse it for its own purpose or profit. To do so creates, at the very least, a juridical issue concerning unjust enrichment as well as concurrent or culpable negligence in damaging the global atmosphere that should be accepted in international, regional, national or indigenous courts to adjudicate fairly, and then to decide in terms of the documented damages actually done.152 In particular, it is a recognized principle in trusts or negligence and tort law in many national jurisdictions that those who cause the most damage bear the most responsibility to restore the status quo ante, if possible. 153 In the international context, proportionate responsibility requires no less; as such, those MIOP states most responsible for the concurrent or culpable negligence that has occurred, endangering all, must be the first states to take remedial steps and act individually or collectively to restore the Earth’s atmosphere.

The first goal of such mitigation and efforts as the immediate task, is to restore the atmosphere to levels below 400 PMM of CO2. This should still be achievable if each state develops and maximizes a comprehensive portfolio of mitigation methods and means that includes carbon sequestration and even geo engineering. Each MIOP state’s proportionately responsibility can be roughly calculated and then can use its own uniquely tailored portfolio of mitigation methods to restore the atmosphere to accomplish this urgent and historic priority of humanity as a whole.154 At the same time, it bears repeating that ALL states have a responsibility to lower carbon emissions emanating from their soil.

In light of this, a key set of legal questions then for the Courts to decide when allocating proportionate responsibility and deciding concurrent or comparative negligence become: a) What are the valid and admissible metrics to use in such determination; b) What is an exact or even approximate point in time to begin measuring a state proportionate responsibility and thus possible or very real culpability for the resulting damages?; and c) What is the nature and character of the damages to be rewarded when and if negligence of a legal duty or the omission of a legal duty is established?

Concerning metrics, the courts can use a variety of welldocumented scientific and economic records to determine the relative “contribution” and hence liability of each state. 155 This is especially true for the Greenhouse Gas gluttons, the MIOP states.156 The consumption of oil per country, for instance, is well publicized and has been for some time. In short, approximate though accurate data is not that hard for the courts to obtain. For instance, even the CIA within the United States government publishes such data all the time.157 So, do international organizations, global banks institutions as well as private Nongovernmental organizations (NGOs).158 The combined and still increasing use of carbon based fuels by the MIOPs is a matter of public record; of the industrialized states, only Germany has made significant efforts to go green in its economy and public life.159 Most states still diplomatically “deal” in the currency notes of the Kyoto and Paris Agreement (2015) process— consisting of basically “promissory notes” to cut carbon and GHGs sometime, somewhere, in a nebulous future.160

The second and key question is: What time frame or specifically starting point in time, [Here afterwards referred as time-point] should be used as the starting point to determine the proportionate responsibility and the subsequent liability of the MIOPS and other states? There are several possible starting points to use as the actionable time point for filing court cases concerning the damages occurring from current or future catastrophic climate change, including: a) The state’s historic Contribution of Carbon and Green House Gases in the Atmosphere (COCGHGs); b) the state’s current COCGHGs) contribution to global atmosphere; c) the current per capita contribution of states to GHGs in the global atmosphere; d) Establishment by date of a high degree of scientific certainty and consensus —above a 90 or 95 degree of certainty— in the international scientific community concerning the human causation of global climate change, such as the IPCC 2014 studies or the newly established the Anthropocentric Equation (Feb. 13, 2017) c) the final ratification of the actual treaty recognizing the Earth’s atmosphere as a global trust—a yet hypothetical future date and time.

I anticipate that the industrialized states will favor the last time point—ratification—which will delay the award and issue of damages even further and will give states—especially the powerful MIOPs—an extreme incentive in postponing or preventing the treaty from taking legal effect in the first place. Given this, I favor and argue here in support of a state’s historic contribution as the starting point to be used by courts as the first or even main metric as the time point in measuring and adjudicating the proportionate responsibility; this time point which can be fairly well established by exiting scientific data, will then not be impacted unduly by the subsequent delays of ratification; a state’s historic contribution of GHGs can then be used in the adjudication of trust law and the finding of proportionate responsibility, for (though not exclusively) concurrent or culpable negligence, especially to the land, livelihoods, property and peoples of developing countries. The “historic contribution” metric is critical and just in ascertaining proportionate responsibility since each state’s COCGHGs can stay in the atmosphere for over a thousand years.161 As already mentioned, powerful states already track, and often publish their own and other countries, historic as well as current use of carbon based fuels. So, this metric can be proportionately calculated with increasing scientific precision and certainty.

Any such finding based on the historic metric –or any other metric that each court will ultimately decide— will in turn have to determine the appropriate levels of unjust enrichment, negligence or damages by each state, beginning with the MIOPs, the most egregious offenders.162 Until the danger of catastrophic climate change is over, the main focus of such damages should be on a state’s proportionate responsibility to restore the Earth’s atmosphere to a sustainable level, identified in this article below 400PPM as an immediate aim and 350 PPM as the ultimate goal. Monetary damages may also be appropriate and even necessary for the most vulnerable states, such as low lying island states, that must take immediate remedial actions in order to simply survive.163 States determined to have the greatest proportionate responsibility and liability will then be primarily responsible to restore the Earth’s atmosphere by pursuing immediate and ultimate goals. In short, prevention and restoration of the global atmosphere must still be the primary goal of the courts until the danger of climate change is finally overcome through appropriate mitigation methods. At the same time, ALL states share in this responsibility and must take the appropriate steps to restore the atmosphere to sustainable levels for present and future generations. It must be strongly emphasized that such atmospheric restoration is a job creating and employment enhancing activity for potentially millions of people throughout the globe.164

Such restoration of the Earth’s Atmosphere is still possible if governments spend a fraction on what they now spend on “defense” to fund such a remedial effort. While such partial defense cuts occur, the most powerful states may want to agree upon an “Earth Armistice” during which they and the MIOPS help to restore the Earth’s atmosphere. Such restoration efforts by every state must include a managed portfolio of means and methods to achieve such a restoration including: a) the pledged carbon cuts incorporated in the Paris Agreement; b) in honor of :aQJaUL 0aatKaL massive reforestation efforts on each inhabited continent of the world; and c) massive energy and resource conservation efforts. The worlds still waste an enormous amount of energy. As episodic evidence, for instance, my own “green” university keeps indoor lights on night and day; I go around turning them off in disbelief that such mindless behavior exists on this or any campus. Every wired institution, building or home can probably decrease its energy use to an absolute minimum, d) massive and increasing energy efficiencies in existing carbon consuming technologies; e) the experimentation, testing then massive deployment of carbon sequestration and geo-engineering technologies, beginning in the southern oceans and largely inhabited areas such as Antarctica—e) the massive mobilization of Research and Development (R&D) in alternative energies, carbon sequestration or geoengineering technologies, energy efficiencies, and sustainable development. All of these steps require the mobilization of peoples throughout the world commensurate with the growing threat of catastrophic climate change for such cuts, conservation and R&D efforts; frankly, such mobilization is needed and such effective massive efforts cannot be delayed much longer, even by those fortunate few who most highly prize or benefit from the increasingly unsustainable climatic status quo.

We will examine how such restoration of the Earth Atmosphere can occur as part of every state’s proportionate responsibility to repair the damage they’ve done to this essential and life giving global commons.

[PARAGRAPH INTEGRITY PAUSES]

C. IN DECIDING PROPROPORTIONATE RESPONSIBILITY OF STATES FOR CLIMATE CHANGE, COURTS SHOULD FIRST FOCUS ON “DAMAGES” THAT RECOMMEND OR REQUIRE THE RESTORATION OF THE EARTH’S ATMOSPHERE AS THE MOST IMMEDIATE AND URGENT CHALLENGE FACING HUMANITY UNTIL THIS GROWING DANGER IS PAST The immediate task of all states, especially the MIOPs, must seek to restore the global atmosphere to levels below 400 PPM as an immediate and achievable task. The ultimate task by all states must be collective efforts to restore the Earth’s atmosphere to 350 PPM, the level that Dr. James Hansen of NAS and other scientists have identified as critical to sustaining life on this planet.165 Thus, the UNGA resolution should call for the RESTORATION of the Earth Atmosphere as a global trust for present and pending generations; this is now an immediate and historic responsibility of humanity. It should be pointed out that restoration efforts, broadly defined to include the needed research and development of Green Technologies, as well as subsequent implementation, can also create thousands of jobs throughout the world.166 China and Germany are already well advanced in developing appropriate green technologies but much more needs to be done. 167 Specifically, we must experiment with, and deploy carbon sequestration methods and technologies, among other possible techniques and conservation strategies, to lower the Greenhouse Gases (GHGs) in the atmosphere.168 The most promising approaches to the restoration of the global atmosphere will have to involve carbon sequestration as well as “geoengineering” on a potentially massive scale ,n particular, the “Iron Hypothesis” –the placing of iron particles in the oceans to grow massive plankton blooms has not been empirically tested to the necessary degree or scale of potential oceanic application—beyond feeble “one (or two) shot” attempts and then subsequent very tentative studies.169 The critical restoration of the global atmosphere can be enhanced by developing, a portfolio of mitigation methods; such a portfolio must specifically include concerted efforts to develop an experimental and then ideally, if proven effective, the operational capability to deploy iron filings from ships—the so-called “Iron Hypothesis,”—on a massive scale in the Southern Oceans (NASA, 2015; George, 2007).170 In particular, the iron ore mines of Argentina are near railroad lines that lead directly to ports on its southern coast (Puerto Deseado), where the great Antarctica plankton blooms seem to begin. Argentina is ideal since all the key components of carbon sequestration can be brought together with the smallest carbon footprint and maximum potential impact. Thus, the MIOPS should begin to fund pilot projects in Argentina and, when proven though constant experimentation and testing to work, commence large scale implementation of carbon sequestration right on Argentina’s coast where the subsequent Plankton blooms might spread throughout the southern oceans.171 Carbon sequestration, which involves land or sea based efforts to capture and sequester CO2, removing it from the global atmosphere, is distinguished here from Geo-Engineering efforts that involves the airborne efforts to spray or cast out effluents that will then reflect the sun’s light back into outer space.172 While both approaches involve dangers and possible unseen consequences, I favor carbon sequestration over geo-engineering since it can be deployed in large areas in removed places far from population centers. Yet, all methods must be attempted, and implemented until one or more are proven to succeed in cutting the constant increases LQC02, GHGs, in the Earth atmosphere, as well as the slow but steady increase in the Earth’s average temperature are stopped and reversed; these approaches include: carbon cuts which have been preferred and the focus of most international efforts since the Rio Earth Summit; a) carbon sequestration based on the Iron hypothesis; b) carbon farming173; c) olivine oxidation;174 d) geoengineering such as the purported possibilities of solar reflection. Other potentially large scale carbon sequestration methods must be implemented, as well. Untried ways to achieve the massive carbon sequestration should be as varied and innovative as the human imagination and following policy initiatives allow. For instance, vastly expanded and added efforts must include, in memory and honor of Wangari Maathai, the continuous planting a billion trees per year on each of the inhabited mainland continents;175 there should also be massive and accelerated conservation efforts with energy or electricity as well as recycling, especially throughout the developed world where the waste is greatest. Time is now not on our side as the danger of irreversible climate change is rapidly growing; so, we need to accelerate global climate consultations, continuous negotiations and lasting action. As a global organization, the UNGA can help mobilize the necessary research and development of policies, programs and technologies especially during yearly or bi-yearly special sessions to accomplish greater efficiencies in all possible mitigation methods, including healthy carbon sequestration as well more remote techniques as “in stratosphere” and space-based solar screening. In short, every possible mitigation method or every “Experiment with Truth” —in the spirit of Gandhi — must be tried until one or more mitigation method proves effective. 176 In doing so, the rather obvious ethical and even legal rule of application is that such mitigation or sequestration technologies should not be deployed if the actual damage that they cause is greater than the growing danger and increasing devastating consequences of continuing, unabated global climate change. There is now a cruel yet unavoidable calculus of cost-benefits calculations concerning the benefits and inevitable consequences of simply doing nothing, such as droughts, migrations and increasing extinction events. For instance, critics of carbon sequestration in the oceans often cite the unintended potential consequences of large scale deployment of technologies based on the Iron Hypothesis; yet, there is a massive and growing toxic orange algae bloom growing off the coast of California RIGHT NOW (2017) caused by increased temperatures and unabated climate change.177 This toxic bloom is causing a massive and growing kill-off of fish, the seabirds or mammals that rely upon them. Elsewhere, species extinction is accelerating due to climate change, and projected to continue in the future.178 Scholars and policy makers have long speculated about the inevitable increases in human conflict as entire populations migrate or suffer from famine or drought due to climate change.179 The increasing costs of not doing anything effective —and thus allowing such unintended consequences to GROW— has to be calculated against the possible and still hypothetical unintended consequences of carbon sequestration methods. Due to the rapidly collapsing climate status quo, the deadly costs of doing “nothing more” are very steeply increasing “Policy Purists” who advocate “carbon cuts or nothing!”— which was perhaps an appropriate attitude and approach twenty years ago — are now possibly the greatest hindrance to climate progress and even human survival. There are now rapidly increasing costs of doing nothing can to be measured, calculated and compared, even roughly, against the inevitable cost/benefits of carbon sequestration methods, geoengineering and the R/D of new technologies; the time has now simply passed when ethically “ideal” or “pure” cost free measures were perhaps feasible. The Earth is rapidly heating up to uninhabitable levels, or will in the next years and decades, the polar ice caps and glaciers are melting at unprecedented levels, sea levels are rising and extreme weather events are spreading as well as intensifying; in view of deeply troubling developments, we need to intensify our efforts through a collective commitment to climate policy pluralism and have a variety of strategies, methods and approaches to stabilizing the Earth’s climate; so far, it becoming increasingly obvious—except to rabid climate deniers and ironically environmental purists— that carbon cuts alone simply aren’t working. The Paris Agreement states that, even if fully implemented, the Agreement will leave significant gaps in the action that is needed. Furthermore, what if “Plan A”—the Paris Agreement and the promised carbon cuts—simply does not work in time, or are too little too late? The specter of the similar yet largely unsuccessfully Kyoto Protocol based largely on the same process of providing “promissory notes” concerning voluntary carbon cuts by states, should caution us not to place all our hopes again in only one approach or plan.180 In view of this, we need, a truly experimental approach to try simultaneously other diplomatic approaches and collective methods to prevent further catastrophic climate change. Only when this immediate and ultimate danger is passed can the courts assign final damages for the increasing damages and catastrophic consequences of global climate change. Until that day, we have legal work to do in creating greater capacity, especially for the developing states, by establishing a global legal framework that recognizes the Earth’s atmosphere as a global trust which will be the first critical step in it restoration. Governments, especially the large industrialized ones or MIOPs, already have the money to accomplish this goal of restoration. For instance, according to the Stockholm International Peace Research Institute Global military expenditure in 2015 was an estimated $1676 billion, representing an increase of about 1.0 per cent in real terms from 2014.181 Given this, states have the funds and can devote a significant fraction of this enormous expenditure of funds to actually overcoming climate change in the very near future. To do so requires states to define their current and future national security in terms of ending the threat of climate change; this is becoming increasingly obvious to defense ministries around the world.182 This may require an “Earth Trust Armistice” between the MIOPs during which they help to restore the Earth’s atmosphere. Governments of the United States, China, Germany and the EU as well as Russia—the MIOPs—currently have the necessary funds to overcome climate change and restore the atmosphere to a nonthreatening level to all of life—if they define their national security in terms of ending drastic climate change. The MIOPs—who are also major spenders in arms expenditures—must lead in this effort, especially in view of their historic and continuing contributions to the GHGs that are largely responsible for climate change. Yet, vested interests within governmental bureaucracies are powerful forces to preserve the budgetary status quo unless there are countervailing factors and pressing considerations that a country’s leadership must face and thus force changes within their government. If the Earth’s Atmosphere is internationally recognized as a global trust, then one such factor— however marginal— might be the pressing reality and prospect of such governments being held legally accountable for their proportionate responsibility to restore the atmosphere. If the domestic or regional courts of developing countries vigorously pursue this issue within their own jurisdictions, then the cumulative impact of several court decisions on the spending priorities of the MIOPs may prove to be very significant, especially if the courts find not only states but individual leaders personally responsible. Fortunately, there is a carrot—unlike carbon cuts which are often viewed as punitive by some governments, restoration of the earth’s atmosphere can be a much greater domestic economic stimulus than military spending and thus help create hundreds of thousands of permanent jobs throughout the world. This stimulus result will make any current leader much more popular at home, and even abroad. In short, this goal of atmospheric restoration is still within reach; if there are enough or even the same number of entrepreneurial scientists and engineers that, say, work in defense industries or space agencies among the MIOPS, this goal should be within human possibility to obtain.183 But time is rapidly running out. Our collective capacity to restore the global atmosphere will inevitably degrade due to the increasing damage caused by climate change to the ecologies and economies of the world. Also, there are always the specters fueled by increasing national debts of economic decline or even catastrophic international war. States and peoples must undertake—in the spirit of Gandhi— massive “Experiments with the Truth” and begin sustained diplomatic efforts immediately to restore the atmosphere before we soon simply run out of time.184 V. STRENTHING GLOBAL GOVERNANCE: ACCELERATED AND SIMULTANOUES GLOBAL CLIMATE NEGOTIATIONS In his remarkable book, Crisis of Global Sustainability (2013), Dr. Tapio Kanninen argues that the world must rapidly develop new ways of global governance if it is going, in fact, to survive; the old ways simply are not working on the scale or at the speed necessary now to insure global sustainability.185 In particular, he argues quite persuasively that we need to develop new strategies and ways of thinking to address the unfolding global crisis of climate change. An experienced and accomplished diplomat, Dr. Kanninen’s advice concerning global governance needs to be taken seriously and actually implemented as soon as humanly possible, and not sometime in a hypothetical, and increasing “at risk,” future. Building upon Dr. Kanninen’s ideas, this article argues that the United Nations take immediate evolutionary steps to establish the Earth’s atmosphere as a global trust based on the Charter and fully consistent with its fiduciary foundations in the fiery agony of World War II (Boudreau, 2012)186; in particular, the UNGA may be the only global membership body with explicit trusteeship responsibilities in its Charter that can create the necessary international legal framework for monitoring and maintaining the Earth’s atmosphere as a global trust. As such, it has a critical role to play in addressing and reversing the consequences of human-induced climate change. Consistent with the powers and responsibilities of the UNGA provided by Article 13 of the UN Charter for the “progressive development of international law,” the UNGA specifically can initiate the drafting of the appropriate treaties necessary to allocate the legal proprietary and proportionate responsibility for cleaning up the global atmosphere among all its members.187 This proportionate state responsibility will then apply to those that have significantly contributed to this problem and can afford to undertake restoration restitution as well as develop the necessary research and technology to accomplish greater efficiencies in carbon sequestration. For instance, specific treaties could address international agreements concerning commitments to accelerated research and development of mass carbon sequestration techniques, or to these technologies’ deployment. Such legal codification must continue until the danger is fully averted. VI. REDOUBLE THE EFFORT: THE NEED FOR DUAL TRACKS – UNFCCC AND UNETS Since the Rio Earth Summit in 1992, UNFCCC has been the main vehicle for all the world’s aspirations and efforts to curtail greenhouse gases; yet, in all those years, there have been dozens of international conferences, many promises, but precious little real progress.188 In the meantime, policy makers, diplomats, scientists, NGO representatives and the media have jetted from one conference to another, leaving an enormous carbon footprint and thus contributing to the very problem that they protest; yet, at the same time, as the news from Hawaii in 2013 indicates, the CO2 PPM has reached the 400 PPM level and is now (2017) at 407 PPM.189 Something else must be tried and implemented immediately as well if we are to avoid catastrophic climate change. Extreme weather events, including record rains, floods, and record hot temperatures as a result of the changing climate is already ferociously engulfing the world.190 In light of this, efforts to reduce the world use of carbon-based fuels are essential and must continue, even if the “promissory notes” of the Paris Agreement are only to be fully implemented until 2020 AD; but we cannot wait to see how or whether states comply, or not.191 At the same time, due to the stakes involved, other international negotiating options or tracks concerning climate change must be opened immediately and diligently pursued as well. We need to try all options until one or more are proven to work. One such possibility is to employ the United Nations General Assembly—the largest diplomatic community in the world²in continuous climate change negotiations in New York; so there is no need for further jet travel to yet another conference. Specifically, the UNGA can meet, under Article 20 of the UN Charter in special meetings or sessions in the spring of every year in NYC to address the critical crisis of global climate change under the danger is overcome.192 At the very least, there should be a combination of “DUAL TRACK” climate negotiating efforts designed to: a) cut carbon emissions; the Paris Agreement is the latest effort in this regard.193 (COP—UNFCCC) as well as: b) Restore the atmosphere as a global trust for present and future generations; such diplomatic efforts can occur within the context of the UN Environmental Trusteeship System or UNETS, centered in the UNGA, that encourages the development of international law through initiating specific treaties that seek to promote the restoration of the Earth’s Atmosphere (UNGA-UNETS).194 Legal trusteeship is fully consistent with its origins and purposes of the United Nations; specifically, the United Nations as a whole, and the UNGA in particular, had its origins in the fiduciary promises that the Allied Powers made to their own and others peoples—including the conquered, colonial and neutral peoples of the world, in order to mobilize them and help win World War II.195 The point is that the concept and application of international trusteeship can be found in the fiery fiduciary foundations of the UN Charter itself, whose drafting began even as fighting in Europe and the Pacific continued. In fact, I argue elsewhere that the UN charter is a combination of treaty and trust law.196 As such, the UNGA with all its current political fault-lines and past failures is a beckoning resource of international diplomacy whose role can be greatly expanded by initiating a second track of international diplomacy aimed at creating UNETS and thus accelerating dual track climate negotiations aimed at restoring the Earth Atmosphere as a Global Trust. There are still a variety of ways that UNETS could be developed and employed in the desperate struggle against climate change. First, the UNGA could, based upon Articles 16 and 85 of the UN Charter, approve a single trusteeship agreement that recognizes the “area” (Article 85) of the Earth’s atmosphere as a global trust.197 This could be one beginning of the “United Nations Ecological Trusts” or UNETs. This could be done immediately through a vote in the UNGA. At the same time, it must be pointed out that it is patently not true that the Trusteeship System in the Charter refers only to land, peoples or “territories” – but that is a subject of another essay.198 In this way, all states of the United Nations become trustees of the Earth’s atmosphere and establish their proportionate responsible for its immediate restoration. Second, the large defunct Trusteeship Council could be reconstituted as the Environmental Trusteeship Council; since this possibility has already been explored elsewhere, it won’t be elaborated upon here except to say that Article 85, para. D of the Charter can be construed to provide the Council with the authority to examine a “trusteeship agreement” that singularly and specifically recognizes the Earth’s Atmosphere as a Global Trust.199 Finally, the UNGA meeting as a whole in the spring of every year can initiate the necessary studies and initiate specific treaties, especially in cooperative science, to promote the restoration of the Earth Atmosphere as a Global Trust; for instance, despite the lateness of the hour, the world is not yet fully mobilized its peoples or scientists to conserve energy, research and develop (R&D) the appropriate large scale green and renewable technologies needed to be deployed to overcome climate change; instead, in many developed countries, and now especially in the United States, life seems to simply go on as though everything is normal! Yet, despite these mass delusions, there is desperate need to implement a robust policy pluralism based on Gandhian Experiments with Truth—that employs all the necessary science and R&D to successfully develop and deploy alternative approaches to overcoming climate change, including comprehensive testing and deploying the Iron Hypothesis in the Southern Oceans.200 In short, there is A LOT OF WORK that simply isn’t being done within the context of COP negotiations that desperately needs to be addressed and completed if the world is to overcome successfully the catastrophic challenge of global climate change. In view of this great and growing danger, the guiding rule should now be to create or use every available international forum to address climate change until one or more methods prove to actually be effective and help to reverse the steady, inexorable climb of CO2 and other GHGs in the global atmosphere. UNETS could be a major step in achieving this still possible, yet increasingly perishable, goal. Recognizing the Earth’s Atmosphere as a Global Trust and strengthening mechanisms of effective global governance of the commons by specifically developing UNETS, should be a top priority and a critical area for further research and development. In view of temperature records being broken around the world, we need to do this NOW since we are simply running out of time.

[PARAGRAPH INTEGRITY RESUMES]

VII. CONCLUSION: THERE IS LITTLE TIME LEFT

This article has argued that by expanding upon the important work already accomplished by the Paris Agreement (2015), the UNGA or another group of interested states can help create the international legal framework needed for recognizing the Earth’s atmosphere as a global trust thus helping to create the necessary legal capacity-building among nation-states to monitor, maintain and restore the Earth’s atmosphere for future generations.

Alone of all the Global commons, the Earth’s Atmosphere has no international convention or treaty that provides the global legal framework necessary to preserve and perpetuate it for present and future generations. The UNGA or a group can do this, or at least initiate fast track negotiations leading to a binding treaty. By establishing the Earth’s atmosphere as a global trust, developing states would be able to utilize well-established fiduciary doctrines and remedies to help protect the atmosphere from further abuse and consequent increases in the global temperature. These doctrines, often found within various domestic jurisdictions, include comparative or culpable negligence, unjust enrichment and proportionate responsibility. This article envisions a role for the courts of the world—international, regional, national, and indigenous—in enforcing these remedies to preserve the Earth’s atmosphere as a global trust.

The cruelest irony is that, however proportionate responsibility or other remedies are calculated, most nations and peoples are not responsible for the unprecedented increase of CO2 in the atmosphere. The great majority of people or states simply did not and cannot afford, the burning of such large amounts of carbon-based fuels. This is true from a historical perspective; as we have seen, only a small number of industrialized states are historically or even currently responsible for this disproportionate and profligate use of carbon-based fuels that has resulted in this extremely dangerous development in the Earth’s atmosphere. In view of this, the great majority of peoples and states are entitled to restoration efforts (or restitution) commensurate with the unjust enrichment by a relative handful of states for their massive abuse of a propriety interest that belongs to all. In view of this, recognizing the Earth’s Atmosphere as a Global Trust in an international treaty can be a decisive step in addressing and restoring this critical global commons for present and future generations.201

#### CP’s precedent establishes deterrence of climate harms.

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C. INCENTIVES

This Section completes our analysis by studying the effect of liability in unjust enrichment on the incentives of the relevant parties in relation to different remedy measures. We show that enrichment-based liability improves the incentives of defendants without unduly burdening them and with minimal distortion to the incentives of others.

[\*1090]

1. Measuring Disgorgement

This Section briefly illustrates the operation of the disgorgement remedy, which is designed to remove the incentive to operate in an environmentally destructive manner.324 In some situations, enrichment-based remedies offer better outcomes in this context compared to harm-based tort liability.

To illustrate this issue, consider the following stylized example. Suppose that a firm must choose between high and low levels of GHG emissions and that high emissions are extremely profitable for the firm, but also harmful to everyone else. For simplicity, assume that if the firm chooses high emissions, it invests 1 in production costs (this could be one billion dollars), enjoys an income of 4 from selling its products (so a profit of 3), and causes an overall environmental harm of 10 (in the long term). Conversely, if the firm chooses low emissions, it must make additional investments in more expensive equipment and materials, so production costs equal 2 and income from sales is only 3 (for a profit of 1), but no environmental harm is caused.

Under these simplified assumptions, the socially efficient solution, and the environmentally responsible one, would be to choose low emissions. This is because the overall outcome of choosing high emissions is a social loss of 7, while the outcome of choosing low emissions is an overall social benefit of 1. Yet, absent legal intervention, the firm's private incentive is to choose high emissions for a profit of 3, instead of low emissions for a profit of 1.

Let us now compare two possible legal regimes: a tort-based lawsuit and disgorgement of profits based on an unjust enrichment claim. First, under a tort claim, if the firm is facing a sanction of damages that is equal to the harm, it should theoretically choose low emissions, as is socially desirable. The firm will prefer the lower profit of 1 under low emissions, rather than the profit of 3 under high emissions, which will entail paying damages of 10. This result reflects the general efficiency of tort liability as a deterrent mechanism.325 Yet in practice, as explained above, this efficient outcome is unlikely to be obtained here. The reason for this is that the full harm of 10 is difficult to observe and prove. Tort doctrine, as it now exists, is therefore unlikely to be able to reflect the harm in an appropriate damages award. Even if we know the harm is extremely high, this is insufficient to establish a monetary tort award; rather, compensation will require proof of a specific, measurable harm.326 This means that damages will likely be measured only according to a small fraction of the full harm, or not granted at all. [\*1091] Therefore, a tort claim is highly unlikely to achieve the efficient outcome, and the firm will choose high emissions: the socially harmful yet privately profitable option.

Conversely, under a claim of unjust enrichment, the harm of 10 need not be measured. If the firm chooses high emissions, a claim for disgorgement of profits can be established without measuring this precise harm and linking it to the firm in terms of the but-for test of causation. Rather, it is sufficient to show that the choice of high emissions is generally inefficient and generally harmful, yet profitable for the firm. Under this remedy, the firm will be stripped of any ill-gotten gains, meaning it will not be able the retain the higher profit of 3 it was able to obtain by choosing the high emissions. Instead, it will be allowed only the lower profit of 1 it would have obtained under low emissions. This means the disgorgement payment in this case will equal 2, the sum stripping the defendant of ill-gotten gains in the sense that it brings the defendant to the position they would be in had they acted appropriately and not wrongfully. This mechanism will nullify the firm's incentive to choose the harmful option of high emissions.327 This illustration highlights a simple point: taking away present gains is sufficient to induce optimal deterrence,328 even if the precise magnitude of future harms is presently unknown or difficult to determine.

The effect on the incentive to pollute can be further fine-tuned using different measures of disgorgement. Thus, measuring disgorgement as described above, when the remedy equals the extra profits obtained through the violation compared to the legitimate level of profit, is just one option to operationalize the remedy. A second option would be to take away all profits obtained while the firm is conducting its operation in a manner that constitutes a wrong, and not just the "extra" profits. In the example above, this will mean that if the firm chose high emissions, it will be stripped of all its profits of 3 and will not be allowed to retain even the legitimate level of profit of 1 that it would have secured had it chosen low emissions. This more radical form of disgorgement might be justified for extremely abhorrent acts or when lower levels of recovery are considered insufficient to [\*1092] generate the necessary levels of deterrence. This operation of the disgorgement remedy still fits with the general rationale of the remedy, as the court orders the forfeiture of all profits made through the wrongful conduct.329

Another alternative measure for the disgorgement remedy is to consider the enrichment of the firm as the cost of untaken precautions.330 Thus, it is possible to say that the measure of the firm's enrichment through its wrongful conduct is only the saved costs of the precautions it did not take when it chose high rather than low emissions. Under this alternative interpretation of the disgorgement remedy, the firm will only pay 1 in its disgorgement payment, for the difference between production costs of 2 under low emissions and 1 under high emissions.

This measure of recovery can be used if the other measures are considered too high and lead to overdeterrence or chilling effects.331 This rich menu of remedy options can allow courts to tailor deterrence to appropriate levels. Thus, if courts fear that deterrence is too low and that some companies manage to avoid detection and sanction, higher measures of recovery can be used to account for this. This fits with a key goal of the law of unjust enrichment of stripping wrongdoers of ill-gotten gains,332 thereby ensuring that the wrongful activity does not remain profitable.333

#### Separating unjust enrichment from a predicate legal wrong allows it to ensure that causing environmental harm causes no financial gain.

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CONCLUSION

The law of unjust enrichment provides promising, diverse, and hitherto underdeveloped legal mechanisms for successful climate litigation. The doctrine has two key benefits. First, when defendants engage in clear environmental violations, but the harms are difficult to quantify, the legal concepts of wrongful enrichment and disgorgement of profit can offer effective remedies. Second, when defendants are not technically wrongdoers in the sense required to establish tort liability, concepts of unjust enrichment without a wrong can provide relevant legal responses when appropriate.

The doctrine of unjust enrichment, focusing on gains rather than harms and relaxing the requirements of wrongdoing, is a more natural fit for climate litigation than tort law.339 The climate crisis involves abstract and dispersed harms continuing far into the future, which are difficult to identify, quantify, and attribute to particular actors.340 Additionally, the climate crisis is also driven by activities that are not currently defined as wrongs or violations of specific legal standards.341 This makes tort law uniquely unfit for climate litigation.

By contrast, the challenges of climate litigation are far less daunting from the perspective of the law of unjust enrichment. Processes contributing to climate change are unjust (even if only generally harmful) and highly profitable only for some. From a policy standpoint, the application of unjust enrichment concepts to address the climate crisis is a necessary step. An effective legal response to this crisis must ensure that causing environmental harm carries no financial gain.

### AT: Perm: Do Both---2NC

#### 1. Doing both doesn’t solve. Our entire net benefit is about saying that unjust enrichment can create obligations in the absence of corresponding tort, contract, or statutory law. The perm retains the doctrine’s default setting, which links money awards to an underlying legal right infringement---that’s Smith.

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But is copyright the only alternative to decentralized norms? In this Response, I will argue that Oliar and Sprigman's case for cautious endorsement of the norm system and lack of legal protection is impressive but incomplete. They may well be correct that the current system is the best, considering the alternatives, but they have not [\*11] considered all the alternatives. In particular, the nature of the norms involved and the types of misappropriation they target suggest that some version of misappropriation law and unjust enrichment may be a candidate to add to the institutional mix of devices to deal with joke thieves. Although the dangers of an overexpansive law of misappropriation are well known and counsel caution in any extension into the sphere of stand-up comedy, a more equitable approach--as opposed to the formal law that Oliar and Sprigman take as their baseline and foil--may avoid some of the problems with copyright, mitigate some of the problems with the norm system itself, and do less damage to the systems of norms than would an extension of copyright. Finally, and in a more speculative vein, I will consider the possibility that the expansion of intellectual property law--which partly motivates Oliar and Sprigman to seek a nonlegal alternative--might in part be driven by a lack of any way station between formal in rem property rights on the one hand and community or occupational norms on the other.

CUSTOM VERSUS COPYRIGHT

At every turn, Oliar and Sprigman compare the system of norms with formal copyright law. 6 In this they are well within the usual practice of the law and norms literature. 7 It is certainly most striking when norms supplement, as here, or even contradict formal law, as they do among lobster gangs in Maine in delineating their territories, or among Chicagoans claiming shoveled parking spots on the Windy City's snowy streets. But the fascination with norms as an alternative to law has displaced an older question: when and how should law incorporate norms? Or in an older formulation: when is custom law?

For custom to be enforceable as law--or in a more modern vein, to be adopted into the law--it must possess certain features. To take one oft-cited formulation, Blackstone set out seven requirements for custom to have legal force: antiquity, continuity, peaceable use, certainty, reasonableness, compulsoriness (not by license), and consistency. 8 It is instructive to look at the norms of stand-up comedy through this lens. [\*12] Antiquity could be a problem for the norms of comedy: certainly they do not date back to 1189 or even for a very long time in the United States. They may, however, date to the beginning of the current era in stand-up comedy (that is, the era following Oliar and Sprigman's "post-vaudeville"), and the norms have probably been around long enough to know they are here to stay and are serving a purpose. Continuity and peaceable use both seem to be satisfied, notwithstanding the occasional fracas like that between Joe Rogan and Carlos Mencia, which are really examples of enforcement actions. Comics feel compelled to follow the norm, as Oliar and Sprigman amply document. As for reasonableness, Oliar and Sprigman have made a strong case that the norm serves the purpose of fostering creativity in stand-up comedy by protecting investments in developing material. Whether the norm is consistent with the law in general turns on questions of preemption and possible conflict with copyright--issues to which I return in a moment. Blackstone's remaining requirement is certainty.

As I have argued elsewhere, part of the certainty requirement involves communication of the norm to the relevant duty holders. 9 Customs can be vague, and this problem only worsens when a custom might be enforced outside its community of origin: what makes a spot subject to exclusive rights to work may be obvious to fellow miners in a given area but not so obvious to outsiders or to courts. Something very similar is going on here with the comics' norms. Oliar and Sprigman express concern that the norm against joke theft is too vague and might chill behavior. 10 The norm certainly approaches the outer reaches of copyright near the idea/expression dichotomy, the importance of which in copyright law reflects similar worries. But we would need more empirical evidence to determine whether the norm is all that vague to the participants themselves. To take an example closer to home, academics probably have a clearer sense for what is plagiarism than others do, even though it might be a little hard to articulate to a nonexpert.

So whether the norm of stand-up comedy is appropriate for incorporation into the law is really an open question, subject to further empirical work. Militating in favor of limited enforcement is that the norm itself arose in an intermediate-knit group in which the amount of background knowledge is less than among a smaller, more close-knit group. Consistent with this character of the community, the norm itself [\*13] is somewhat formal. The authors rightly point out that the norm shows a strong numerus clausus-like standardization and simplicity, 11 with a view towards ease of enforcement: if a joke cannot be co-owned and two people are using it, one of them is a thief. Simple priority rules interact with a more complicated social sense of working things out and getting along. There is a danger of enforcing the surrounding relationship-preserving norms in litigation, where relations have broken down. But it is the simplicity in the delineation of the entitlement itself that makes it even a candidate for some kind of enforcement.

THE MISAPPROPRIATION ALTERNATIVE

Another reason that custom is not as welcome at the table as it once was is that the customs that reflected commercial morality mainly have entered the law (or equity) through doctrines of misappropriation and unjust enrichment. These areas of the law are both underappreciated and regarded with suspicion these days. For one thing, the seeming danger of using misappropriation to deal with the appropriation of ideas makes people nervous because of its potential for overexpansion. In this Part, I call this reflexive distaste into question and even suggest that overreaction against it may have contributed to the overexpansiveness of the formal intellectual property rights that Oliar and Sprigman take as the main alternative to the norms of stand-up comics.

The cautionary tale here conventionally starts with International News Service v. Associated Press, 12 in which the Supreme Court held that the use of a competing news service's stories in one's own news service and newspapers is a misappropriation enjoinable by a court of equity. Aware of the criticism that it might be creating a property right in news, the Court declared the protected interest to be quasi-property rather than an in rem right. In his famous dissent, Justice Brandeis criticized the majority for doing precisely what it claimed not to be doing--creating new property rights--in an area in which legislatures are better judges of the situation. Perhaps more importantly for present IP debates, Justice Brandeis also made a strong case for a presumption that information exists in the public domain, such that where the limited IP protections provided by Congress (and to a lesser extent state law) do [\*14] not apply, information is "free as the air to common use." 13 Brandeis' dissent has been taken as a clarion call for IP skeptics ever since. 14

Although unfair competition is treated as an adjunct to trademark law these days, at other times and in other legal systems it has been closely associated with unjust enrichment. 15 Some commentators have also seen an implicit theme of unjust enrichment in intellectual property law itself. 16 The problem becomes how to prevent this theory from becoming too broad, both in order to protect the public domain and to avoid preemption by copyright or patent law. 17 Although the doctrine of misappropriation can be viewed as preventing a competitor from reaping where he has not sown, there needs to be a limit to this principle. 18 Such concerns apply to unjust enrichment more broadly, so that although one can speak in general terms of how one who is unjustly enriched at another's expense is liable in restitution, 19 the problem lies in defining what enrichment is unjust. Some see unjust enrichment as a substantive and expansive concept, while others see it as merely an organizing principle for thinking about liability, the main sources of which come from other branches of law. 20

Misappropriation also connects with custom. Richard Epstein has argued that because news organizations had a norm of respecting hot news and would only use it as a tip for independent investigation, the result in International News Service is correct for being in accord with custom. 21 Whether Epstein's conclusion follows turns in part on the informational demands that the custom makes in light of the set of duty [\*15] holders. Limiting the duty holders to direct competitors helps. If anything, the custom among stand-up comics is less vague than the one in International News Service governing "hot news." The anti-joke-stealing norm does not require defining what is hot (or what is funny, for that matter). But it is much more expansive, because it has no time limit at all, although some temporal limitation might appropriately be grafted onto a misappropriation claim, whether under the doctrine of laches or otherwise.

My purpose here is not to argue for extending International News Service to jokes. Indeed, Oliar and Sprigman advert to some of the problems such an approach could present. One, just noted, is that the custom may be too expansive, and this is always a concern with incorporating industry customs into IP law. 22 Too expansive use of custom, particularly as the set of duty holders grows, would pose large information costs and subvert the numerus clausus. 23 Would such a misappropriation claim in the realm of stand-up comedy derogate from the public domain more or less than copyright? The set of duty holders is far smaller than in copyright, which is in rem. Would misappropriation threaten to displace the existing norm and its informal enforcement mechanism as much as copyright would? It is hard to say, but unlike copyright, a misappropriation regime would dovetail substantively with the comedians' norm because a large amount of the content of the misappropriation regime would derive from the norm itself. Would use of equity-style judicially-managed misappropriation law invite less rent seeking than would industry-specific statutory IP regimes, which Oliar and Sprigman rightly view as rife with rent-seeking possibilities? 24 Finally, would use of the norm in the law make it less certain than would informal enforcement or arbitration within the stand-up world? The fact that, at least in contractual disputes, parties in the same business often prefer what appear to the outsider as formal bright line rules should give us pause. 25 But although Oliar and Sprigman very convincingly argue that the norm system is probably [\*16] better than any version of formal copyright, they leave unaddressed the question whether the norm should be supplemented with an equity-style misappropriation theory based on unjust enrichment.

The larger question here is whether an ex post equity-style standard based on morality and existing norms would be better or worse than formal law and norms alone. This is a difficult question in general but might be easier to assess in a given business like stand-up comedy. At the very least, misappropriation and the law of equity do pass the laugh test.

LAW AND EQUITY IN INTELLECTUAL PROPERTY

Finally, we might entertain a hypothesis about the nature of law and equity in intellectual property. What if our fears of equity and the "Chancellor's foot" 26 and of expansive readings of International News Service--which was itself an equity case--have led to the kind of overexpansiveness in the formal law of IP that troubles Oliar and Sprigman (and many others)? There has always been a suspicion of equity and the need to keep it cabined (for example, only acting in personam, and only when the legal remedy is inadequate and not in derogation of property rights) but after the fusion of law and equity, our view of formalism versus context-based discretion has become polarized. Some want to banish judicial discretion and others want contextualized decisionmaking to be available at all times.

#### That specifically can’t solve climate change, where harms are distant, indirect, incalculable, and stem from legal behavior, making a standalone doctrine of unjust enrichment key---that’s Gilboa.

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This Part reviews existing legal frameworks currently used in the governance of the climate crisis, with an emphasis on domestic regulation, international treaties, and tort litigation. It shows that existing legal tools fail to offer effective solutions for two main reasons. First, short-term monetary incentives, coordination problems, and free-rider effects make climate change particularly difficult to regulate, thereby contributing to its status as a "super wicked" problem.89 Second, the harms associated with the climate crisis are mostly future harms with complicated causal histories,90 while incentives to profit are immense, immediate, and direct.91 By clarifying these points, this Part serves as a background for our argument in Parts III and IV, where we show the promising potential of the doctrine of unjust enrichment as a response to the tragic puzzle of the current legal treatment of the climate crisis.

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A person unjustly enriched at the expense of another must make restitution of any undeserved benefits.180 Subject to some interjurisdictional variation,181 this is [\*1068] the general maxim of the law of unjust enrichment, at times also referred to as the law of restitution.182 This maxim is typically divided into three key elements: (1) the defendant's benefit or enrichment, (2) the key normative requirement of the injustice of that enrichment, and (3) the fact that the enrichment is at the expense of another.183

The legal categories associated with the law of unjust enrichment allow for some degree of judicial discretion, as this area of law is often considered a flexible residual category,184 meant to provide equitable solutions where more established legal categories run out.185 In particular, there is some flexibility in the factors that can render the defendant's enrichment "unjust" in different situations.186 This flexibility makes the law of unjust enrichment a promising avenue for climate litigation, as we discuss below.187

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Note that in all such cases, sanctions from other areas of law, including regulatory fines or tort damages, are supposedly available, since the requirement of "wrong" is satisfied.237 Yet, these sanctions often prove insufficient.238 Thus, pollution in violation of regulatory standards is often profitable for companies because regulatory penalties for such violations are set too low.239 An added remedy coming from the law of unjust enrichment can therefore be beneficial. In particular, a sanction based on the disgorgement of profits can prove helpful in such cases to eliminate the monetary incentive to violate regulatory standards. Similarly, tort suits can also be based on a scenario in which commercial actors acted in violation of environmental regulations. Despite the clear wrongfulness of the action, in such cases, the resulting harm may be difficult to measure and attribute to the specific action. Therefore, a tort action is very likely to prove ineffective due to a failure at the causation stage.240 Enrichment-based liability can sometimes overcome these hurdles.

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Some commercial activities greatly contribute to global warming without constituting a wrong under current definitions. That is, some profitable undertakings entail high levels of GHG emissions even when they involve no violation of any specific environmental regulation or standard. Can gains obtained through such activities be considered unjust enrichment, and if so, under what circumstances?

As explained above, the law of unjust enrichment recognizes the possibility of liability even when the defendant committed no wrong.269 Such liability attaches in cases in which the defendant enjoyed a windfall they did not pay for or held assets that did not rightfully belong to them.270 This applies, for instance, in the cases of mistaken payment,271 medical treatment in an emergency,272 and a temporary injunction that was ultimately reversed.273 In all of these cases, the defendant unjustly benefited at the expense of others, even though they did not act in violation of any specific legal standard.274

#### 2. The perm reiterates that unjust enrichment law can create remedies, but not freestanding substantive obligations. That means it can’t solve the net benefit.

William Montgomery 22, J.D. 2022, Tulane University Law School; A.B. 2015, Harvard University, "Polluter Disgorges: Climate Accountability and the Law of Unjust Enrichment," Tulane Environmental Law Journal, vol. 35, Summer 2022, p. 165

I. INTRODUCTION

A new wave of litigation brought by local governments seeks to hold major oil and gas companies liable for ongoing and imminent harms they are experiencing as a result of a changing climate. The plaintiffs, in large part, are pursuing familiar toxic tort claims like nuisance and trespass in a (somewhat) novel context. In contrast to an earlier wave of nuisance litigation, which tended to target greenhouse gas emissions from major sources like power plants, these lawsuits instead target the production, [\*166] marketing, and sale of large volumes of fossil fuels with full knowledge of their harmful effects as the actionable "wrong." Assuming these plaintiffs are eventually able to argue their cases on the merits, how would they go about tying this wrong to specific harms, which are potentially unlimited in scope? This Comment explores how the law of unjust enrichment might be able to provide a way out of this issue by reframing the lawsuits as an occasion to seek restitution of the defendants' calculable, finite gains rather than compensation for the plaintiffs' incalculable, and in some sense infinite, losses.

Unjust enrichment has deep roots in the common law, but it remains a slippery concept for judges, practitioners, and academics alike. The principle developed in parallel in courts of law and equity before American commentators developed a unified theory of unjust enrichment as the legal basis entitling claimants to restitution, or gain-based remedies. After a period of relative dormancy, unjust enrichment has enjoyed a revival in the past few decades in scholarship and in practice, where litigants have invoked the concept in efforts to obtain reparations for slavery and reimbursement of public medical expenses from tobacco companies. Part II traces this history in an attempt to distinguish the "narrow" view of unjust enrichment currently favored in American law from its aspirational "broad" form, which would demand restitution of any enrichment that is unjust. Taking the narrow view as a starting point, Part III then discusses two ways the concept might be leveraged by local government plaintiffs in climate litigation against so-called carbon majors.

II. A BRIEF HISTORY OF RESTITUTION AND UNJUST ENRICHMENT

A. Broad and Narrow Conceptions of Unjust Enrichment

Though the principle of unjust enrichment can be traced back to Roman law (most directly through its modern analogues in civil law jurisdictions), 1commentators generally regard Lord Mansfield's decision in the English case Moses v. Macferlan 2as the seminal common law case articulating the doctrine of unjust enrichment. 3In that case, Moses had [\*167] endorsed several promissory notes for Macferlan on the condition that Macferlan would not sue to enforce the endorsements. 4When Macferlan sued anyway and won, Moses brought a new action to recover the money Macferlan got from the judgment on the grounds that he should not be able to keep it because he broke his agreement not to sue. 5Moses creatively pleaded his case as an action for "money had and received" - one of the old "common counts" for recovering payment for goods or services given at the defendant's request in the absence of an express contractual provision 6- but Mansfield noted that the facts of the case would not support such a claim. 7Nevertheless, Mansfield found for Moses on the basis that it would be unjust for Macferlan to keep the money: "If the defendant be under an obligation, from the ties of natural justice, to refund, the law implies a debt and gives this action, founded in the equity of the plaintiff's case, as it were upon a contract (quasi ex contractu, as the Roman law expresses it)." 8

The pronouncement that a plaintiff could be entitled to recovery simply because "natural justice" demanded it was "shockingly out of place" in a court of law at the time. 9Open-ended appeals to a sense of justice were supposed to be the province of separate courts of equity (or "chancery"), which had the discretion to "step in" and provide special relief in situations where the rigid, inflexible rules of the common law yielded an unjust outcome. 10But here, at least on one reading, Mansfield used the broad, open-ended principles of justice and equity as the basis for granting a legal remedy (through the fiction of an "implied in law" or "quasi-" contract), likening the situation to one of failure of consideration or mistaken payment where the law would step in to prevent a defendant from unjustly retaining a benefit. 11Mansfield even characterized the action as an " equitable action, to recover money, which ought not in justice [\*168] to be kept," one that "lies only for money which, ex aequo et bono, the defendant ought to refund." 12

The ambiguities of Mansfield's opinion embody the debates that courts and commentators continue to struggle through centuries later. 13Is unjust enrichment a hard-and-fast legal rule or a general principle allowing a court to invoke its equitable discretion? Is it an independent source of obligation (akin to contract and tort) or a rationale underlying remedies aimed at reversing the defendant's enrichment? For what it's worth, Mansfield's contemporaries were at best skeptical of the idea that unjust enrichment could constitute its own freestanding source of liability. 14Nevertheless, the concept of unjust enrichment found its way across the pond and into eighteenth and nineteenth-century American court decisions, both on the legal side in cases of mistaken payment and part performance of employment contracts as well as on the equity side as a basis for granting restitution for mistaken improvement to property. 15Indeed, the outcome of some of those cases could not have been explained by principles of contract or tort, implying the existence of a third source of obligation which demanded restitution in certain circumstances. 16

Beginning in the late nineteenth century, scholars attempted to organize these concepts into a coherent body of law called "restitution." 17This effort reached its apex with the publication of the Restatement of Restitution in 1937, which argued that seemingly disparate restitutionary obligations and remedies, from the "quasi-contract" of Macferlan to equitable remedies like constructive trusts and subrogation, were all animated by the singular concern of preventing unjust enrichment. 18Thus, the Restatement authors submitted, "[a] person who has been unjustly [\*169] enriched at the expense of another is required to make restitution to the other." 19

Some commentators found this approach misguided. 20Simply put, their criticism was that the law of restitution - in the sense of gain-based recovery (as contrasted with compensation or loss-based recovery) 21- was bigger than the law of unjust enrichment. 22On this view, not every restitution necessarily proceeds from an instance of unjust enrichment. Peter Birks, a prominent scholar of the subject, argued that cases of unjust enrichment were properly viewed as those concerning some form of mistaken payment (e.g., accidentally paying double on a debt), where a plaintiff does not assert a wrong but still demands that the enrichment should be retuned, separate from instances where the obligation to make restitution flows from the breach of a contractual obligation or a general duty of care. 23In fact, he maintained that the Macferlan decision was correctly understood as a case of restitution for a breach of contract: not of the implied contract that Mansfield described in his opinion, but of the agreement that Macferlan initially made not to sue on the endorsements. 24Moreover, it could not be "unjust" in itself for Macferlan to keep the money because it was obtained by way of a lawful judgment, which was a thoroughly sound and legal basis for the enrichment. 25

Birks's view could be characterized as a "narrow" conception of unjust enrichment - a principle that demands restitution of a benefit whose retention would be unjust, but only in those cases of mistaken payment where the source of the enrichment cannot otherwise be tied to a breach in contract or tort. The "broad" conception embodied in the First Restatement - that unjust enrichment demands restitution of any benefit whose retention would be unjust - held some appeal for mid-century scholars and judges, but they primarily described it as an equitable [\*170] principle guiding the crafting of remedies in novel cases. 26A survey of twentieth century law school curricula similarly indicates little interest in the broad conception among American lawyers, with no schools offering standalone courses in unjust enrichment or restitution. 27The possibility of unjust enrichment standing alongside contract and tort as an independent source of private obligation in American law appeared dim.

B. The Third Restatement and the Modern "Restitution Revival"

Amid renewed scholarly interest in the subject, 28the American Law Institute published a Third Restatement of Restitution and Unjust Enrichment in 2011. 29It carried forward the central organizing principle of the First Restatement that the law of restitution is the law of preventing unjust enrichment: "A person who is unjustly enriched at the expense of another is subject to liability in restitution." 30It emphasized, however, that "the tradition from which we receive the modern law of restitution authorizes a court to remedy unjust enrichment wherever it finds it, but not to treat as "unjust enrichment' every instance of enrichment that it regards as unjust." 31Pointing to Mansfield's statements in the Macferlan decision, it criticizes the view of unjust enrichment as something "identifiable ... by the exercise of a moral judgment anterior to legal rules[,]" expressing concern that in this understanding the concept is "at best, a name for a legal conclusion that remains to be explained; at worst, an open-ended and potentially unprincipled charter of liability." 32"Notwithstanding the potential reach of the words, and Lord Mansfield's confident reference to "natural justice[,]'" the authors argue, "the circumstances in which American law has in fact identified an unjust enrichment resulting in legal liability have been those and only those in which there might also be said [\*171] to be unjustified enrichment, meaning the transfer of a benefit without adequate legal ground." 33

In other words, the Restatement came down firmly on the narrow conception. Enrichments were only "unjust" if they lacked an adequate legal explanation, regardless of whether they were "unjust" in some broader natural law sense. Unjust enrichment would therefore look to other areas of the law to identify those instances where an enrichment lacked an "adequate legal ground." For example, benefits acquired by tort (e.g., nuisance or trespass) or breach of a fiduciary duty are unjust enrichments entitling the claimant to "Restitution for Wrongs" (the title of Chapter Five) because the acquisition does not have a lawful explanation. 34Similarly, opportunistic breach of a contract will also entitle a claimant to disgorgement of the defendant's profits, here relying on the law of contract to label the enrichment unjust and without lawful explanation. 35Where the Restatement imposes liability for unjust enrichment without relying on the law of tort or contract for the source of the obligation, it does so in limited, well-defined circumstances. These include Birks's paradigmatic example of the mistaken payment (e.g., § 6 "Payment of Money Not Due" or § 7 "Mistaken Performance of Another's Obligation"), performance rendered under an unenforceable contract ( § 31), and emergency interventions to protect another's life or property (§§20 and 21). In sum, unjust enrichment "fills in the space around consensual transfers of wealth," but the measure of consent depends on principles of tort and contract except in certain well-worn, uncontroversial situations like mistaken payment. 36Under the Restatement's conception of unjust enrichment, a claimant is not entitled to restitution simply because the transfer was unfair or unconscionable. 37

Despite this trend toward a restrictive view of unjust enrichment in American jurisprudence, a number of litigants have invoked the broad conception in asserting novel claims to restitution that do not neatly fit within the narrow categories provided by the Restatement. One notable example lies in cases involving shared assets between non-married domestic partners, where courts have extended the principle to allow for [\*172] cohabitants to "raise claims based upon unjust enrichment following the termination of their relationships where one of the parties attempts to retain an unreasonable amount of the property acquired through the efforts of both." 38The broad conception has also been invoked in search of remedies for vast social and historical injustices in the United States. In the early 2000s, a group of plaintiffs descended from people enslaved during the antebellum era filed suit against eighteen private companies whose predecessors they alleged profited from slavery and the slave trade, in part on a theory of unjust enrichment. 39On this count, the plaintiffs argued that the defendants' failure to pay for the enslaved workers' labor allowed them "to retain a benefit at the expense of plaintiffs and their ancestors" and sought a "constructive trust on all profits Defendants gained from slavery [and] restitution in the value of Plaintiffs' ancestors' slave labor and Defendants' corresponding unjust enrichment." 40Though the case was dismissed on statute of limitations and justiciability grounds, 41the potential connections between reparations for slavery and the law of restitution and unjust enrichment continue to be the subject of intense scholarly interest. 42

The broad conception arguably played a pivotal role in the tobacco litigation of the 1990s, which is often viewed as an obvious framework for climate litigation against oil and gas companies. 43In particular, it was a central feature of Mississippi's lawsuit that ultimately resulted in the first settlement obtained by any state, totaling $ 3.3 billion. 44Mississippi brought the claim precisely because tort actions by private parties had failed, instead arguing that the tobacco companies were unjustly enriched at the State's expense by forcing the medical costs of their addictive and harmful product off their own books and onto Mississippi's Medicaid, [\*173] welfare, and employee benefit programs. 45The State explicitly relied on an expansive, Mansfield-ian theory of unjust enrichment: it did not assert any wrongdoing or substantive breach of duty or contract, but merely that justice and equity entitled it to restitution of the costs the defendants saved by not having to pay for the known health consequences of their product. 46While we will never know what role the broad unjust enrichment theory played in the companies' ultimate decision to settle - and some commentators have expressed great skepticism over whether it would have succeeded at trial 47- the "restitution for externalities" argument that Mississippi advanced is undeniably a compelling one. And one that is readily applicable to the climate context.

III. TWO PATHS TO RESTITUTIONARY REMEDIES IN CLIMATE LITIGATION

American law has generally shied away from the "broad" conception of unjust enrichment as a principle forbidding any unjust transfer of benefits at the expense of another. While some commentators have attempted to revive this broad view as an independent source of obligation in the common law on par with contract and tort 48- undoubtedly a worthwhile and important project - in this Comment, I work within the "narrow" conception as a starting point for exploring the doctrine's potential applicability to the emerging "second wave" of state-level lawsuits brought by public entities against carbon majors. 49More specifically, in this Part I examine two potential paths to restitution that appear conceivable under the narrow conception: (A) "freestanding" unjust enrichment claims, where plaintiffs confer a benefit on defendants by undertaking emergency interventions to protect life and property from the effects of fossil fuel-driven climate change; and (B) "parasitic" unjust enrichment claims, where the unjust enrichment flows from the defendants' tortious conduct.

#### 3. Unjust enrichment must provide restitution separately. The requirement to fuse it to a law violation essentially nullifies the precedent.

Harvard Law Review 20, "The Intellectual History of Unjust Enrichment," Harvard Law Review, vol. 133, 04/01/2020, p. 2077

C. Attempted Fusion Across Law and Equity

Given unjust enrichment's development in both common law and equity, it became a compelling candidate for fusion. This section traces the history of this attempt, arguing that the fusion of law and equity in the United States plays an explanatory role in unjust enrichment's relative lack of popularity. A bridge between equitable remedies and the common law doctrine of quasi-contract was underway in the late-nineteenth century within U.S. courts. Scholars built on early decisions to fashion a theory of unjust enrichment that straddled both common law and equity, culminating in the 1937 First Restatement of Restitution. The timing coincided with the realist-driven fusion of common law and equity in federal and state courts, which may have contributed to a mischaracterization of unjust enrichment as primarily an equitable doctrine. Unjust enrichment came to be seen as a product of the judge's conscience, rather than a source of interpersonal obligations equally as rooted in our law as contract and tort.

There is much at stake in deciding whether to treat unjust enrichment as an equitable or legal principle. In many ways the merger of law and equity remains elusive in the United States, and equity is still viewed as "subordinate, extraordinary, or unusual." 127Equitable doctrines gained a reputation as too expansive, ill-defined, and discretionary, and equity stopped being taught as a required course in American [\*2090] law schools. 128The law is also littered with "remnants of equitable tests that continue to operate as prerequisites for access to certain remedies." 129The irreparable injury rule is sometimes applied to deny plaintiffs a remedy for unjust enrichment. 130The irreparable injury test "commands that no equitable remedy will flow if adequate legal remedy exists." 131But applying the irreparable injury rule makes little sense in the context of unjust enrichment if unjust enrichment was itself a "legal remedy" stemming from common law. Misclassification has further consequences given that only litigants with common law claims have a right to a jury trial. 132

The bridge between equitable remedies and common law quasi-contract began in the nineteenth century with American courts, which responded in varying degrees to legislative mergers of law and equity. 133In an 1885 Indiana Supreme Court case, Peirce v. Higgins, 134the court provided an equitable remedy for a quasi-contractual claim. 135First the court explained that subrogation, the requested remedy, is an equitable one: "[T]he right results more from equity than from contract or quasi contract." 136Nevertheless, "[T]he principles of equity entered into that contract as a silent but potent factor . . . . [The] parties in contracting assume that the law is one of the elements of their contract." 137Another early example of attempted fusion is a federal case from 1887 in which the court viewed the equitable remedy for mistaken improvers as an equitable defense to an action at law. 138The court explained it had the power to combine equity and common law because the state legislature had "obliterated the line between equitable and legal defenses." 139

Despite the scholarship of Ames and Keener, twentieth-century scholarship and case law most often considered unjust enrichment in quasi-contract and equity separately; even so, scholars increasingly [\*2091] noted similarities in the subjects. 140In 1937, the American Law Institute officially recognized the unity between contracts implied in law and equitable remedies based on the principle of unjust enrichment in the First Restatement of the Law of Restitution: Quasi Contracts and Constructive Trusts. 141The original name included the "Law of Restitution and Unjust Enrichment," but this was considered too long of a title. 142The name has been almost universally disparaged. Professor Peter Birks critiqued it best:

The series 'contract (or, larger, consent), wrongs, unjust enrichment, and other causative events' is on its face a well-dressed series in which every term is of the same kind. It is a classification of the events which generate legal rights and duties. When we substitute restitution for unjust enrichment, we appear to have invited a cuckoo into the nest. One term now refers, not to a cause, but to an effect. 143

Despite the blunder in name, the First Restatement was an important advancement and had a tremendous impact in the United States and abroad. The choice of organization separated quasi-contract from the Restatement on Contracts, and separated constructive trusts from the Restatement on Trusts. 144Sitting side by side, these two fields represented the law of "restitution," straddling both common law and equity. The Reporters, Professors Austin Scott and Warren Seavey, explained this unification thus: "In bringing these situations together under one heading, the Institute expresses the conviction that they are all subject to one unitary principle which heretofore has not had general recognition. In this it has recognized the tripartite division of the law into contracts, torts and restitution . . . ." 145The Reporters were attuned to criticism that unjust enrichment was "so broad as to be meaningless." 146They responded that tort law turns on the definition of broad terms such as "wrong" that have been defined through an extensive set of rules, many of which are attributed more to history than to logic. 147The same could be said for "unjustified" within the law of unjust enrichment. As for unclear doctrinal boundaries such as cases where facts could give rise to a claim in both contract and unjust enrichment or in [\*2092] both tort and unjust enrichment, 148they argued that the plaintiff could choose which claim to bring based on what elements could be proven or the remedies available. 149

Many scholars of the history of unjust enrichment have spoken of a golden age after the First Restatement during which scholars and courts increased their interest in the field. 150This golden age is said to have been followed by a decline around the 1970s. 151The decline is often attributed to the increased focus on public law in American law schools. 152However, it may be that the golden age of unjust enrichment never took place. A survey of law school curricula shows that contract and tort, but not unjust enrichment, were required first-year courses between 1949 and 2010. 153Courses on equity were popularly required until at least 1950, but then largely disappeared from required curricula by 1969. 154Some note the availability of electives, such as Harvard's restitution course taught almost every year between 1902 and 1978, 155but the existence of an elective hardly shows that law schools contributed to a widespread understanding of unjust enrichment as a source of [\*2093] private obligation akin to contract and tort. The relative paucity of relevant required courses can be observed in the following table 156:

[TABLE OMITTED]

Between the 1840s and 1940s, most state courts haltingly merged equity and law procedurally, and in 1938 so did federal courts. 157This meant that courts could address common law claims and equitable claims as they arose in the same case without the jurisdictional and procedural hurdles that would normally accompany asking for a "second look" in equity. 158The First Restatement, with its extensive references to legal technicalities based on the distinction between common law and equity, was lost in translation in a world governed by the new rules of civil procedure. 159But the changes in procedure, instead of making it [\*2094] easier to access the equity side of the court system, may have discouraged the use of equitable principles. 160

Meanwhile, after the law-equity fusion of unjust enrichment in the First Restatement, courts struggled to understand the extent to which "unjust enrichment" should be categorized as an equitable action. 161The Kentucky Supreme Court, in a 2017 case where a building owner failed to pay a contractor, and thus a subcontractor's work went uncompensated, considered unjust enrichment to be an equitable, not a legal claim: "Because unjust enrichment is rooted in equity and 'law trumps equity,' courts frequently note that 'unjust enrichment is unavailable when the terms of an express contract control.'" 162The court ultimately decided that the circumstances supported the invocation of equity. 163However, the court could have avoided this hurdle if it had considered unjust enrichment's common law roots.

The fusion of the common law and equity sides of unjust enrichment created ambiguity that would not otherwise have been possible. The role of legal realism in the late twentieth century is crucial here. Realists questioned the validity of legal categories, preferring to see through them to find what was driving outcomes. 164The categories of equity and law meant little beyond providing the cloak that dresses judges' decisions. Debates about the true meaning of equity take on a more theoretical tone when the formal jurisdictional boundary between law and equity no longer exists. 165Unjust enrichment, therefore, could more easily be seen as an equitable doctrine in a common law disguise, especially when the aspirational, natural law underpinnings are emphasized.

[\*2095] Professor Emily Sherwin has argued that many cases in the post-realist world associated unjust enrichment with equity "in a broader sense" despite its common law origins, attributing this to unjust enrichment's Roman antecedents and Lord Mansfield's "expansive" use of the principle. 166Professor Caprice Roberts has addressed this issue, writing: "The ghosts of equity loom over unjust enrichment and restitution law." 167She warns that "[o]ne should not mistakenly assume that restitution liability or remedies are inherently equitable." 168

Scholars writing on the subject in the 1950s and 1960s vacillated between viewing unjust enrichment in its fully "aspirational" form and viewing it in its narrower form where unjust enrichment corrects the application of rigid rules in specific circumstances. Both these flavors of unjust enrichment seem to emphasize the "equitable" side of unjust enrichment, rather than its role as a source of interpersonal obligation. Professor John Dawson wrote in the 1950s that unjust enrichment was "both an aspiration and a standard for judgment." 169But he also thought that it was too broad to be treated as a rule of law and could never be fully realized in judicial decisions. 170Professor Barry Nicholas, writing in the 1960s, characterized unjust enrichment as a corrective, or supplement, to rules of law. 171However, he considered this to be the "principal difficulty" of the doctrine: "[W]hat may to one man seem corrective may to another seem simply disruptive of the settled structure of the law." 172In the 1970s, Professor George Palmer took a view of unjust enrichment that was broad and "equitable": "Unjust enrichment is an indefinable idea in the same way that justice is indefinable . . . . This wide and imprecise idea has played a creative role in the development of an important branch of modern law." 173The scholarly debates on the essence of unjust enrichment may have contributed to judicial confusion about whether to treat unjust enrichment as an equitable, and therefore discretionary, doctrine, or a common law source of obligation.

D. Recent Developments

This section examines recent developments in the law of unjust enrichment, emphasizing contrasts between the doctrine in England and [\*2096] the doctrine in the United States. Combining lessons from these contrasts, this section concludes by offering possible ways to theorize unjust enrichment more effectively.

1. English Development. -- In England, judges and scholars concentrated on defining the source of the obligation itself, treating unjust enrichment as a legal concept and as its own category of law. 174The first judicial recognition of "unjust enrichment" took place in 1942, in Fibrosa Spolka Akcyjna v. Fairbairn Lawson Combe Barbour, Ltd., 175by Lord Wright, a judge who had written a glowing review 176of the First Restatement of Restitution a few years earlier. The court case involved a Polish company that paid for machinery from Britain but never received the product because of the outbreak of war. 177Lord Wright found that an obligation to return the payment to the Polish company arose from the circumstances: "The obligation is a creation of the law, just as much as an obligation in tort. The obligation belongs to a third class, distinct from either contract or tort, though it resembles contract rather than tort." 178Lord Wright contended that "any civilized system of law is bound to provide remedies for cases of what has been called unjust enrichment." 179

Despite Lord Wright's 1942 recognition of unjust enrichment, English courts largely rejected the principle until the 1990s. 180Academics like Professors Robert Goff, Gareth Jones, and Peter Birks were critical in bringing unjust enrichment to England and Commonwealth countries. 181They viewed unjust enrichment as a "principle of justice which the law recognises and gives effect to in a wide variety of claims." 182Goff explained, "I see the law of restitution gradually developing towards the acceptance of a fully-fledged principle of unjust enrichment . . . with the emphasis changing from the identification of specific heads of recovery to the identification and closer definition of the limits to a generalized right of recovery." 183

[\*2097] Birks continued this project by advocating strenuously that unjust enrichment must be viewed as a causative event different from contract and tort. 184Birks argued that "restitution" must mean "gain-based recovery" 185and that this gain-based remedy can arise from contract, tort, and fiduciary relationships, as well as from unjust enrichment. 186In Birks's view, the works of Scott and Seavey, Goff and Jones, and Palmer had attempted to address all instances of cases where the law provided a "gain-based recovery." 187Birks proposed instead that:

[E]very right which can be realized in court arises either from a manifestation of consent such as a contract or independently of consent, as from a wrong, from an unjust enrichment (in the narrow sense) or from some other event. . . . [Unjust enrichment] includes only those enrichments at the expense of the claimant in which the reason for restitution is not contract or wrong. In other words, it includes mistaken payments and all other events materially identical to that central figure. 188

Birks's perspective was that unjust enrichment never occurred as a result of a wrong. If the wrongdoing is considered the causative event, then the source of obligation is the wrong, and the claim should be resolved with the law of tort. 189When a gain-based remedy is given due to wrongdoing, "[i]t is not the law of unjust enrichment which steps in. It is the law of restitution operating within the law of the wrong itself. Restitution is gain-based recovery. All that is happening is that gain-based recovery is made available for the wrong." 190

Perhaps as a result of the focus on the source of obligation in unjust enrichment, the doctrine has become popular in the Commonwealth countries. 191Professor Chaim Saiman has also highlighted the extensive doctrinal treatment of unjust enrichment in English courts as an important factor in unjust enrichment's vibrancy overseas. 192

2. American Developments. -- In the late twentieth and early twenty-first centuries, the United States has seen a renewed interest in unjust enrichment. There has been increased attention in the academy, as measured by the rise in the number of scholars engaged in research and writing on the topic. 193In 2011, the American Law Institute published the Third Restatement of the Law of Restitution and Unjust [\*2098] Enrichment. Some anticipated that the Third Restatement would be "a Cinderella moment" for the law of restitution. 194Roberts has called the Third Restatement the "primary catalyst" for the current "restitution revival." 195

Unjust enrichment has been litigated in creative ways in the United States. Holocaust survivors have brought restitutionary claims in U.S. courts with increasing success. 196There has also been renewed interest in claims for restitution by descendants of enslaved people and by Native Americans. 197The doctrine has been leveraged in settlements between tobacco companies and state governments 198and considered in recent opioid litigation. 199It has also been used in cases between unmarried, cohabitating partners who end up parting ways after building a family and careers together. 200

Saiman attributes some of the success to American embrace of the "natural law underpinnings" that "stress substantive justice over analytic theory." 201He contrasts this with Birksian scholarship that "sees restitution's association with equity as simply a historical accident from the days of the divided bench." 202Roberts has identified positive and negative aspects of the broad natural law view of unjust enrichment, namely that it "simultaneously display[s] beauty while threatening an early demise of the American restitution revival. Beauty exists in the ability of restitution doctrine to adapt and aid cases with unusual fact patterns and unforeseen circumstances." 203

The Third Restatement offers a unique response to historical debates over unjust enrichment. The Restatement rejects the English focus on analyzing the source of the obligation, partly because it seems like an intractable question: "It is by no means obvious, as a theoretical matter, how 'unjust enrichment' should best be defined; whether it constitutes a rule of decision, a unifying theme, or something in between; or what [\*2099] role the principle would ideally play in our legal system." 204The Third Restatement avoids a direct answer to the meaning of unjust enrichment and its doctrinal boundaries: "Such questions preoccupy much academic writing on the subject. This Restatement has been written on the assumption that the law of restitution and unjust enrichment can be usefully described without insisting on answers to any of them." 205

As a response to the instability produced in the post-fusion world, the Third Restatement's rhetoric is decisively against a broad and expansive view of unjust enrichment. 206The Third Restatement worries that usually "natural justice and equity do not in fact provide an adequate guide to decision." 207"[I]t is difficult to avoid," it goes on, "the objection that sees in 'unjust enrichment,' at best, a name for a legal conclusion that remains to be explained; at worst, an open-ended and potentially unprincipled charter of liability." 208But perhaps the Third Restatement's reaction to the dangers of a broad, equitable principle is too extreme. Its approach may make the doctrine overly dependent on historical usages. The definition used by the Third Restatement is "enrichment that lacks an adequate legal basis." 209The "legal basis" lies in other sources of law: contract, trusts, gifts, and so on. Unjust enrichment, then, merely fills in the space around consensual transfers of wealth. While this provides more guidance than a broad theory of natural law, it severely restricts the occasions when a "legally" valid contract can be invalidated by unjust enrichment. 210

Similarly, the Third Restatement relies on tort's definition of wrong to decide whether restitution for a wrong should be granted: "Restitution [for wrongs] is an alternative to damages. The claimant is free to choose restitution when it offers a more favorable recovery, but he may not have both restitution and damages for the same wrong." 211 It leaves unjust enrichment as purely "'parasitic' on other law for the basic judgment of right and wrong." 212As Professor James Rogers argued while the Third Restatement was being drafted: "The black-letter text of the current proposed Restatement might be read as neutral on the question whether restitution is an independent basis of liability." 213However, the [\*2100] comments and reporter's notes "are very clear in stating that the determination of rightful versus wrongful conduct is to be based solely on other law; that is, the unjust enrichment principle plays no independent substantive role." 214

In sum, the Third Restatement often ties unjust enrichment to other sources of obligation and assumes that if a gain-based remedy has been given, then the principle behind the remedy is unjust enrichment.

Conclusion & Lessons Learned

Organizing the source of obligation in law around consent and wrongdoing has long been recognized as inadequate. How can we characterize obligations in the space beyond? Perhaps unjust enrichment provides the background rules against which the will theory of contract emerges. It operates as a form of "Aristotelian justice," which aims to maintain "an equilibrium of goods among members of society." 215If a party would seek to skew that balance, it must justify an unequal transfer of wealth. For too long, U.S. academic writing has displayed little concern for the analytic theory of unjust enrichment. 216 One way forward is to refocus on unjust enrichment as a source of obligation independent from consent and wrongdoing.

Another way forward is to study in more depth the precise strains of unjust enrichment that were employed at common law and those that were employed in the courts of equity. 217By redividing unjust enrichment between law and equity, scholars could give courts a clearer footing as to when they are acting in a discretionary and equitable capacity and when they are applying formal, common law rules. In some ways, this path might make unjust enrichment more easily accessible in the U.S. courts of a post-fusion world.

#### 4. The ‘polluter disgorges’ principle cannot solve if it relies on an underlying tort theory.

William Montgomery 22, J.D. 2022, Tulane University Law School; A.B. 2015, Harvard University, "Polluter Disgorges: Climate Accountability and the Law of Unjust Enrichment," Tulane Environmental Law Journal, vol. 35, Summer 2022, p. 165

"Freestanding" Unjust Enrichment: Emergency Intervention

On its face, the Boulder Complaint seems to assert a claim for "freestanding" unjust enrichment. It plainly states that "Plaintiffs have conferred a benefit upon defendants by bearing the costs of the impacts of climate change while Defendants have not borne those costs, increasing the profits to Defendants[ ]" and that "it would be unconscionable and contrary to equity for Defendants to retain those benefits obtained at the expense of Plaintiffs." 82The plaintiffs here are appealing to a third source of obligation outside of tort and contract, arguing that the defendants were unjustly enriched by letting plaintiffs incur the costs of dealing with changes in the climate caused by their products and that they are entitled to restitution of those gains. In other words, plaintiffs' argument smacks of the "broad" view of unjust enrichment that has become largely disfavored in American law, as we saw in the first section.

But the plaintiffs may yet have an argument that their claim belongs in one of the narrow categories still recognized in American law where unjust enrichment does not look to torts or contracts to determine whether a transfer of benefits lacks a lawful explanation - those situations akin to that of a mistaken payment. 83In particular, the facts of the Boulder case and other similar local government nuisance suits appear to fit within a category of cases that the First Restatement referred to as "Performing Another's Duty to the Public." 84The basic principle of these decisions is that when a plaintiff "performs the duty of another by supplying things or services ... without the other's knowledge or consent," she is entitled to restitution so long as "the things or services supplied were immediately necessary to satisfy the requirements of public decency, health, or safety." 85The most straightforward illustrations of this principle involve cases where a private plaintiff performs the duty of a governmental entity, such as when a person makes repairs to a dangerous city road or abates a "serious public nuisance" like a beached whale. 86

[\*180] Nevertheless, governments have found some success suing private plaintiffs for the costs of abatement under this theory. One notable example is Wyandotte Transport Co. v. United States, a Supreme Court case which involved a sunken barge carrying more than two million tons of liquid chlorine that its owners abandoned at the bottom of the Mississippi River, refusing to salvage it. 87Acting quickly to prevent a catastrophic release of chlorine gas into nearby communities, the United States raised and removed the barge itself and then sought reimbursement for the costs of the operation from the barge's owners, over $ 3 million. 88Citing § 115 of the Restatement for support, the Court held that the government was entitled to this restitution because it had performed the owner's duty in a "classic case" where "rapid removal by someone was essential [to public safety]." 89To put it another way, the government's cleanup constituted a mistaken payment to the defendants that resulted in their unjust enrichment, entitling the government to restitution. 90

Similarly, in United States v. Healy Tibbitts Construction Co., which again involved an abandoned barge leaking oil that the U.S. remediated after the owners refused to do anything, a district court relied on § 115 to characterize the government's attempts to have the cleanup costs reimbursed as one of "quasi-contract" 91subject to a longer statute of limitations than a tort claim. 92The court took care to note that, "The portrait of a polluter indifferently standing idle while its oil spill is neutralized at public expense - and thereafter spiritedly disavowing any responsibility for recompensing the United States - offers as compelling an example of unjust enrichment as has lately been brought before the Court." 93

It is worth noting here that the Third Restatement, with its overriding concern about unjust enrichment becoming "a potentially unprincipled charter of liability[,]" 94attempted to significantly narrow the applicability of this "emergency assistance" doctrine. In particular, the authors emphasized that there could be no unjust enrichment by performing [\*181] another's duty "except insofar as the claimant's intervention has relieved the defendant of an otherwise enforceable obligation," i.e., an independent legal duty for the defendant to act imposed by statute or by tort. 95There are, however, ample examples of courts declining to follow this requirement and continuing to impose "freestanding" liability for unjust enrichment, particularly in cases involving pollution or environmental contamination. In 2009, a New York appeals court denied summary judgment to defendant property owners on New York City's "common-law restitution" claim against them, which sought reimbursement for the costs of cleaning up hazardous construction waste that the owners refused to clean up despite repeated Department of Sanitation orders. 96Relying on one of their earlier decisions in a lead paint lawsuit interpreting § 115, the court stressed that the restitution obligation arose out of the city incurring remedial expenses in fulfillment of "its general duty to protect the public from potential health or safety hazards[,]" and that "no additional privity or duty need[ed to] exist between the [defendants] and the City." 97This line of reasoning is particularly common in asbestos removal cases, where courts have recognized that liability in restitution can be imposed on manufacturers on the grounds that they have "been unjustly enriched to the extent the plaintiff is required to abate a hazard created by [the] defendant[,]" which "constitutes no less of an "emergency' because abatement will require an extended amount of time[.]" 98

Local governments may be able to extend this same logic to "emergency abatements" they have been forced to undertake as a result of changes in local climate driven by carbon majors' products. They would likely be entitled to restitution only for costs they have already incurred in dealing with climate change 99and would also probably be limited to the reasonable costs of the "abatement" as opposed to the amount actually incurred. 100But such claims could still yield significant recoveries.

[\*182] To return to our representative example, the Boulder plaintiffs are careful to note precise costs they have incurred to protect the public from emergencies created by climate change: wages for 900 firefighters responding to a 2010 wildfire, $ 24.6 million for a county-run flood buyout program, $ 170 million for capital improvements to flood control infrastructure, $ 100 million for rebuilding roads destroyed in a 2013 flood, and $ 37.7 million for air conditioning systems in schools where they have historically not been needed. 101Plaintiffs may have a compelling argument that these costs are akin to acting decisively to remediate a shipwreck site or to remove asbestos from a public building in order to protect the public's safety, and that carbon majors would be unjustly enriched if they were permitted to avoid footing the bill. Under the authorities described above, plaintiffs may be able to impose this liability in restitution without having to prove that the defendants had a statutory or tort duty to abate these climate hazards.

C.

"Parasitic" Unjust Enrichment: Restitution for Wrongs

The above section discussed one way that local government plaintiffs might be able to pursue "freestanding" unjust enrichment claims against carbon majors, without having to simultaneously prove liability in tort. But these plaintiffs may also seek restitutionary remedies for tort violations that they are able to prove. This theory of action was once referred to as "waiving the tort" - i.e., opting for recovery in restitution as an alternative to seeking compensatory damages. 102The Third Restatement tends to refer to it as "Restitution for Wrongs," or a duty to make restitution for "gains realized ... in violation of another's legally protected rights." 103In this sense, unjust enrichment claims are "parasitic" on the law of tort for the conclusion that the plaintiff's rights were violated (and that they are entitled to restitution of the defendant's wrongful gains).

Perhaps the most famous example of this principle in action is Edwards v. Lee's Administrator. 104In that case, a cave ran under both plaintiff's and defendant's property, but the only entrance was on the defendant's side. 105As the site was only a few miles away from the famous [\*183] Mammoth Cave, defendant was able to turn the cave into a profitable tourist attraction. 106The plaintiff filed suit in equity for the profits gained from defendant's trespass onto his land, and the chancellor at first instance awarded one-third of the defendant's profits from the tourist attraction, which roughly corresponded to the portion of the cave running underneath the plaintiff's property. 107The defendant appealed, arguing that the cave was useless to the plaintiff without an entrance and that he suffered no real harm as a result of his operating the attraction, but the Court of Appeals upheld this award on the grounds that "a wrongdoer shall not be permitted to make a profit from his own wrong[,]" citing a draft version of the First Restatement. 108In other words, the defendant was unjustly enriched by trespassing onto plaintiff's property and therefore had a duty to make restitution. The enrichment was "unjustified" or "without adequate legal ground" (to use the Third Restatement's language) because it stemmed from a tort committed by the defendant, in this case trespass.

This sort of restitution for wrongs can be extremely valuable in toxic tort litigation because it directly "confronts the profitability of pollution." 109According to the Third Restatement, invasion of someone's legally protected interest entitles a claimant to the "market value" of the benefit obtained by that invasion (e.g., a piece of property's rental value), but a "conscious wrongdoer" who acts "with knowledge of the underlying wrong to the claimant" opens the door to disgorgement, or restitution of all "net profit attributable to the wrong." 110For example, in Branch v. Mobil Oil Co., a district court held that the plaintiffs stated a claim for unjust enrichment by alleging that the defendant oil company used their land to dispose of pollutants, committing a nuisance and entitling the plaintiffs to restitution of the costs the company saved by not disposing of the waste properly. 111Similarly, in N.C. Corff Partnership, Ltd. v. OXY U.S.A., Inc., an Oklahoma appeals court held that plaintiffs had stated a claim for unjust enrichment against another oil company whose drilling operations caused contaminant to migrate into their groundwater so long as the defendant's enrichment was "coupled with a resulting injustice[,]" in this case, nuisance and trespass. 112

[\*184] In this way, where an underlying trespass or nuisance can be proven, the door is opened to restitutionary remedies based on the amount a defendant saves by acting unlawfully. In the above two cases, that amount would have been readily measurable by the costs of either disposing of the byproducts properly or by properly plugging the wells and otherwise cleaning up their drilling operations, respectively. But how would local governments measure the defendants' gains in climate nuisance cases? The Boulder Complaint meticulously notes the astronomical profitability of its two named fossil fuel defendants and their subsidiaries, to the tune of hundreds of billions of dollars since 1988 - the year the United Nations formally endorsed the creation of the Intergovernmental Panel on Climate Change. 113Thus, the "saved costs" in this case that allowed the defendants to make those profits could arguably be the costs associated with changing their business model to focus on producing and selling "cleaner" and less lucrative energy products (rather than continuing to produce and sell fossil fuels). On another, more restrained view, the defendants' saved costs could be measured by their failure to deploy carbon capture and storage (CCS) solutions that could have abated the climactic effects of emissions from their products, perhaps in terms of foregone research and development expenses. The technology is still unproven at scales large enough to make a significant dent in carbon emissions, but the federal government has provided billions of dollars in support for CCS research as well as for specific projects. 114Plaintiffs in these cases could argue that every carbon major had an obligation to make those kinds of large investments themselves given their unwillingness to wind down fossil fuel production, regardless of the current state of the technology.

But no matter how these saved costs are measured, the plaintiffs will have to develop a compelling argument about what share of the defendants' profits they are entitled to. They could take a cue from toxic tort cases, where it is often difficult to tie one plaintiff's injuries to one specific defendant's actions, and devise a statistical formula to identify their city or county's share of the aggregate national "climate risk" created by the defendants. 115The Boulder Complaint suggests a similar approach by carefully alleging the amount of revenue each defendant has generated [\*185] within the state. 116Perhaps they included much of that information to lay a solid foundation for the court's personal jurisdiction over the companies, but one can also imagine a restitutionary argument that the defendants are obligated to disgorge the profits they earned from conducting business in the plaintiffs' communities - in order to prevent them from being unjustly enriched by saddling those communities with the costs of dealing with the fallout from widespread use of their products.

IV. CONCLUSION

There is certainly no guarantee that courts would be willing to extend principles from cases involving sunken ships or unplugged oil wells to cases seeking restitution from carbon majors for the costs of climate change. Victory for these plaintiffs will be an uphill battle no matter how they plead their cases. As tort scholar Douglas Kysar has observed:

Built as it is on a paradigm of harm in which A wrongfully, directly, and exclusively injures B, tort law seems fundamentally ill-equipped to address the causes and impacts of climate change: diffuse and disparate in origin, lagged and latticed in effect, anthropogenic greenhouse gas emissions represent the paradigmatic anti-tort, a collective action problem so pervasive and so complicated as to render at once both all of us and none of us responsible. 117

These observations apply equally to doctrines of unjust enrichment or really any part of the common law, which arose to address the problems of an earlier era, certainly an era before phrases like "collective action" and "anthropogenic greenhouse gas" had entered anyone's vocabulary. But a key feature of the common law is its flexibility, and to the extent that the federal government refuses to rein in fossil fuel use, local governments should be able to make arguments in court as to why oil companies should not be permitted to profit off of a profoundly harmful product that is incurring actual costs to the plaintiff-governments, even if one cannot directly and fully lay the responsibility for climate change at a single company's feet. There could be great value in forcing courts to wrestle with these questions and confront them squarely, regardless of the outcome.