Ecological anxiety disorder Diagnosing the politics of the Anthropocene 生態焦慮症

Cultural Geographies

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January 2013

**Abstract**

The quickly changing character of the global environment has predicated a number of crises in the sciences of biology and ecology. Specifically, the rapid rate of ecological change has led to the proliferation of novel ecologies. These unprecedented ecosystems and assemblages challenge the scientific, as well as cultural, core of many disciplines. This has led to divisive debates over what constitutes a ‘natural’ system state, and over what kinds of interventions, if any, should be advocated by scientists. In this paper, we review the nature of the recent discomfort, conflict, and ambivalence experienced in some sciences. In examining these, we stress emerging and conjoined concerns in ecological scientific communities. Specifically, we identify, on the one hand, an expressed concern that practitioners have been insufficiently persistent and explicit in proselytizing the current risks of human impacts, and on the other hand an obverse concern that many historically common scientific concepts and concerns (like ‘invasive’ species) are already overly normative and culturally freighted. We identify the resulting contradictory condition as ‘ecological anxiety disorder’, announced either as a fearful response to: 1) the negative normative influence of humans on the earth (anthrophobia) or 2) the inherent influence of normative human values within one’s own science (autophobia). We then argue, drawing on the psychoanalytic work of Jacques Lacan, that these paralyzing phobias are born of an inability to address more fundamental anxieties. Only by explicitly enunciating the object of scientific desire, we argue, as Lacan suggests, can scientific practitioners come to terms with these anxieties in a way that does not lead to dysfunction. Using a case example of island rewilding in the Indian Ocean, we provide an alternative mode of resolving and adjudicating human influences and normative aspects in ecology and biology, one that is explicitly political.

**摘要**

全球環境的快速變化斷言了諸多生物學和生態學中的危機。譬如說，生態的急 速變化就導致了眾多新興生態的擴增。這些前所未有的生態系統和組合從科學和文 化上挑戰了諸多學科。這帶來了分裂性的辯論：關於什麼才是“自然”的系統狀態 ，以及，如果有的話，什麼是科學家可以建議的干預。本文中，我們回顧了近年來 幾種科學中的不適、衝突和矛盾的特質。通過審視這些特質，我們突出強調在生態 科學團體中新出現與聯合的憂慮。特別地，我們一方面指出對於從業人員在宣講上 不夠貫徹和明確業已表達的擔憂，另一方面也指出很多歷史上通常的科學概念已經 被過度規範化以致於成為文化負擔。我們把因此產生的衝突的狀況稱為“生態焦慮 症“，用以表示一種對1）人類對地球的負面的規範化的影響；或是2）本學科內固 有的規範化人的價值的畏懼的反應。接下來，我們根據雅各·拉岡的精神分析的理 論，說明這些致瘓的恐懼症皆生自一種無法解決更基本焦慮的無能。如拉岡所講， 我們認為，只有通過明確地表達科學慾望的目標，科學從業者方可克服此種焦慮而 不致功能障礙。利用印度洋島嶼野化一例，我們提供了另一種在生態學與生物學中 解釋及判定人類影響和規範方面的模式，一種明確政治性的模式。

**Keywords**

*Edenic Sciences, invasive species, Jacques Lacan, novel ecologies, political ecology, psychoanalytic geography, rewilding, scientific culture*

**關鍵字**

*伊甸園科學，入侵物種，雅各·拉岡，新生態圈，政治神態學，精神分析地理學，野化，科學文化*

In June of 2011, 18 scientists published a commentary in Nature entitled ‘Don’t Judge Species by their Origins’ in which they argued that threats posed by alien or exotic species are grossly overstated. More radically, the essay suggested that the field of ‘invasion biology’ stands on shaky ground, and that its underlying assumption that a ‘native’ condition can and should be known or restored – was flawed.1 Following a previous line of argument by the commentary’s lead author Mark Davis,2 the essay stressed moreover that given its normative underpinnings, invasion biology might be abandoned altogether as a unique science and subsumed under the broader field of community ecology. Rather than analyzing and extirpating species, the authors insisted, we might learn to accept and live with some ‘novel ecologies.’

2011年六月，十八位科學家在《自然》雜誌上發表了題為“不要以起源來品評物 種“的評論，認為對外來物種的威脅被大大地高估了。更激進的是，該文還暗示“ 入侵生物學”這門學科建立在不穩固的基礎上，並且它所依據的，認為一種“原始”的狀態可能也應該被了解和恢復的假設是有瑕疵的[[1]](#footnote-1)。順著該文主要作者馬克·戴 維斯之前的評論[[2]](#footnote-2)，文中又著重強調因為入侵生物學規範性的基礎，它一門獨立科學 的地位應該被通通拋棄而併入更廣泛的群落生態學。作者堅持說，與其分析和撲殺 物種，我們不如學會如何接受且和一些“新生態圈”共處。

This largely innocuous claim, made in the context of a relatively obscure debate in a specialized field, set a spark and elicited quick responses. In July 2011, a half dozen defiant commentaries and letters appeared in both the journals Nature and Science, signed by hundreds of biologists, ecologists, conservationists, and resource managers, who argued vociferously against Davis and his colleagues.3 Meetings were convened, scientists argued, and calls to battle were raised.

這份在相對模糊的辯論中關於一專門學科所下的無害的生命，擦出火花，並點燃 了迅速的反響。同年七月，六篇公然挑釁的評論和通訊紛紛發表在《自然》和《科 學》雜誌上，由數百位生物學家，生態學家，保守主義者，資源管理人員聯署，歇 斯底里地抨擊戴維斯及他的同事[[3]](#footnote-3)。一時間，會議召開，科學家們爭辯、甚至向對方 宣戰。

There is much to say about this debate and the scientific merits of the various positions, but for our purposes, these are largely beside the point. It is instead the fervency of the debate which raises questions about the status of scientific communities and current trends in the sources and terms of their controversies. Davis had clearly hit a nerve – what invasion biologist Julie Lockwood has called ‘the third rail of invasion biology.’4

這場爭論以及其中多方立場的科學價值盡可詳述，但對本文來說卻不免離題。倒 是爭論之激烈引出了對於科學圈以及當下圈內的爭議的源頭及用語的趨勢之疑問。 戴維斯自然是觸動了一個敏感點，正如入侵生物學家茱莉·洛庫德所稱“入侵生物 學的第三軌”[[4]](#footnote-4)。

What makes a topic like this one the ‘third rail,’ a topic that dare not be broached? In part, it is that the specific topic of alien species carries complex interpretive baggage, lending the debate added cultural freight, as noted extensively elsewhere.5 As we will argue here, however, this single debate is indicative of a larger upheaval throughout what could best be described as the ‘Edenic Sciences’ – understood to include, among others, conservation biology, restoration ecology, and invasion biology. These sciences, though rigorous and significant in every regard, share a tacit epistemological commitment to evaluating ecological relationships explicitly with regard to an a priori baseline – a condition before the Columbian encounter, or a time or place before human contact, or a place of expulsion or return – one Before the Fall. As such, Davis’ call for the acceptance of ‘novel ecologies’ represents an existential crisis for practitioners of what might best be termed, Edenic Sciences. Whether or not invasion science is merely an effort at restorative nostalgia and not a unique science at all, in other words, has stakes for whole ways of doing science.

是什麼使像這樣的一個話題成為“第三軌”而沒人敢碰的呢？一方面，這是由於 關於外來物種的議題承載著複雜的解釋負擔，如在別處詳述過的[[5]](#footnote-5)，這也給予此場爭 論額外的文化承載。然而，我們這裡要討論的，是這場爭論實則意味著一場遍及所 謂“伊甸園科學”的更大的動盪，其中包括保守生物學，修復生態學，入侵生物學 ，等等。這些科學，雖然各方面來講都嚴格且有意義，卻暗藏著認知論約定，來明 確地依照先驗的基準——譬如說哥倫布發現美洲之前，或是人類尚未踏足之前 的時間地點，或是一個可放逐回歸，一個「秋日之前」的地方——來明確地評 價生態關係。因此，戴維斯所呼籲的對「新生態圈」的接受代表著那些可稱為是伊 甸園科學的研究人員的存在主義危機。入侵科學到底是否完全不是一個獨立的學科 ，而僅僅是一場復原性的懷舊病，換言之，完全取決於做科學的方式。

In this paper, we will review the nature of recent anxiety, discomfort, conflict, and ambivalence experienced by research scientists in fields confronting ecological novelty in a quickly-changing world. In examining the anxieties of doing science, we stress emerging and conjoined concerns in ecological scientific communities. Specifically, we identify, on the one hand, an expressed concern in the scientific community that practitioners have been insufficiently persistent and explicit in proselytizing the current risks of human impacts, and on the other hand to the obverse concern that many historically common scientific concepts and concerns (like ‘invasive’ species) are already overly normative and culturally freighted.

本文中，我們將回顧近期在快速變化的世界中面對新興生態的科學家們所經歷的 焦慮，不適，衝突和矛盾的性質。通過檢視從事科學中的焦慮，我們強調生態學社 群中新發生的以及組合的憂慮。特別地，我們一方面指出科學圈中的從業人員在傳 播當前人類影響時的不充分和不明確，另一方面，我們也觀察到一切由來已久的一 切通常的科學概念和顧慮（比如「入侵」物種）已經過度地被規範化以致具有了文 化承載。

We identify the resulting condition as ecological anxiety disorder (EAD), announced either as a fearful response to: 1) the negative normative influence of humans on the earth (anthrophobia) or 2) the inherent influence of normative human values within one’s own science (autophobia). We then argue, drawing on the psychoanalytic work of Jacques Lacan, that these paralyzing phobias are born of an inability to address more fundamental anxieties. Only by explicitly enunciating the object of scientific desire, as Lacan suggests, can practitioners come to terms with these anxieties in a way that does not lead to dysfunction.

我們把這招致的症狀稱作為生態焦慮失調（ecological anxiety disorder; EAD ），其症狀是對1）人類對地球的負面的規範影響（恐人症），或是對2）本學科內 的規範化人類價值所固有的影響（自恐症）之恐懼。通過引用雅各·拉岡心理分析 學的工作，我們接下來會論證這些致瘓的恐懼症產生自一種對更根本的焦慮控制的 無能。只有明確地指出科學慾望的目的，正如拉岡所建議的，科學從事者才可以和 這些焦慮共處而不致功能障礙。

After briefly reviewing the case of experimental rewilding in the southern Indian Ocean, we provide an alternative mode of resolving and adjudicating human influences and normative aspects of science, one that is explicitly political. The approach we suggest, following Emma Marris and Bruno Latour, is one that embraces the monsters created in a world where humans exert strong influence. But it also must be an approach that enunciates its commitments and desires in political struggles and therefore productively mobilizes alliances between various at-risk polities and scientific researchers.

在簡要地回顧南印度洋試驗性野化島嶼的案例後，我們會提供解決和裁定人類影 響以及科學的規範化面向的另一種模式，一種明確地政治的模式。我們所建議的方 案，如艾瑪·瑪莉絲和布魯諾·拉托所言，是一種在人類業已造成巨大影響的世界 中去擁抱這些怪獸的方案。但同時，它必須也是以個清楚說出其在政治掙扎中但承 諾及願望的方案，所以它才能積極地調動各式各樣瀕危的政體與科學研究人員之間 的聯盟。

### Cultural artifacts of the Anthropocene

### 人類世的文物

The debates in the pages of Nature and Science are ones that express the emerging cultural components of the Anthropocene. In ‘Anthropocene,’ we here adopt the metaphoric term assigned most famously to the current geological epoch (vis-a-vis previous periods, e.g. the Pliocene or Miocene epochs, millions of years ago) by Chemist Paul Joseph Crutzen6 to indicate a period in which human activities have come to have significant global impact. These activities include the full range of human activities on the earth, including deforestation, greenhouse gas emissions, and so on, which Crutzen suggests came to predominate in the industrial era, a period starting roughly 225 years ago, when James Watt designed the steam engine in 1784.

在《自然》和《科學》中的辯論體現了人類世湧現出來的文化成分。在「人類世 」一詞中，我們採用化學家保羅·約瑟夫·克盧岑所提出的最著名的對當今地質時 期的修辭[[6]](#footnote-6)，來表示這一人類活動已具有全球化影響的時期。這些活動囊括了人類在 地球上的全部活動：森林砍伐、溫室氣體排放等等，克盧岑認為這些活動在工業時 代——始於大約225年前的1784年，當詹姆士·瓦特設計蒸汽機時——達到主導的 地位。

The struggle over invasives is rooted in a relatively young science, one born in precisely this current Anthropocene era. Invasion biology and ecology developed from the critically important work of ecologist Charles Elton in the 1950s,7 but exploded into a field of its own in the 1990s. These fields are linked closely both to the heavily-human-influenced landscapes of the period since 1492, but also to the very recent efforts in ‘restoration ecology’ to reclaim and remediate environments that have been heavily degraded.8 The core of this science is, therefore, one predicated on recovering environmental conditions that are directly or indirectly anthropogenic.

對抗入侵的鬥爭源於一門相對年輕的科學，一門正是誕生在當前這個人類世的科 學。入侵生物學和入侵生態學由1950年代生態學家查爾斯·艾爾頓的關鍵工作發展 而來[[7]](#footnote-7)，但在1990年代才迅速發展成為一門獨立的學科。這些領域同1492年以來深受 人類活動影響的山水緊密連結，但同時也和近年來收回與修復業已被嚴重破壞的環 境的「復原生態學」息息相關[[8]](#footnote-8)。因此，這門科學的核心旨在修復直接或間接的屬於 人類世的環境狀況。

Davis’s article went to the normative heart of several cherished concepts in this young field by empirically questioning claims like the widely-cited (but poorly demonstrated) one that invaders are the second-greatest threat to the survival of threatened species worldwide. Davis and his coauthors point out that many species that people take to be native are indeed aliens and that many invaders have positive or neutral impacts. But they also argue something further, offering a tacit critique of the foundational concepts of ecological restoration – starting points and hopes of environmental return:

通過質疑被廣為引用（卻疏於論證）的認為入侵種是對世界範圍內物種生存的第 二大威脅的觀點，戴維斯的文章直指這門年輕的科學所推崇觀念之規範化核心[[9]](#footnote-9)。戴 維斯與合著者指出很多人們認為是本土的物種其實是外來的，並且很多入侵種具有 中性甚至有益的影響。但他們還道出了更多，隱晦地批評了關於生態重建的最基本 的概念——其出發點以及對環境回歸的希望：

Most human and natural communities now consist both of long-term residents and of new arrivals, and ecosystems are emerging that have never existed before. It is impractical to try to restore ecosystems to some ‘rightful’ historical state… We must embrace the fact of ‘novel ecosystems’ and incorporate many alien species into management plans, rather than try to achieve the often impossible goal of eradicating them…

現在絕大多數人類和自然的社群都既包含長期的居民也有新來的族群，並且有 之前從未存在過的生態系統在形成。試圖將生態系統恢復到某種「正確」的歷史狀 態是不現實的??我們必須接受「新興生態」的事實，並把諸多外來種納入我們管理 的計畫，而不是試圖達到往往達不到的移除它們的目標??[[10]](#footnote-10)

The message that must be taken to the public is therefore that there is nothing special about novel ecologies, and if there ever was a ‘rightful’ natural condition to which to return, it is inaccessible to us in a world of global environmental change. Writing for the objectors, ecologist Daniel Simberloff stressed that restorationists and conservationists do not oppose aliens, per se, only ‘invaders.’ On the other hand, Simberloff argues that aliens are indeed often terrifically pernicious and should always be watched, that their eradication is possible, and that the ‘public must be vigilant of introductions and continue to support the many successful management efforts.’11 Elsewhere, Lambertini and others argued similarly against Davis and his colleagues by insisting that ‘as leaders of conservation organizations with missions to protect biodiversity, we believe that the endorsement of invading species – although potentially stimulating from an academic perspective – risks trivializing the global action that is needed to address one of the most severe and fastest growing threats to biological diversity.’ In other words, even if Davis might technically be correct, it is dangerous to carry on this discussion in public. Clearly then, from whichever side of the debate, the struggle at the heart of this argument is one that can only exist in a contemporary context where the influence of humanity as a significant or dominant actor in earth systems is widely accepted by all.

因此，我們必須告知公眾的，是新興生態並無特殊之處，且即使真有所謂「正確 」的自然狀況讓我們去回歸，它也因在這樣一個全球環境劇變的世界而無法企及。 生態學家丹尼爾·新波羅夫為反對者寫道，修復主義者和保守主義者並不反對外來 種本身，而是反對「入侵種」。另一方面，新波羅夫也指出外來種往往也是非常地 有毒害作用，需要被密切留意，且其清除是可行的，所以「公眾必須警惕它們的引 入，並繼續支持成功對外來種管控的努力。」[[11]](#footnote-11)另一批評中，藍波狄尼和合著者也提 出類似的對戴維斯和他的同事的反對意見[[12]](#footnote-12)。他們堅持道「正如保守團體的領導者有 保護生態多樣性的任務，我們相信這樣為入侵種背書——即使可能僅是從學術視角 來促進——貶低了這些亟需的、為治理最嚴重、增長最快的對生物多樣性的危害之 全球行動的重要性。」換言之，即使戴維斯事實上是正確的，繼續在公共場合討論 此話題也是危險的。至此已經十分顯然地是，不論是哪一方，這場辯論的核心衝突 只可能在當今的背景下才會存在，因為人類的影響作為一個在地球系統中顯著或是 主導的因素已經被廣為接受。

This colorful contest, replete with competing metaphors, is only one of a handful of creative expressions increasingly typical in scientific accounts and debates over ecological process. Such texts, visualizations, and schematics have proliferated in recent years, making them an archive of material culture of the Anthropocene, inflected with particular valences and habits of representation.

這場多彩的競賽，充滿著競爭的隱喻，僅僅是在生態過程的科學描述和爭論中日 益成為典型的一些有創意的表達之一。這樣的文字，可視化，和概述在近年來層出 不窮，使之成為人類世的物質文化檔案，為特殊價鍵與慣態的呈現所改變形態。

Consider ‘The Human Footprint Analysis’ shown in Figure 1, which indicates that a large proportions of the global land surface is significantly impacted by human activities; indeed, the analysis suggests that 83 percent of the land surface of the earth is affected (afflicted) to some degree. A product of the Wildlife Conservation Society (WCS) and the Center for International Earth Science Information Network (CIESIN) at Columbia University, the work is really a product of overlay, piling human population distribution, urban areas, roads, navigable rivers, and various agricultural lands into an indexed range of anthropogenic influence. Effectively, it maps human impact by mapping human presence.

讓我們來看圖一中的「人類足跡分析」，它表明全球絕大多數陸地已經被人類活 動顯著地影響了；確實，這個分析指出83%的地球陸地面積已經被影響（破壞）到 一定程度。作為野生生物保護學會（WCS）以及位於哥倫比亞大學的國際地球科學 信息網絡中心（CIESIN）的作品，此圖實際上是把人口分佈，城市區域，道路，通 航的河流，以及各種農用土地一起堆疊稱一個人類世影響指數。可以說，它通過繪 製人類的存在來畫出人類的影響。

Future archaeologists may wonder why cartographers of our period chose not to portray images of the extent of the earth’s surface that have been impacted by other species or beings, making maps to determine how much of the earth had been impacted by microbes, for example. They would nevertheless have to conclude that the rust-colored blight on the face of the map was meant to signal acute concern of terrestrial decay, a state of fallen grace, and doubt about the possibility of return.

未來的考古學家可能會納悶為什麼我們時代的地圖繪製者沒有選擇去畫地球表面 被別的生物所影響的程度，比如畫一幅決定地球有多大面積被微生物影響。不論如 何他們也會做結論道，這幅地圖表面那鐵鏽般顏色標誌這陸地退化的嚴峻形勢，一 種優雅墮落的狀態，並且質疑其恢復的可能。

More ambivalent expressions also abound. The popular journalistic account, The World without Us, which has been called a ‘Left Behind for seculars,’13 posits what the earth might look like should humans suddenly disappear from its face. Alan Weisman’s book is compelling, beautifully articulated, and fascinating, to be sure. It is also as much about the built environment as it is about the natural one, since much of its most interesting text concerns the remarkably fast rate at which human infrastructure might be metabolized by natural forces, plants, decay, and growth. The book is compelling enough to have inspired a range of nature-television versions, and parallels a serious scientific examination of the Chernobyl region of the Ukraine, an area that has indeed been reclaimed by non-humans since the time of the nuclear disaster there.

比這些更矛盾的表述也數不勝數。被譽為「世俗者的末日謎從」的暢銷報告文學 《沒有我們的世界》，描述了如果人類突然從地球上消失後地球的樣子[[13]](#footnote-13)。確實，艾 倫·韋斯曼的這本書論述充分，語言優美清晰且引人入勝。它同時既是書寫人為的 ，也是關於自然的環境的，因為其中最有趣的段落正是描述了人類的基礎建設會以 可觀的速度為自然力：植物、腐蝕、和生長所新陳代謝。這本書足夠令人信服，以 至於賦予了一系列自然電視節目以靈感，同時也激發了對烏克蘭車諾比地區認真的 科學考察；核災之後，那裏的確已經被非人類生物佔據。

At bottom, however, the book taps into something more subtle but prevalent in the imagination of environmental scholars. Reviews of the book by figures like Bill Mckibbon and others chose to accept the fanciful premise as a kind of environmental parable, an end-times call to save the earth from humanity. The profound assumption of human exceptionalism is notable here. Indeed, a far more wild and dramatic earth-transformative premise might have been what the world would look like if fungus suddenly ceased to exist. The choice to depict one rather than the other marks the work as Anthropocene literature in the most formal sense. But it also stands on the horns of a contradiction: how fully transformed the world is by our presence and how indifferently the planet would recover from our absence. Are we too powerful a species, the Anthropocene author anxiously asks, or rather, irrelevant?

然而，追根究底，這本書涉及到了一些更微妙，但卻在環境科學學者想像中十分 普遍的東西。像比爾·麥基邦和其他一些此書的評論者選擇接受書中天馬行空的描 述作為一種環境寓言，一種拯救地球於人類的末世疾呼。這裏值得注意的是其中深 深的人類個別論之假設。沒錯，如果真菌突然消失，地球可能會經歷一番更加劇烈 的變化。該書選擇描述人類而不是其他生物極其正式的意義上說明了它是一部人類 世的文學作品。不過它也揭示了矛盾的兩端：我們的存在如何完全改變了世界的樣 子，以及這顆星球如何毫不在乎地因我們消失而恢復原樣。我們是一個過於強大的 物種嗎？人類世的作者焦急地問道，還是說，我們根本毫不相干。

A final sample of Anthropocene culture is shown in Figure 2, a much-discussed and widely circulated figure developed by Richard J. Hobbs and his co-authors in a 2009 paper for Trends in Ecology and Evolution entitled ‘Novel Ecosystems: Implications for Conservation and Restoration.’14 Following increasingly standard understandings of state and transition in ecology, this schematic posits that various stresses on ecosystems can drive them into new states. In some cases, where biotic pressures (e.g. invasive species) and abiotic pressures (e.g. climate change) are insufficiently large, restoration may be possible. In other cases, where either one or the other form of pressure is great, a return may be impossible, but careful work can make the new system behave or function like that of the lost original. But where both pressures surpass the ability to return, a novel ecosystem emerges that must simply be accepted, since resources spent on its recovery would be futilely invested. In this sense, the concept of novel ecologies echoes the enjoinder of the so-called ‘Serenity Prayer’ of Alcoholics Anonymous, to have the serenity to accept the things that cannot be changed back, the courage to change the things that can be restored or replaced, and the wisdom to know the difference.

圖2給出了人類世文化的最後一個例子，它是由理查德·J·霍布斯和他的合著者 繪製於2009年發表於《生態學動向》，題為「新興生態系統：保護與修復的啟示 」的論文中[[14]](#footnote-14)，一幅被廣為討論並流傳的圖像。依據漸為標準的關於生態的狀態與轉 變的理解，這幅圖描述了施加在生態系統上的各種力可以把它導向新的狀態。有些 情況下，當生物壓力（例如，入侵種）和非生物力（例如氣候變化）都不夠大時， 恢復是可能的。而在另一些情況下，當其中一種力比較大，那麼恢復可能無望，但 如果我們精心的維護可能可以讓新的生態系統像失落的原生生態系統一樣表現及運 作。然而當兩種力都超過了可以恢復的極限時，新興的生態系統就會形成，而我們 也只能接受它，因為所有花在修復它的資源均會是白費。在這個意義上講，新興 生態的概念和匿名戒酒會的「寧靜禱文」有異曲同工之妙，因為他們都有接受我們 無法挽回的事物的寧靜，有改變我們可以修復或替代的勇氣，以及可以區別二者的 智慧。

### Anthrophobia and autophobia

What is clear from a cursory examination of this debate and of Anthropocene material culture more generally is that it relies heavily on two related tropes, both of which might have been hard to recognize for previous generations of scholars. First is the clear and abiding concern – or obsession – with human transformation of the earth to a point of irreversibility, such that whatever is in front of us is sufficiently different from the past so as to operate by its own rules. Nor is this merely an objective observation; it is accompanied by an undeniable sense of tragedy, urgency, or perhaps more often: panic. This aspect of Anthropocene culture is marked by a clear call to value judgments. We have destroyed something worth preserving; recovery, restraint, and control are imperative.

通過這種走馬觀花式的對於這場辯論以及更一般的人類世物質文明的檢視，我們 可以清楚它極為依賴兩個之前學者可能不容易熱食到的相關聯的譬喻。其一是明顯 而經久的對於人類改造地球已到了無法返回的地步的憂慮，或困擾，所以在我們面 前的不論什麼都已經和過去很不相似，以致有了它自己的規律。這並不知識一項客 觀的發現，它同時也伴隨著不可否認的悲劇感·緊迫感，或者更常見的，恐慌感。 人類世文化的這一方面有著很明確價值判斷的標記。我們已經毀了一些值得我們保 護的東西，所以恢復、克制和管制都十分緊迫。

Second, however, Anthropocene scientific culture reflects a repeated concern with the vanishing of environmental baselines, grounded and normal conditions from which to make objective assessments for advocating interventions in the world. In a quickly transforming environment, deeply held human biases (like those towards nativeness) cause apparently scientific assessments of change to be fraught with normative assumptions – which must be expelled. Following in this line, some geographers have similarly advocated for the overall removal of native or alien criteria for evaluating interventions of any kind, for example.15 This too, is often articulated in a language of concern. The scientific culture of the Anthropocene therefore exhibits a nervous habit of eschewing precisely the implications of its own enunciation and a fear of making value-judgments about the state and trajectory of environmental change.

而第二點，則是人類世的科學文化反映了我們一再擔心環境的底線，基準、正常 的、讓我們可以在世上進行客觀評估以推進干預的條件正在消失。在這樣一個快速 變化的環境中，根深蒂固的人類偏見（比如說對於本土性）顯然會造成對變化的科 學評估同時也充滿規範化的，但卻必須根除的假設。在這一點上，舉例來說，有些 地理學家也曾建議對任何干預的評測應該完全移除本土或是外來的標準[[15]](#footnote-15)。可連這也 常常被提到時顯得憂心忡忡。科學文化在人類世因此展現了一種逃避正是它自己宣 稱的東西的緊張不安，以及一種對環境變化的現狀和軌跡進行價值判斷的恐懼。

Anthropocene scientific culture thus simultaneously displays a panicked political imperative to intervene more vocally and aggressively in an earth transformation run amok and an increasing fear that past scientific claims about the character of ecosystems and their transformation were overly normative, prescriptive, or political in nature. Agonizing over the role of advocacy, especially in conservation, has therefore become a literature in the field all its own.16

人類世的科學文化於是同時展現了一種試圖更直言不諱、積極地干預已經在瘋速 變化的地球的驚慌失措的政治緊迫感，和一種日益增長的，認為科學在過去對生態 系統特質的斷言過於規範化、指定化、及政治化的害怕。因此，這種對建議，尤其 是保守性的建議之角色的痛苦，已經在文獻中自成一格。[[16]](#footnote-16)

This internal contradiction is what turns Davis’ assertions described at the outset – to rethink the categorical nature of species and the ‘framing’ of invasion science – into a scientific ‘third rail.’ On the one hand, gazing back at the arbitrary categorical delineations of ‘good’ and ‘bad’ species through a cultural lens, Davis despairs of the value-laden nature of previous scientific efforts in invasion biology, and seeks to dethrone the normative assumptions within past science that have directed us to perverse outcomes and decisions. He seeks a way back to a more ‘objective’ assessment of the long, non-teleological arc of ecological change, calling for restraint on the languages of return, disaster, and recovery.

這種內在衝突也就導致開頭戴維斯的論斷——即重新考量物種的分類的性質以及 入侵科學的「框架」——成為了科學的「第三軌」。另一方面，回顧經由文化稜鏡 折射，任意的關於「好」與「壞」物種的描述，戴維斯對這種之前入侵生物學研究 中預設價值的特質感到絕望，並希望廢除過去在科學中的那些導致有悖常理的結果 和決定的規範化假定。他試圖尋找一條路，能引我們對漫長、曲折而非目的性的生 態變遷有「客觀」評估，而限制對諸如回歸、災難及恢復等語言的使用。

Seeking to purge human judgment from science, or at least to leave such judgments to others (economists?), Davis articulates scientific autophobia, a fear of our own political language and assumptions in scientific assessment. For Davis, the Anthropocene’s murder of a clear, desirable, and ‘good’ ecological condition to which to return heralds a caution against polluting science with a romance of the lost past: ‘Classifying biota according to cultural standards of belonging, citizenship, fair play and morality does not advance our understanding of ecology.’17 Chastising the normative judgments of past practitioners, Davis insists that the public should not be led into unnecessary concern, and should instead be told that some ‘alien species are useful.’ In this sense, the Edenic Sciences are too normative and too political for their own good. A new invasion biology would treat all ‘phenomena in a purely descriptive manner . . . [and] avoid usage of hybrid language that mixes values with scientific concepts.’18

通過試圖著把人類的評判從科學中清除，或者至少把中邪評判的工作留給別人（ 經濟學家？），戴維斯清晰地表述了科學自恐症，即一種對科學評估中帶入我們本 身的政治語言與假設的恐懼。對戴維斯來講，人類世對清澈、令人嚮往的，和「好 」的、我們要回歸的生態條件的謀害預示我們要提防以失去的過往之浪漫來污染科 學。「根據歸屬、公民資格、公平待遇、和道德等等這樣的文化標準來劃分生物界 ，並無法推進我們對生態學的理解。」[[17]](#footnote-17)通過批評過去的從業者規範化的斷言，戴維 斯堅持道公眾本不應該被引向沒有必要的顧慮，反而應該被教育「有些外來種是有 益的」。在此意義上，伊甸園科學有些過於規範化和政治化以至傷及自身。一種新 的入侵生物學將會「以一種純描述性的方式對待所有的現象??（並）避免使用混淆 價值判斷和科學觀念的語言。」[[18]](#footnote-18)

Davis’ critics, conversely, find such assertions profoundly disturbing. Because human activities have, for them, so self-evidently transformed the earth through precipitating ecologically destructive species invasions, this is precisely not the time to send a message of ‘relativism.’ Articulating an anthrophobia rooted in their despair of global species decline, they insist that ‘the public must be vigilant’ (in Simnberloff’s words, quoted above) of invaders. Science has not done too much proselytizing, it has done too little. It is arguably, not normative enough.

戴維斯的批評者們，反過來，覺得這樣的言論十分不當。因為對他們來講，人類 的活動已經不證自明地通過促成生態毀滅性的物種入侵改變了地球，現在不是一個 發出「相對主義」信息的恰當時刻。他們堅持「公眾必須警惕（用上面所引的新波 羅夫的話）入侵者」，清楚地表明著源自他們對全球物種退化的絕望中的恐人症。 科學沒有做足傳教，它做的太少了。或許可以說，科學還不夠規範化。

The rate and surprising character of the earth’s recent transformations have, in this way, directed attention to a schism that has always sat at the heart of environmental sciences – a fear of normatively bad human influences upon, and separations from, the ‘natural world’ mirrored by a fear of the inherently normative and political character of the science bearing on that concern. At precisely the emancipatory moment that ecological science has transcended the flawed expectation that a single ecological condition can provide the blueprint to regulate and guide human behavior – whether nature, wilderness, or the biogeography of the pre-Columbian period – the community ironically finds itself paralyzed by acknowledgment of human agency on the earth and the normative character of science itself.

近年來地球改變的速率和驚人因此已讓我們注意到處於環境科學核心的分裂—— 一面是害怕人類對「自然界」的不良影響和隔離，另一面相應的是害怕承受著這樣 的憂慮的科學與生俱來的規範化和政治化的特點。就在這生態科學從一種單一條件 ——不論事自然，野性，還是前哥倫布時代的生物地理——就可以提供人類行為藍 圖的虛妄之中解放出來之刻，這個群體諷刺地發現自己因承認人類為地球代理和科 學本身的規範化特徵而動彈不得。

This paralysis, it might be concluded, is the regrettable dysfunction that develops when anxiety turns to phobia or fear. Anxiety, in the psychoanalytic view developed by Jacques Lacan, is a normal condition and guiding motivation for science. Distinguished from fear, which has a specific cause and is associated with adaptive behaviors (fight or flight), anxiety presents the sufferer with the disintegration of the self. Rather than having a specific object, anxiety is connected to the threat (actual or impending) of losing something critical to the subject: ‘Anxiety, as we know, is always connected with a loss . . . with a 2-sided relation on the point of fading away to be superseded by something else, something which the patient cannot face without vertigo.’19 To be clear, anxiety is part and parcel of scientific enterprise, the haunting absence that directs research to the unknown.

這種癱瘓，我們可以說，是由於焦慮轉變成恐懼或害怕而造成的不幸的功能失調 。焦慮，從雅各·拉岡發展的心理分析視角來看，是一種正常的且指引推動科學的 條件。和有特殊的誘因並且和適應性的行為（反抗或逃跑）相關的恐懼不同，焦慮 使患者的自我瓦解。不同於由一特殊物件導致，焦慮與失去對主體一些至關重要的 東西之威脅（實際上的或是將發生的）相聯：「焦慮，如我們所知，總是和一種失 去相聯??一種雙面的關係，即將消失而被別的東西取代，而這取代物讓病人無法直 面而不暈眩。」[[19]](#footnote-19)說到底，焦慮是科學研究不可或缺的一部分，是那種將研究導向未 知的令人難以釋懷的缺失。

While anxiety revolves around an absence, Lacan observes, it is commonly replaced with fear, in the form of a phobia, which allows the sufferer to focus on a particular object and so symbolically target an external problem or object.20 This displacement is problematic, insofar as it does not address the unresolvable but more fundamental underlying condition, and because it directs irrational energy towards objects or conditions that may be otherwise harmless, or at least inevitable. In this way, both the anthrophobe and the autophobe have replaced the anxiety necessary to scientific inquiry (see below), with a phobia (of people or of the self) that is expressed in terms of their inability to explain or act effectively in the face of ecological concerns. The anthrophobe despairs: ‘why can’t I convince the world to act before the ecology is impaired beyond recovery?’ Conversely, the autophobe asks, ‘who am I to impose my own vision of the world’s proper structure or function on science?’

雖說焦慮由一種缺失所引發，拉岡發現，它卻往往為害怕，以恐懼症的形式所取 代，這讓患者可以集中精力與一特定的目標，因而才能象徵性地針對一個外在的問 題或物件[[20]](#footnote-20)。這種錯置是有問題的，只要它沒有處理難以解決卻更根本性的潛在狀況 ，並且因為它把不理性的能量導向那些本可以無害或至少不可避免的物件或條件上 。這樣，恐人症和恐己症，二者均以一種表現為面對生態問題時無法有效地解釋或 行動之恐懼（對人類或對自己）取代了科學探究所必須的焦慮（如下所述）。恐人 症者絕望道：「為什麼我無法勸服世人行動，在生態被破壞到無法恢復之前？」反 之，恐己症者問道：「我算什麼，為什麼可以強加我的觀念與世界應有的結構或是 科學應有的功用？」

### Are ecological phobias a form of political disorder?

### 生態恐慌是一種政治失調症嗎？

To be clear, these diagnoses are not criticisms of ecological scientists, who have precisely and rigorously identified and tracked very real material changes in the condition of the planet. Rather, this diagnosis directs itself to the culture of the science, naming the condition that makes progressive intervention in a changing world unnecessarily difficult. Following Lacan, we argue that this is because anxiety itself is fundamental to the search for knowledge and scientific practice, whereas the fearful phobias of Anthropocence culture (anthro and auto) displace that necessary tension.

要清楚，這些診斷並不是對生態科學家的批評，他們精確而嚴格指出並跟蹤了這 顆星球極為真實的物質條件改變。確切地說，這一診斷指向科學文化本身，即讓我 們在一個不斷變化的世界中，作出進步改變越來越困難的那些條件。遵從拉岡所教 ，我們認為這是因為焦慮本身是追尋知識以及科學實踐之重要條件，而人類世的恐 懼症（對人類或是對自己）則錯置了這必要的緊張。

Lacan, in his discussion of scientists in ‘Subversion of the Subject,’ argues that academics are prone to the kind of melancholy that has at its base a drive to understand what he calls the objet petit a.21 This objet petit a is the ‘object of anxiety par excellence’ – the ‘essential object which isn’t an object any longer, but this something faced with which all words cease and all categories fail.’22 While the objet petit a is variously defined in Lacan’s work, it is generally the object cause of desire. In this case, the desire for knowledge, the admirable core of the scientific urge, can never be completely fulfilled because it centers on the elusive, non-symbolizable objet petit a. This has implications for the study of ecology in the Anthropocene where nature itself, and explanations for natural phenomena, are the object cause of desire.23 As such, nature is an ever-receding object that escapes the scientist’s grasp (physical and mental) and generates anxiety through the impossibility of possession.

在《主體反易性》中討論科學家時，拉岡說學術界往往傾向於一種被試圖理 解他 所謂的「不可達的慾望對象」（*objet petit a*）之愁緒[[21]](#footnote-21)。這個「不可達的 慾望對象」即是「卓越的焦慮對象」——這個「關鍵的對象已經不再是一個物件 ， 而是一個使一切語言描述卻步、一切分類失效的東西。」[[22]](#footnote-22)雖說「不可達的 慾望對象 」在拉岡的作品中具有多種含義，通常它都代指慾望的客體起因。在此 ，對知識對 渴求，這個科學推動力可敬的核心，是永遠無法被完全達成的，因為 它圍繞著難以 捉摸、沒有具象的*objet petit a*。這一點對生態學研究有著如下 的意義，即在 人類世，自然本身，或是對自然現象的解釋均是慾望的客體起因[[23]](#footnote-23)。 因此，自然就成 了一個總是在後退的客體，總是避開讓科學家無法掌握（物 理上的或心理上的）， 由此產生了因無法佔有而導致的焦慮。

The disordered condition of phobia, however, though rooted in this anxiety, becomes a more problematic expression of this anxiety when unaddressed. Specifically, Anthropocene phobias articulate themselves over the symbolic crisis born of the end of nature, understood here as an imaginary or cosmological state and order that provides the grounding orientation point for adjudicating interventions and actions in the world. It is not necessarily a form of Cainotophobia that prevails therefore in the Anthropocene – a fear of change or novelty itself – but rather a fear of lacking a normative way to judge human actions and decisions in a world condition without precedent. In the absence of an organizing moral compass for protecting ecosystems from human action or directing human interventions, a role historically filled by a reconstructed or imaginary past, it is little wonder that the core experience of ecologists would be one of disorientation, really a fear of getting lost.24 As Evans argues, following Lacan ‘[a]nxiety is this point where the subject is suspended between a moment when he no longer knows where he is and a future where he will never again be able to refind himself.’25 Now experienced fearfully, this disorientation seizes the observer as phobia, and leads them further away from its own underlying source, settling attention instead on external (people) and internal (self) objects. And to the degree that efforts to reach a consensus on addressing novel ecologies are at an impasse, as suggested by many circular debates within the field, these phobias do indeed represent a disorder, or a distraction.

此種混亂恐慌的狀況，雖說源於這樣的焦慮，如果不解決的話則會帶來更嚴重的 表現。特別地，人類世的恐懼症通過由自然的終結而致的象徵性危機來表達，這裏 也就是通過想像的、宇宙論的狀態和秩序來作為裁定世上的干預或是行動的基準點 。不一定說這是一種人類世的新事恐懼症——一種對變化或是新事物的害怕——在 盛行，倒不如是在一個無先例的世界狀況中對缺少一種判斷人類行為和決定的規範 的恐懼。因為缺少來保護生態系統不受人類行為破壞或是指導人類干預的組織道德 的指南針——一直以來這都是由一個構建的想像的過去來提供——生態學家們的核 心經驗是一種迷失，或者不如說是一種對走失的害怕，也就不足為奇[[24]](#footnote-24)。就像伊凡據 拉岡所講「焦慮是個體在他已不知道身在何處的瞬間和他永遠無法找到自己的未來 之間的停歇。」[[25]](#footnote-25)如今戰戰兢兢經歷了這些，這種迷失讓當事者被恐懼攜住，並將他 們帶到離這恐懼的源頭更遠的地方，把他們的注意力安置在對外（人類）和對內（ 自身）的客體之上。這寫恐懼症缺失代表這一種無序或者說是離題，以致於——正 如業內很多繞圈子的辯論所示——對解決新興生態達成共識的努力處在僵局之中。

Yet countless basic decisions about the present and future still confront us, which have to be made one way or another. Do we bodily assist endangered species to move in the face of climate change?26 Do we freeze species germplasm for the future or do we conserve them in situ?27 Should we introduce new species into transformed or damaged ecosystems in an effort to recover or dis- cover new function, or do the inevitable uncertainties accompanying such novel permutations represent too great a risk, merely an extension of the destructive experiments that brought us here?28 As a result of these imperative practical questions, most of the proliferating literature dedicated to ecological novelty represents an effort to replace this lost orientation point with an alternative.

然而數不清的關於現在或未來的決定還擺在我們面前，或此或彼，我們必須做出 選擇。面對氣候變化，我們要直接幫助瀕危物種遷徙嗎[[26]](#footnote-26)？我們應該冷凍物種種質資 源以備將來還是應該在它們棲息地養護它們[[27]](#footnote-27)？我們應該將新的物種引入被改變或是 破壞了的生態系統，來恢復它或是發掘新的功能，還是這種新安排帶來的不可避免 的不確定性有過大的危險，使之僅僅成為我們之前已經歷的毀滅性的試驗的延伸[[28]](#footnote-28)？ 這些迫切的實際問題導致的結果，絕大多數湧現的有關生態新物的文獻都是一種以 替代物置換這種失去方向的嘗試。

In searching for a new magnetic north, residents of the Anthropocene do have some traditional (albeit equally normative) ecological tools in their kit to try to address these decisions: ecological structure and function. Both of these, however, have limited applicability and raise as many normative questions as they answer.

在找一個新的方向的過程種，人類世的居民在他們的工具種確實有一些傳統（儘 管也同樣規範化）的生態工具，來試圖做出這些決定：生態結構和生態功能。然而 ，二者適用性有限，且解決的和提出的新的規範化問題一樣多。

Structure refers, in a general way, to the species abundance and composition of an ecosystem at any point in time, a ‘compositionalist’ way of determining whether a current ecosystem state resembles its evolutionary heritage – and therefore its appropriate condition.29 As many observers have noted, however, predicting how and why these change has become highly problematic now that simple succession models have given way to more complex dynamics. Moreover, it is increasingly clear that some system elements can be replaced wholesale with others, though to unknown effects30

一般地，結構是指物種豐富性已經在某一特定時間一個生態系統的構成，是一種 「構成主義者」用來決定當前生態系統的狀態是否和他的進化傳承——也即它恰當 的狀態——相似的方法[[29]](#footnote-29)。可是，像很多觀察人士指出的，預測這些變化為什 麼和怎樣發生已經問題多多，並且簡單的繼承模型已經讓位於複雜的動態系統。而 且，越來越明顯的是，有些生態成分已經完全被其他的所取代，雖然其影響不明[[30]](#footnote-30)。

Finally, many ecologists have long held that structure is arbitrary, organized by historical accident and path dependence, and by no means governed by a single set of rules.31 Where an historical structure might be knowable or analogues might be founds in other systems, they may have little or no applicability to a novel ecosystem. Structure is therefore by no means a simple adjudicator of the proper or most natural state of a system. It cannot provide a guide, on its own, for what a novel ecosystem ought to look like.32

最後一點，很多生態學家一直以來都認為所謂結構是任意的，由一系列歷史上的 意外組成、路徑依賴，且無論如何也不可能被單一的一套規則所轄。[[31]](#footnote-31)當在其 他系統中可知或可尋一種歷史的結構或其類時，它們在新興的生態系統種可能很難 或根本不適用。因此可知結構絕不會是裁定一個生態系統狀態是否適合或最為自然 的簡單途徑。[[32]](#footnote-32)

Function is equally problematic. Though not to be confused with anthropocentric ‘usefulness,’ function is nonetheless an effort to classify species based on ecological behavior and similarity, what species do within a larger system, like producing biomass or metabolizing nutrients. In this way, ecosystem function allows observers to catalogue the kinds of gains and losses that might be at stake in the transformation of an ecosystem but also, to consider how different or novel ecosystems might equally provide the same services as lost ones and so stand in for one another.33 Function is in this sense an equally unstable classification, since the characteristics of species are interpreted as serving particular ‘purposes’ in the larger system, a somewhat arbitrary delineation.

「功能」也一樣問題重重。儘管不可和人類世的「有用性」混淆，「功能」仍希 望依據物種的生態行為和相似性，及它在更大的生態系統中做什麼——生產生物質 或是代謝營養質——來給它分類。這樣，生態系統的功能使觀察者可以編目因生態 系統轉型而危在旦夕之得失，並考量新興生態系統如何不同地或等價地提供了和已 逝的生態相同的服務，進而以此為由來支持一方或另一方。[[33]](#footnote-33)功能在這個意義 上也是同樣一種不夠穩定的分類法，因為物種的特質由它們在更大的系統中為某特 定「目的」服務來解釋，而這也知是一種隨意的描畫。

Problematically, moreover, determining which function is desirable is a further normative decision that ecologists eschew, or at least insist is separate from scientific assessment. This makes the adjudication of preference a process scientists have increasingly preferred to turn over to economists, through the concept of ecosystem ‘services.’34 This last move, to surrender concepts of value and valuation to another science (i.e. economics) in the hope that a rational and optimal decision can be reached free again of value, is one made by default, but also one with further normative implications, indeed political ones.

而且，問題更大的是，決定什麼功能是需要的也是進一步規範化的決定，生態學 家們避之不及或至少堅持要將其同科學評估分開對待。這使得偏好的裁決，通過生 態系統「服務」的概念，成為科學家們越來越想要推給經濟學家的一項工作。[[34]](#footnote-34) 最後這項舉動，也就是把價值的概念和評判交給別的學科（比如，經濟學），以 期理性、最優的決定可以不顧價值判斷而獲得，是默認的舉動，但同時也具有了進 一步規範化、甚至政治化的意味。

Thus, traditional (normative) ecological concepts do not, in and of themselves, provide sufficient purchase to evade the fears confronted by scientists in the Anthropocene. This is because the application of either structure or function to these problems inevitably results in the tacit positing of political questions. What work do anthropogenic landscapes do? To whom does value flow from novel landscapes? Whose material and political labor do ecosystems do? Though these are difficult questions to answer, the selection of any ecological intervention must pass through sites of struggle over such priorities and so through the relativistic thicket of ecological anxiety.

因此，傳統（規範化）的生態學概念其本身以及所蘊含的並無法提供足夠的力量 來使人類世的科學家們規避他們面對的恐懼。因為結構或是功能的用在解決上述問 題時不可避免地會造成不明言的政治性問題。人類世的景觀可以做什麼？價值要從 新興的景觀流向哪裡？雖說這些都是難答的問題，可是選取任何生態的干預都必須 經歷這些優先順序的糾結，也即經歷生態焦慮的相對主義的荊棘。

So if the contradictions of the Anthropocene make it impossible to evade anxiety, how might we address the phobias that hinder practice and action? How might we get beyond these?

所以說如果人類世的矛盾使得規避焦慮沒有可能，我們要怎麼來解決這些阻礙實 踐和行動的恐懼呢？我們要怎麼超越這些呢？

The answer, Lacan suggests, is to step beyond phobia and engage more directly anxiety itself and the urges that inevitably produce it. The psychoanalytic treatment of affects for Lacan, of which anxiety is paradigmatic, is therefore ‘not the reliving of past experiences, nor the abreaction of affect, but the articulation in speech of the truth about desire.’35 In contrast to other forms of adjudicating right and wrong action, ‘[t]he psychoanalytic ethic . . . forces the subject to confront the relation between his actions and his desire in the immediacy of the present.’ The question for the phobic subject to answer is thus: ‘Have you acted in conformity with the desire that is within you?’36 Because the subject for Lacan emerges in the field of language (the symbolic order) this question can be reformulated: ‘have you acted in accordance with your desire?’ becomes ‘have you spoken well?’ To speak well in this sense, to enunciate, is an act – one that moves the subject beyond anxious paralysis.

答案，拉岡認為，在於越過恐懼而更直接地同焦慮本身及不可避免地產生焦慮的 慾望戰鬥。對拉岡來講，心理狀態——以焦慮為典型——的分析性治療因此「不是 重溫過去的經驗，也不是發洩心理的積鬱，而是清楚地用言語來講出真實的慾望。 」[[35]](#footnote-35)相較於其他裁定對或是錯的行為，「心理分析的倫理??迫使人在眼下的瞬 間直面其行為和欲求之關係。」恐懼症的患者要回答的問題因之是：「你的行動是 否符合你內心的慾望？」[[36]](#footnote-36)因為拉岡的主題是從語言學領域產生的（符號學秩 序），這個問題可以被重述：「你是否依你的慾望行動？」於是就成了「你是否講 明白了？在這裏講明白，講清楚，是一種行為，一種讓患者脫離焦慮癱瘓症的行為 。

More specifically then, to cure our condition, we must accept the radical ruptures made possible by understanding and articulating the politics of novel ecologies. In the process, we must enunciate (literally speak) novel ecologies and why we want or do not want them in their specificities, admitting the very normative and power-laden urges that such a naming will expose and make transparent. It is further likely that in the process we will admit to our desire to alter the world even as we measure it, and to create new ecologies even as we fear them.

更進一步，要治癒我們的病況，我們必須通過理解和講清楚新興生態的政治學來 接受這深深的裂痕。在此過程中，我們需要講清楚（按字面講）新興生態，以及我 們在其特異性中，為什麼想要或不想要它們，承認那些在此描述下可以暴露和使之 透明的極為規範化、 充滿政治意味的推動。在這個過程中，也有可能我們會接受 我們即使在僅僅測量世界時也想要改變這個世界，而即使我們心懷懼怕也還是在創 造新的生態。

We suggest, therefore, that coming to terms with our ecological desires will force us to admit that novel ecologies are simultaneously 1) gardens of our own crafting albeit, in the words of Emma Marris, wholly unruly and rambunctious ones,37 2) monsters born of our tinkering albeit, in the words of Bruno Latour, ones deserving of our love,38 and 3) as sites of struggle, albeit in the words of Neil Smith, ones of production and accumulation.39 Understood this way, paths emerge in the forest to guide our decisions to either proliferate or extirpate novel ecologies.

我們因此認為，直面我們的生態欲求會迫使我們承認新興生態同時是1）我們自己 澆灌下的花園，儘管它（用艾瑪·瑪莉絲的話來講）完全放蕩不羈粗暴不受控[[37]](#footnote-37)； 也是2）我們自己拼湊起來的怪獸，雖然它（用布魯諾·拉托的話來講）也理應 得到我們的愛[[38]](#footnote-38)；還是苦苦掙扎的景象，儘管（用尼爾·史密斯的話來講）它 們也在生產和積累[[39]](#footnote-39)。這樣來理解，在茂密的叢林裡便伸出了一條條路，來指 引我們或者大力增殖，或是斬斷這些新興的生態。

### Island Rewilding as Therapeutic Political Theatre

### 島嶼野化作為療癒的政治劇場

Consider Dennis Hansen. He and his colleagues at University of Zurich, University of Bristol, Mauritian Wildlife Foundation and elsewhere, are engaged in producing novel ecologies. Specifically, at island sites in the Indian Ocean, they are engaged in a large-scale experiment to restore the native vegetation, including especially the slow-growing ebony hardwood Diospyros egrettarum, a tree that once covered the lowland and coastal parts of the islands of Mauritius but which was almost wholly wiped out through successive human occupations and colonial and postcolonial settlements and waves of exploitation.

我們來看丹尼斯·漢森。他和他在蘇黎世大學、布里斯托大學，毛里求斯野生動 物基金會等地的同時一起進行了新興生態的建構。特別的，在印度洋的島嶼上，他 們在進行一下大型的試驗，來恢復本土植被，包括生長緩慢的艾格拉特姆烏木（Di ospyros egrettaum）——一種曾經覆滿毛里求斯島嶼低地和海岸的樹木，後來幾 乎被接連不斷的人類佔領、殖民和後殖民地的砍伐而完全消失殆盡。

The central barrier to successful recovery of this historic and prehistoric forest landscape, however, is that germination and dispersal of the tree’s huge pungent fruited seeds depends heavily on their rumination in guts of giant tortoises.40 Regrettably, there has not been a giant tortoise on Mauritius since the Cylindraspis inepta (Saddle-backed Mauritius giant tortoise) went extinct from over-harvesting by colonial naval vessels; the last saddle-backed giant tortoise was sighted in 1795.

成功恢復這個人類史上以至史前的森林景觀的最大阻礙，在於這種烏木巨大而難 聞的結實種子的發芽和傳播擴散十分依賴於經過巨龜腸道裡的反芻[[40]](#footnote-40)。可惜的 是，自從毛里求斯隆胄巨龜（Cylindraspis inepta）因為殖民海軍艦隊的大量捕 殺而滅絕之後，毛里求斯島上就一隻巨龜也沒有見到過了——最後一隻隆胄巨龜 還是1795年被觀測到的。

Hansen’s and colleagues’ solution to this conundrum is to introduce an exotic substitute to the region’s islands – the Aldabra giant tortoise (Aldabrachelys gigantea).41 By substituting an alien species for a long-gone relative on the island of Ile aux Aigrettes42 and Round Island,43 both off Mauritius, Hansen and associates are violating many of the founding principles of restoration and operating in a place slightly beyond the precautionary principle. Initial results, however, are enormously promising. These tortoises are ingesting the fruits, distributing their seeds, and enhancing tree seed germination since those seeds passing through the gut of the tortoise have been shown to be far more successful than those that have not. The implications of this for further similar efforts are notable, since many other frugiovore species were eliminated around the world during the colonial era.44

漢森和他的同事們解決這個難題的辦法，是引入一個外來的來替代該地區島嶼的 品種——阿達布拉巨龜（Aldabrachelys gigantea）[[41]](#footnote-41)。因為用一個外來物種 來替代在毛里求斯的艾格雷特島和郎德島它們早已滅絕的親戚，漢森等人已經違反 了諸多修復生態的根本原則，且其執行已有些在預防原則之外了。然而，初步的結 果十分可喜。巨龜消化了這些果實，散佈了它的種子，加速了樹種的發芽——因為 這些通過了巨龜消化道的種子比那些沒有經過的要容易發芽得多。這項試驗對更多 類似的嘗試的意義是顯著的，因為很多果食的物種也是在殖民地時期從地球上消失 的。

This effort is most accurately described as ‘rewilding,’ defined here as the introduction of proxies for extinct species in order to reconstruct the structure and function of pre-human or ‘natural’ ecosystems, providing, in Caro’s terms ‘ecological proxies for such extinct ancestors.’45 Proposals for this sort of effort were made famous and infamous in 2005, when Josh Donlan and colleagues asserted the need to introduce proxies for species extinct since the Pleistocene species across North America, including African cheetahs (Acinonyx jubatus), Asian (Elephas maximus) and African (Loxodonta africana) elephants, and lions (Panthera leo).46

Opponents to rewilding have been vociferous, pointing to the unfitness of African species for North America, the potential damage to extant populations in the sending locations, and the more general problem that most species introductions result in ecological disaster47 (consider the Australian experience with the Cane Toad). These debates revolve around a great many uncertainties, including the practical limits of such efforts, the limits of their social acceptance, and the questionable use of scarce conservation resources in what might be a boondoggle. Even supporters of the overall idea concede that it is one that reflects ‘an air of desperation.’48

But within these scattershot concerns, we can see the imprimatur of the phobias borne of Anthropocene scientific culture. They touch directly on whether science has become too normative or not normative enough, too advocacy-rooted or, instead, inadequately connected to advocacy for nature. Returning to the tortoises of Mauritius and Madagascar, it is not hard to already hear the cries of both autophobes and anthrophobes. For anthrophobes, this sort of experiment must appear all-too-human. From this view, island rewilding is a move away from conservation in any traditional sense and a kind of brazen action that further extends risky human impacts borne of hubris. Autophobes have much hand-wringing to do as well, however, since the contradictory introduction of exotics in the name of restoring a lost, imaginary wilderness seems like a dangerous elision of science and normative practice. Who are we, after all, to name one form of reintroduction dangerous and the other restorative? Such an effort surely transcends Davis’ call for a largely descriptive science.

Adjudicatory criteria must lie beyond either our concern about the a priori desirability of human action or our urge to a more objective way of evaluating actions and outcomes. Instead, as noted previously, the political character of the environmental intervention must be addressed head-on. What are our desires and how are they entangled in the desires of others? To whom does value flow in this odd experiment and at whose expense?

In that regard, one must initially hold in profound suspicion the role and desirability of Anglo- European researchers conducting experiments on landscapes long ago wrest from the control of local populations. The landscapes of Mauritius are, after all, the political ecological inheritance of French and British colonial struggles and pillage in the Southern Indian Ocean, forged in the network of global systems born of development of global naval power in the 1700s.49 It was European sailors who feasted on Saddle-backed giant tortoises until they were driven extinct in the 18th century and European colonists who stripped the ebony hardwoods of the islands. Who are colonial hegemons to return to these islands and ‘restore’ them for their own scientific edification?50 Conversely, what would encourage or allow the source islands for these tortoises – the Aldabra Atoll in the Seychelles in the western Indian Ocean – to surrender their rare tortoise populations to postcolonial scientists for export to islands far away? Put in bare political terms, what could possibly make the conduct of such experiments desirable for those who live around or govern these islands?

An answer lies in the political geography of the islands themselves, considered within the context of global climate change. Ile aux Aigrettes is a flat sandy coralline limestone formation, poking its head above water only slightly, reaching only 13 meters above sea level at its highest point, but with most of its landscapes within a meter of the sea. Aldabra Atoll has a land area of 155.4 km², making it the second-largest raised coral atoll in the world, but also with an average height above sea level of only 8 meters.51 With a one-meter rise in sea-level predicted under some current projected global change models over the next century,52 inundation is looming. The political economic motivations of both sites in this experiment are therefore linked closely in the production of a global understanding of island nation threats.

In October of 2009, Maldives President Mohamed Nasheed and 11 of his government ministers donned scuba gear and held a cabinet meeting beneath the sea, in time to highlight the spectacular failure of climate talks in Copenhagen that year.53 Through a spectacularly performative gesture, the global media were captured by the event and forced to report sea-level change projections and basic facts about the topography of the earth’s most vulnerable polities. For the Seychelles and the key offshore sites of Mauritius, no less than for the Maldives, the immediate existential crisis of global climate change therefore looms far more prominently than the possible downstream impacts of some tortoise run amok. Indeed, the strange scientific desires of rewilding conservation experimentalists, are in this case precisely suited to the creation of opportunities for alliance with historically colonized places and people to produce what might best be described as experimental conservation theatre. By simultaneously producing nature while drawing attention to the production of nature, in terms explicitly congruent with those articulated by Neil Smith,54 the tortoise project cuts the Gordian Knot that otherwise ties the hands of Anthropocene researchers.

While an autophobe might reasonably ask, therefore, whether rewilding the Indian Ocean is a Colonial White Restoration Fantasy freighted into a normative, scientific experiment, and an anthrophobe might cogitate on whether such an effort is instead a potential Frankenstein Nightmare, both would be missing the point. The merits of the so-called ‘Zurich-Aldabra Research Platform’ must be sorted precisely in terms of its political role in presenting and confronting the larger ongoing experiment on the earth’s climate system: an experiment promulgated by the world’s wealthy and powerful, largely at the peril of the world’s poor. Indeed, at both research islands, ongoing evaluation and assessment of climate change impacts are central features of the intervention. Allowing conservation to be explicitly, honestly and strategically political, therefore, opens a way to come to terms with, and perform proactively in, the Anthropocene. Enunciating desires, while acknowledging those of others, science and action proceed hand in hand.

It might be added that such experiments have the further merit of providing a therapeutic opportunity for phobic researchers themselves. As Hansen and his colleagues point out, the merits of these specific island experiments are that they are largely reversible and mostly local in impact. These conditions exactly reproduce one of the clinically proposed treatments for phobia: cognitive- behavioral therapy. Specifically, ‘interoceptive’ therapy simulates the symptoms that produce the fear and panic in phobic patients, but under conditions regulated by patients themselves, allowing them to experience the sources of their phobia in a controlled environment.55 Learning to live in a world crafted by people but always beyond human control, where scientific concepts and practices can never exist wholly beyond the political desires and entanglements in which they emerge, small doses of confrontation with produced natures may allay the anxieties of scientific practitioners operating in the Anthropocene.

### Living in Anthropocene Political Ecology

### 生活在人類世的政治生態中

In her recent book Rambunctious Garden: Saving Nature in a Post-Wild World, Emma Marris describes the Sandhill Cranes gathering at the Platte River in Nebraska, noting that the landscape into which the birds descend is largely an artificial product of agro-industrial development. Does this make it counterfeit, she asks: ‘Nope. Not in my opinion. Humans and birds have collaborated to create this beauty. This conscious and responsible and joyful cohabitation is the future of our planet, our vibrant, thriving, rambunctious garden.’56 Like the tortoises of the Indian Ocean, the cranes belong because they are there, and not vice versa.57

Of course, Sandhill Cranes are the easy case. What do we make of more foreign fellow-travelers on the planet, like Bt cotton, or nuclear waste? As Bruno Latour has reminded us, these too must be treated with careful symmetry. In his essay ‘Love Your Monsters’ he reminds us that the tragic narrative power of Mary Shelly’s Frankenstein is rooted in Victor Frankenstein’s moral failure. But this moral failure ‘was not that he invented a creature through some combination of hubris and high technology, but rather that he abandoned the creature to itself.’58 Embrace the solutions and the problems posed by technoscience; Bt cotton and nuclear waste must be addressed head-on, and not evaded through simple refutation and Edenic retreat.

For Latour and others, however, the adjudication of such choices and for deciding which monsters to create and which to love is largely a question of good liberal and communicative collective discussion under a new kind of constitution. Convening a liberal ‘parliament of things’ in a more democratic fashion, they suggest, would allow us to outline the division of powers that could govern how humans and non-humans are represented.59

As has been noted elsewhere, seeking to adjudicate post-environmental decisions through liberal mechanisms, whether concerning cranes, tortoises, or hazardous waste, is optimistic in a world of spiraling asymmetries, as where the people of the Maldives face extinction at the hands of indifferent and distant SUV drivers, as well as those of manufacturers whose accumulating surpluses hinge on marketing and selling fuel-hungry vehicles. A parliament convened under such conditions is politics without politics, as Wainwright observes: the metaphorical powers of a new constitution ‘are presented with no analysis of the barriers that exist to their actual existence and no discussion of how they might come into being.’60

As such, though we must first accept that these island landscapes are effectively gardens as described by Emma Marris, populated with lovable Lautourian monsters, we must also acknowledge that not all novel ecologies are the same, and that parties to their adjudication are unlikely to symmetrically share the stakes during any sort of polite parliamentary procedure. Sorting of novel ecologies must be of the kind shown on Ile aux Aigrettes and Aldabra Atoll. Ecological scientists will have to enter into forcefully political alliances, in which the stakes of their experiments are linked to the fates of interested parties, and do so with stark honesty about what they want. Here, it will be essential to explicitly produce experimental natures (i.e. new island ecosystems), but to do so in collaboration with polities interested in explicitly opposing other productive and accumulative experiments (i.e. global carbon loading).

Such an intervention, and the grounds for supporting or opposing it, must be developed through scientific research that acknowledges, is steeped in, and enunciates the stakes that differing outcomes may have for players positioned very differently around the landscape, including investors in genetic research startups, farmers experimenting illegally with introduced seeds, and local peoples for whom crops might be sacred. Thus neither Davis (an autophobe) nor his critics (anthrophobes) can transcend the intractability of their positions in the absence of political self-appraisal, a therapeutic speaking of how their positions are entangled in the politics of control over climate, land, and oceans.

We have not argued here, therefore, that any specific ecological intervention is, a priori, better than another. Neither destroying exotic species nor setting more of them loose on the landscape can be known in advance to be preferable or problematic.

Nor have we argued that the sciences of conservation biology, restoration ecology, and invasion ecology, which are directed to these conundrums, are ill-suited to the future we face. Indeed, the decisions we confront in this brave new world require precisely the kind of science and findings provided by the invaluable research of Edenic Scientists, of Davis, and of his critics.

We have, however, suggested one way forward in world that is always already beyond our control, but which often responds to frighteningly to our actions. By directly confronting what we want as scientists and citizens and acknowledging where these desires put us relative to others in the world, we can begin to sort through what to measure and what to change, what to alter and what to preserve.

And in so doing, we can come to terms with our fears. It is true that regular aerobic exercise, improving sleep hygiene and reducing caffeine are useful in treating anxiety. But in the uneasy world of the Anthropocene, a more direct treatment will come from enunciation in the Lacanian sense: ‘the articulation in speech of the truth about desire.’61 That is, by naming the politics of intervention and admitting the struggle that follows from embracing novelty, we might conquer our phobias and dispense with imaginary places to which there is no hope of return. These together can help throw the switch to shut down the power that makes the third rail of conservation and ecology so dangerous for scientists to touch.

### Acknowledgements

A previous version of this paper was presented in the cultural geographies Annual Lecture at the annual meeting of the Association of American Geographers in New York City in 2012. Thanks especially go to that journal’s editors, Tim Cresswell and Dydia DeLyser. The substance of the argument presented here is the product of interactions with ecological scientists and artists at the conference on Ecological Novelty, held at Monte Verita Switzerland in 2011, and convened by scholars at Eidgenössische Technische Hochschule (ETH) Zürich, especially including Angelika Hilbeck and Christoph Kueffer. We are indebted to Christoph Kueffer for his insights into Seychelles ecology and conservation politics and his explication of ecological function.

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