

ARTICLE

“Numberless Little Risks”: ‘Tropical Exposure’ in Globalizing Actuarial Discourse, 1852–1947

Rob Aitken

I argue that life insurance and imperial meaning making are deeply implicated in each other. As life insurance expanded internationally in the nineteenth century, and as insurers became advocates of White settlement, they grappled with what actuarial science meant in the context of their orientalist conceptions of colonial populations. In particular, actuaries were concerned with tropical markets and the racialized/exceptionalized differences they perceived in those markets. To address these tensions, insurers attempted two strategies: (1) incorporating tropical rates as additional premiums designed to cover the “extra mortality” of tropical markets; and (2) advocating for social practices of “sanitary progress” related to public health and sanitation. These practices, framed in orientalist terms, were not adopted in any smooth manner but in fumbling and meandering ways as insurers tried to understand what kinds of lives tropical settlers might be and how those lives might be priced. They eventually liberalized life insurance rates for White settlers in tropical settings, but insurers then confronted questions on how newly socialized “native” lives might be rendered calculable. This story of tropical exposure in globalizing actuarial discourse reinforces the ways in which race and racialized/exceptionalized differences were at the core of life insurance and the calculative devices it assembled between 1852 and 1947.

Keywords: insurance, colonialism, business and culture, risk

It had taken the American settler more than two hundred years to cross the Appalachians and clear the Indian title to the land. . . . In the next ten years, like a crown fire in the forest, the settlements jumped across what had been long regarded as “The Great American Desert”—hence assigned permanently to the Indians—to the shore of the Pacific. . . . At the very time . . . life insurance was on the eve of its first great advance.”¹

1. Buley, “Study in the History of Life Insurance,” 40.

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In January 1917, the Manufacturers Life Company—later known as Manulife—inserted into its regular newsletter to agents a special supplement that narrated the expedition of one of its senior managers to its key foreign offices. Presented in the style of a grand imperial journey, the story and its accompanying map (Figure 1) charted a world stitched together through the nodes of Manulife’s distant outposts, echoing what Lobo-Guerrero describes as an ethic of imperial entrepreneurialism key to insurance. “Seeking to secure against the uncertainty,” he argues, “they venture into areas for which knowledge is patchy, at best, chart the spaces that were until then considered uninsurable or catastrophic . . . [and] exploring and adopting novel forms of knowledge, speculating about possible and imagined futures.”² Building on this contention, I argue that life insurance and “imperial meaning-making” are deeply implicated in each other.³ As life insurers expanded into “tropical” worlds, they were confronted with a foundational problem regarding the difficulties of classifying and pricing race—a problem they often understood using an imperial logic of “exceptionalized difference.”⁴ As T. E. Young put it in 1896, echoing this larger imperial logic, life insurance is a story about “the colonization of waste places of the world” and the “force” of an “advancing civilization.”⁵

In making this argument, I suggest that the calculative devices of insurance have a *longue durée* deeply related to settler colonialism. Settler-colonial violence and calculative practices were not separate but deeply implicated in each other—a relationship deeply visible in globalizing life insurance networks.⁶ As they expanded globally, Anglosphere insurance companies became preoccupied with the dangers and risks that settlement entailed.⁷

To establish a focal point for this argument, I examine the ways in which life insurers wrote and talked about the problems they perceived as they inserted themselves into settler-colonial contexts in the tropics. Insurers felt an acute tension between a keenness to extract value from the uncertainties of tropical markets and the abject danger they perceived lurking in those spaces. Although insurers sought profitable uncertainty, tropical spaces confronted them with uncertainties they thought they might never know and with dangers they constituted in imperial terms as exceptional. I adapt their term “tropical exposure” as a shorthand for the anxiety insurers felt; a worry that the tropics exposed them to unknowable danger not easily rendered calculable.

Actuaries experimented with two specific strategies they thought might help resolve this problem. The first involved experiments in “tropical rates,” a surcharge levied on top of

2. Lobo-Guerrero, *Insuring Life*, 10; see also Aitken, *Fringe Finance*, 16.

3. Kramer, “Power and Connection,” 1350. I draw on Kramer’s conception of “imperial meaning-making, particularly with respect to the politics of racialized and gendered difference” (1350). This suggests the ways in which imperial populations are constituted as “primitive” racialized others. I conceive this as roughly analogous to Said’s conception of orientalism. Throughout this article, I use imperial meaning making and orientalism interchangeably.

4. Kramer, “Power and Connection,” 1351.

5. Young, “Theory of Evolution,” 252.

6. Luyt, “Centres of Calculation,” 386; see also Legg, “Governmentality, Congestion and Calculation,” 2006.

7. In this article, I focus, broadly, on “what Vucetic (2011) refers to as the ‘Anglosphere,’” the particular spatio-cultural formation that links Canada, Australia, the United States, and Britain. Vucetic’s term is resonant not only because it specifies a culturally contingent construction but also because it signals that “the origins of the Anglosphere are racial. . . . In short, the Anglosphere is a product of its racial past.” Vucetic, *Anglosphere*, 3–4. To avoid repetition, I use the terms Anglo-American and Anglosphere interchangeably.



Figure 1. Manulife's foreign agencies.

Source: Manulife, "Our Foreign Field," 4, Newsletters Bound 1914–21, Manulife Corporate Archives.

existing life insurance premiums for White settlers in the tropical world. This entailed a search for "the correct extra premium to be charged for insured lives going abroad . . . the extra risk incurred."⁸ Although almost all insurance carriers adopted "tropical extras," I argue that "tropical rates" were inconsistent and ambiguous, ultimately failing to find a consensus among actuaries. Between 1852, when the Scottish Life offices attempted a first standardized approach, and 1947, when Manulife, punctuating an emergent industry practice, dismantled the different rates it imposed on tropical settlers, "tropical extras" were a common, if highly uneven, life insurance practice.

8. Chatham, "On the Rates of Mortality," 338.

When tropical rates failed to gain actuarial consensus, actuaries turned to a second strategy that involved a new set of enthusiasms for a social way to resolve these tensions. This ambition involved not the calculation of a perfect tropical price mechanism but a social practice associated with emergent discourses of sanitary practice. These discourses suggested that settler uncertainties could, at least in certain circumstances, be contained by newly "social" practices of sanitary progress—public water and sewage infrastructure and basic public health measures—which might render tropical settings healthier and, by extension, as places capable of hosting some degree of White settlement. These social interventions orbited around the orientalist claim that tropical bodies and places were in need of cleansing. Unlike bold domestic social experiments by American life carriers, however, insurers only haphazardly addressed tropical social interventions, despite their mounting ideological enthusiasm for sanitary progress. Although discourses of sanitary improvement emerged out of the dissensus around tropical rates, and although enthusiasm among actuaries for these measures was often explicitly used to argue against tropical rates, I do not want to suggest any straightforward story of progressive replacement. Rather, actuaries continued to impose tropical rates, at least in some form (and with less consistency) even as insurers increasingly turned to possibilities associated with social intervention.

Insurance historians have charted a history not of a straightforward triumph of science or actuarial objectivity but rather of emergence out of all variety of contests, confusions, and meanderings. The story of tropical exposure offers a variant of this twisting and variegated history. The strategies developed by insurers—incomplete and stuttering—underscore, in particular, the question of difference as a foundational but fraught problem for life insurers. Although questions of difference first emerged domestically, the tropical history of Anglo-sphere life insurance is distinctive because it offers a glimpse into insurers as they grappled with what they perceived as a particularly pernicious form of danger. This exceptional difference, moreover, threatened to undermine the ways in which actuaries were learning to convert difference into calculative and probabilistic terms. The questions that actuaries constructed about the tropical context—especially relating to the im/possibilities of White settler colonialism and to the ways in which White and "other" lives might be priced in those contexts—are particularly revealing as places where difference was cast as an elemental problem to be managed and solved.

Put differently, the critical histories of life insurance, as the next section emphasizes, on the one hand, narrate a story of an actuarial fantasy of calculative flattening, and, on the other hand, of a persistent set of tensions and resistances that often rendered that flattening partial or incomplete. The story of life insurance and tropical difference offers a variation of this history not so much in terms of the lingering commitment of actuaries to subjective discretion—a theme key to the early histories of life insurance and scientific calculation—but in terms of an orientalist anxiety among actuaries that refracted the dream of actuarial flattening through and against concerns about exceptional difference emanating from tropical bodies, cultures, and spaces.

To mount an argument in these terms, this article is divided into four sections. The first two sections briefly sketch the conceptual underpinnings of the article. The first section reinforces key themes from recent critical histories by emphasizing insurance as a variegated and uneven

practice often preoccupied with questions of racialized difference. The second section extends this historical work by arguing that one site key to the *longue durée* of life insurance is settler colonialism. The third and fourth sections provide the empirical texture for this argument by considering the discourse of Anglo-American actuaries as they entered tropical colonies and debated the role of insurance in White settlement of the tropics. The third section turns to the issue of “tropical rates,” an early set of experiments designed by actuaries to manage the tensions of a tropical world they felt drawn to but also worried about. Ultimately, tropical rates, like the longer history of life insurance they inhabit, became characterized by scientific dissensus and unevenness. The fourth section turns to the second strategy insurers discussed as they entered tropical markets: an actuarial interest in the question of the social. This entailed conversations about the possible repositioning of tropical risks as social uncertainties that could, at least in certain conditions, be managed via (Western) social interventions and “sanitary progress.” The conclusion returns to the larger questions of racialized difference by arguing that racialization lies at the heart of life insurance in ways that often leave those differences unresolved and intact. This racialization is evident not only in the ways in which life insurers addressed settlers and questions of settlement—documented in the third and fourth sections—but also in the ways in which insurers were eventually confronted with questions of “natives” and how their lives might be addressed and priced.

Insurance, Difference, and Race

According to Ewald, insurance is malleable over time and bound up in different “imaginaries” reflective of shifting “social and political objectives.”⁹ The mythical ambition of actuarial work entails the conversion of uncertainty into calculable form, or “a phenomenon that can be objectified, anticipated and ultimately managed with numbers.”¹⁰ As life insurance consolidated and expanded in the nineteenth century, actuarial knowledge assumed a kind of “normal science,” a settled form of established scientific inquiry.¹¹ At the center of this actuarial imagination is the taming of difference, not an attempt to “discipline” or eliminate difference but to know it as a calculative object; that is, differences “understood as locations in actuarial tables of variations.”¹² In this form, actuarial knowledge seeks to find the proper location for all points in the distribution, a place for every body regardless of the variation they represent.

However, life insurance knowledge, which is never immaculate, entails “a long history of struggle and opposition.”¹³ The history of insurance, concurs Bouk, is animated by the “fraught stories behind the making of statistical individuals.”¹⁴ The arrival of the probabilistic approach to risk, for example, was piecemeal and contested. Mathematical conceptions of risk entailed a search for overall patterns and “regularities of” mortality experience. This

9. Ewald, *Birth of Solidarity*, 97; see also Horan, *Insurance Era*, 4.

10. Maechler and Graz, “Is the Sky or the Earth the Limit,” 1–2.

11. Kuhn, *Structure of Scientific Revolutions*.

12. Simon, “Ideological Effects of Actuarial Practices,” 772.

13. Zelizer, *Morals and Markets*, 1.

14. Bouk, *How Our Lives Became Numbered*, xviii.

conceptualization of uncertain events as mathematically stable, however, contrasted with approaches to selection predicated on local forms of discretion and judgment. Actuaries of the early nineteenth century, notes Daston, were "reluctant to substitute general rules for judgments about the individual case," and proved hostile to approaches keen to situate risks within larger patterns.¹⁵ Quantification, as Porter has suggested "is a technology of distance. . . [and] reliance on numbers and quantitative manipulation minimizes the need for intimate knowledge and personal trust."¹⁶ However, actuaries persistently defended their capacity to exercise "intimate knowledge" and rebuffed new quantitative approaches.¹⁷

Hacking identifies a "sharp change. . . in the two decades 1820–1840": actuaries began to reformulate life insurance as an object that could be known more fully in calculative terms.¹⁸ In the American context, this trend crested a bit later, coinciding with a period of growth between the economic crises of 1873 and the public scandals ultimately resulting in the Armstrong investigation in 1905.¹⁹ Threaded into these moments of upheaval and growth is a tension between what Bouk describes as the practices of "smoothing" and "classing," which is a "tension between smoothing away particularities, as the actuaries advocated, and classing all experience into tiny boxes as doctors preferred."²⁰ This was laid on top of a tension between the contending emphases of individuation and aggregation, the need to place risks in larger classes, and continuing commitments to an "exalted individuality."²¹

In Bouk's terms, insurers "fumbled, improvised, debated and fought their way toward national systems for. . . producing risks."²² In this fumbling, the ambition of actuarial objectivity ran up against a messiness born out of the political, economic, professional, and social contexts insurers inhabited. This entails tensions in the ways actuaries approached and reconciled questions of difference and sameness, the particular and the general, the local and the universal—puzzles not easily resolved but animated most strikingly in relation to questions of race.

Performing and Classifying Difference

If life insurance has a fumbling history, it is one deeply shaped by questions of difference. As insurers navigated the tension between classing and smoothing, they increasingly constructed complicated aggregations of individuals as classified risks. This confronted insurers with complex and often unresolved questions regarding the status of social differentiations recast

15. Daston, *Classical Probability in the Enlightenment*, 122.

16. Porter, *Trust in Numbers*, ix.

17. Daston, *Classical Probability in the Enlightenment*, 138.

18. Hacking, "Biopower and the Avalanche of Printed Numbers," 281.

19. Zelizer, *Morals and Markets*; Morton, *Life Insurance Enterprise*.

20. Bouk, *How Our Lives Became Numbered*, xiii.

21. Simon, "Ideological Effects of Actuarial Practices," 776.

22. Bouk, *How Our Lives Became Numbered*, xxv. Although Bouk's work is instrumental in critical analyses of risk and insurance, it entails a kind of methodological nationalism—a focus on *national* systems for produce risk. In this article, I operate at a more globalized scale of analysis.

as risk classifications. What happens to deeply problematic social differences when they are reframed as risk classifications?

This question was important because insurers often addressed racial difference in contradictory ways. As Simon notes, emergent actuarial knowledge was concerned with a certain method of managing difference by converting it into locations in probabilistic distributions.²³ Racial difference, however, confronted actuaries with a degree of uncertainty they constructed as particularly pernicious. Although some of the earliest industrial carriers offered insurance to Black Americans on equal terms, racialized distinctions quickly emerged. John Hancock Life Insurance actuaries introduced a table of “colored risks” in 1880.²⁴ A year later, both Prudential and Metropolitan companies issued life insurance policies to Black Americans that extended only two-thirds of the standard benefit offered to White policyholders.²⁵ As Heen notes “classifying blacks as inferior by ‘nature’ and thus as ‘substandard’ insurance risks, race-distinct pricing structures became firmly entrenched in the insurance industry.”²⁶

This twisting story of racialized classification is marked by landmark legislation in Massachusetts in 1884, which prohibited “discrimination between white persons and colored persons. . . as to the premiums or rates charged for policies upon the lives of such persons.”²⁷ This early victory for those opposed to racialized risk classification led to a wave of similar regulation across northern American states. Despite this growth in antidiscrimination measures, “insurers developed sophisticated measures to circumvent such policies.”²⁸ Many insurers simply withdrew from Black American markets or placed informal obstacles for these applicants.

Life insurers depicted difference as inherent. Key to this perspective was Frederick Hoffman, a German immigrant and a long-time actuary at Prudential, who eventually served as its vice president. Wiggins points out that in Hoffman’s pivotal article, “Race Traits and Tendencies of the American Negro,” Hoffman “sought to prove the inherent riskiness of the American Negro”; in doing so, he recast Black communities as dangerous.²⁹ According to Wiggins, Hoffman argued that the “American Negro was beyond redemption,” and he characterized them with an “excess of criminality.”³⁰ Hoffman himself argued, “Gradual extinction is only a question of time.”³¹ This argument established a rationale for the abandonment of Black life insurance markets and a broader claim that “the black race was. . . absolutely uninsurable.”³² Invoking difference in starkly naturalized terms, Hoffman’s argument helped rationalize racially segregated insurance markets.

This difference confronted actuaries with a paradoxical pressure. Insurers became preoccupied with profitable differences; that is “a field that specialized in ascertaining and

23. Simon, “Ideological Effects of Actuarial Practices.”

24. Wiggins, *Calculating Race*, 12.

25. *Ibid.*, 11; Bouk, *How Our Lives Became Numbered*, 34; Heen, “Ending Jim Crow,” 375.

26. Heen, “Ending Jim Crow,” 372.

27. Bouk, *How Our Lives Became Numbered*, 44.

28. Wiggins, *Calculating Race*, 18.

29. *Ibid.*, 23.

30. *Ibid.*, 23–25.

31. Hoffman, “Race Traits of the American Negro,” 329.

32. *Ibid.*; see also Wiggins, *Calculating Race*, 27; Wolff, “Money Value of Risk,” 24; Bouk, *How Our Lives Became Numbered*, 49.

categorizing difference."³³ However, as companies expanded, insurers were increasingly confronted with—and as noted, often failed to resolve—key puzzles regarding how differences could be managed in actuarial terms. What is the epistemological status of risks and risk classifications that are rooted in long experiences of inequality, disenfranchisement, and violence? Should actuaries merely record those differences, or should they acknowledge them as social artifacts that could be remade? And, crucially, in what ways is actuarial science implicated in these makings and remakings?

To overcome their concerns, actuaries tried two different strategies in their domestic markets. First, they invoked a notion of actuarial fairness, which was a model that calculated difference not as a function of racialization but as an objective condition.³⁴ This entails making visible differences as they are: "the rational calculation of risk on which 'fair' insurance is based. . . [is] a value free technical decision."³⁵ Actuarial fairness does not entail a political or social assessment of existing differences or inequalities but a detached calculation of the rates of mortalities—as they exist—of those differences.

Notwithstanding this claim to actuarial neutrality, risk classifications often worked to reinforce the social inequalities that generated differential risks in the first place, because they took existing social inequalities as a given: "risk classifications correlate with a fairly simplistic and static notion of social stratification."³⁶ Quantified classifications are translations of inequalities—often born of violent conditions of possibility—into forms without history, violence, or context. This suggests that calculation often worked to recast instances of extreme violence, including racialized colonialism, into neutral objects without context.³⁷ This translation accomplished what Simon describes as demoralization:

[B]ecause they [actuarial practices] demoralize—create as morally neutral—differences that carry highly-charged political and social significance (such as race and gender) they threaten to obscure the historical effects of domination and conflict. . . . The ideological power of actuarial practices is their ability to neutralize the moral charge carried by these forms of difference.³⁸

As treated by actuaries working within the rationality of "actuarial fairness," difference was taken as a given and an abstracted fact without a social history or a future possibility.

The second strategy used by insurers invoked, by contrast, was a sense not of differences as they are but as they might become in the wake of particular kinds of social interventions. Simon argues that traditional actuarial practice was an effort "to map out the distribution . . . of

33. Horan, *Insurance Era*, 175.

34. *Ibid.*, 169.

35. Simon, "Ideological Effects of Actuarial Practices," 779.

36. *Ibid.*, 786; Austin, "Insurance Classification Controversy," 534.

37. On the link between colonial violence and calculation, see Huf, "Averages, Indexes and National Income"; Barclay, "Contending Centres of Calculation."

38. Simon, "Ideological Effects of Actuarial Practices," 776–794. Actuaries "statistically proved the inequality...between whites and people of color, but . . . [they] did not correct for inequities in medical care, law, housing, environment, economic opportunity, or education...[or] the histories of genocide, slavery, or indentured servitude." Wiggins, *Calculating Race*, 11.

the population as it stands.;"³⁹ Wolff, meanwhile, finds that knowledge of differences were "based on the empirical fact of elevated risk, not on social ideology."⁴⁰ Nonetheless, in the early twentieth century, American insurers began to experiment with forms of intervention into these "facts" not merely to measure but also, at least in certain circumstances, to alter the social conditions leading to "excessive mortality."

As conventionally narrated, the "social" emerges as a reaction to class difference and to the social cleavages of the nineteenth century. In a slightly different inflection, the "social" also emerged in reference to the context—the environment—out of which human relations are shaped and through which what it means to be human alters over time. Ewald offers a different variant of the social in his iconoclastic reading of the French welfare state focused on the relationship between social solidarity and insurance. For Ewald, "the essential technology of the welfare state, that of insurance," helped constitute "a new form of governmentality" built around ideas of social solidarity and mechanisms of social insurance.⁴¹

Although Ewald's argument that insurance and the social were mutually implicated is an immensely important insight, the form of this relationship was varied across locations. Moran, for example, documents postwar life insurance in Japan as part of a broader reform effort designed to manage social unrest relating to industrialization by encouraging working-class populations "to freely transform themselves into more responsible subjects."⁴² In the American context, the social was taken up by insurers in ways different from those described by Ewald or Moran. Led by key figures at Metropolitan Life, many insurers responded to a crisis in legitimacy of the early 1900s by attempting to embed themselves into an embryonic language of the social. These efforts took the form of Metropolitan's famous nursing visit service, a tuberculosis sanatorium, and long-running public health and educational campaigns.⁴³ Thus, insurers encouraged working-class clients to appreciate preventive medical practices and the adoption of public health priorities into their everyday lives. These initiatives were, put simply, "efforts to remodel life insurance corporations as 'social work.'"⁴⁴

This "social work" represented a stark departure in the aims of life insurers—an effort to shift the mortality curves they had previously sought only to calculate. This change eventually catalyzed projects of "life extension," with the centerpiece being annual medical examinations for working-class clients to proactively identify health issues. In doing so, insurers acknowledged "that risk writing could become a tool for reforming lives and not just for classing them."⁴⁵ This introduction of basic health and welfare measures was a fundamental reworking of mortality curves, which were now conceived as conditions that could be altered.

However, these social interventions were mobilized in deeply uneven ways. As Heen notes, Hoffman, in his work as Prudential's actuary, frequently invoked a "black exceptionalism" that emphasized not the social sources of "excessive" Black mortality but the ways in which that mortality was built into nature. As Heen points out, although Hoffman attributed the

39. Simon, "Ideological Effects of Actuarial Practices," 773.

40. Woolff, "Money Value of Risk," 22.

41. Ewald, "Risk, Insurance, Society," 6; Ewald, *Birth of Solidarity*.

42. Moran, "Delivering Security in Japan," 620.

43. Wolff, "Money Value of Risk."

44. Bouk, *How Our Lives Became Numbered*, 114.

45. *Ibid.*, 122.

prevalence of disease in the general population "to social, economic, and environmental conditions, he did not similarly attribute black mortality to such conditions."⁴⁶ This suggests that the "social," as a field available to insurers, was deeply partial. In many ways, it reproduced the racialized differences that "actuarial fairness" also left intact: a product of the long-term commitment made by many insurers to naturalized conceptions of risk, which proved difficult to dislodge or weaken. And as Bouk suggests, Hoffman's writings were "to serve life insurers—[who] needed to justify abandonment . . . [and] to justify writing African Americans out of a national risk community."⁴⁷

Actuarial science emerged out of an antinomy of detached objectivity and broader social, cultural, and political currents. Insurance historians have usefully noted that actuarial knowledge was varied and contested, especially with respect to the ways in which "insurance classification. . . is tied to social stratification."⁴⁸ The broad history of insurance is not straightforward but includes unevenness, failures, and unexpected outcomes. Insurance historians, however, have often sketched these contexts in relatively particular kinds of ways, such as debates about professional practice⁴⁹ or as conversations about national societies and the ways in which difference in those contexts could be governed.⁵⁰ These bounded settings, however, do not exhaust the contexts in which actuaries grappled with how life could be calculated at the intersection of difference and regularity. These conversations were key, albeit in unique form, to the global practices of settler colonialism.

Settler Colonialism and the Insurance Imaginaire

Settler colonialism is a particular kind of imperial ambition characterized by the permanent transfer of settler populations from metropole to colony. It is a form of imperialism in "which the colonizer comes to a 'new' place . . . to stay, making the 'new' place his permanent home."⁵¹ This "coming to stay" entails inherent and ongoing violence. Because settler colonialism orbits around land—and access to territory "is settler colonialism's specific, irreducible element"⁵²—it requires the disposal of Indigenous presence. Removal is necessitated by a logic that converts territory into commodified property and that frames Indigenous peoples as obstacles to the circulation of both settlers and land.⁵³ As a result, as Wolfe has famously noted, settler colonialism requires a "logic of elimination," which is the foundation of a new political order built on the removal of Indigenous inhabitants. This is a "perverse ontology of settler becomings."⁵⁴

46. Heen, "Ending Jim Crow," 377.

47. Bouk, *How Our Days Became Numbered*, 52; see also Wiggins, *Calculating Race*, 26.

48. Austin, "Insurance Classification Controversy," 517.

49. Porter, *Trust in Numbers*; Daston, *Classical Probability in the Enlightenment*.

50. Bouk, *How Our Lives Became Numbered*; Wiggins, *Calculating Race*; Heen, "Ending Jim Crow."

51. la paperson, *Third University Is Possible*, 1; see also Morgensen, "Biopolitics of Settler Colonialism"; Simpson, "Settlement's Secret."

52. Wolfe, *Transformation of Anthropology*, 338.

53. Bhandar, "Title by Registration," 279; la paperson, *Third University Is Possible*.

54. la paperson, *Third University Is Possible*, 2.

[This order] strives for the dissolution of native societies . . . [I]t erects a new colonial society on the expropriated land base. . . . [S]ettler colonizers come to stay: invasion is a structure not an event . . . [E]limination is an organizing principal of settler-colonial society. . . . Settler colonialism destroys to replace.⁵⁵

To settle is to engage not simply in movement but in deeply violent kinds of domination that “produced in the settler an anxiety of proximity.”⁵⁶ “Settlers,” Mamdani notes succinctly, “are made by conquest, not just by immigration.”⁵⁷ As Wolfe reminds us, however, this is a form of control exercised not only over space but also over time as a projection of domination that continues into the settler future.⁵⁸ Meanwhile, Veracini argues that “settler colonialism is both a global and contemporary phenomenon . . . [that] we need to learn to ‘read’ a settler colonial world where we simply see a ‘normal one.’”⁵⁹ Research on settler colonialism reads this world in a complex range of ways: as settler colonialism and its constitutive racialization of whiteness;⁶⁰ as accumulation enabled by the long-term acquisition of settler wealth; as particular forms of sovereignty constituted within a discourse that suggests that “settlers are founders of political orders and carry their sovereignty with them”⁶¹; and as the broader analysis of partial settler law that expands incessantly as the “logic that initially informed frontier killing transmutes into different modalities.”⁶²

I argue in the remainder of this article that life insurance is deeply implicated in settler colonialism. Settler-colonial violence requires calculation. For example, because it entailed nearly insurmountable uncertainties associated with violence and Indigenous people’s removal, settler expansion required the calculation and management of risk. Park, for example, has noted the importance of the system of Indian Depredation Claims, and what she describes as an early experiment in “social insurance” in the attempt to manage the risks that settlers encountered as they expanded westward in America. This argument foregrounds forms of “insurance . . . designed to encourage settlement as a means of conquest, and to thereby creatively finance its expansion.”⁶³

Park’s discussion and the histories of insurance reviewed above⁶⁴ lie in tension with conceptions of life insurance as an abstract and placeless practice. These abstract conceptions depict actuarial science as a kind of instrumentalization of life that is “transformed into an ‘insurance risk’ . . . an abstract object—one that is placeless, timeless and contextless.”⁶⁵

55. Wolfe, *Transformation of Anthropology*, 388.

56. Quoted in Veracini, “On Settleness,” 8.

57. Mahmood Mamdani, *When Does a Settler Become a Native? Reflections on the Colonial Roots of Citizenship in Equatorial and South Africa*. Inaugural Lecture as A. C. Jordan Professor of African Studies, Centre for African Studies, University of Cape Town, May 13, 1998.

58. Wolfe, *Transformation of Anthropology*, 380.

59. Veracini, *Settler Colonial Present*, 8.

60. Moreton-Robinson, *White Possessive*, xii.

61. Veracini, *Settler Colonialism*, 3.

62. Wolfe, *Transformation of Anthropology*, 402; see also Morgensen, “Biopolitics of Settler Colonialism,” 62.

63. Park, “Insuring Conquest,” 58.

64. See Daston, *Classical Probability in the Enlightenment*; Alborn, *Regulated Lives*; Bouk, *How Our Lives Became Numbered*.

65. Van Hoyweghen, “On the Politics of Calculative Devices,” 344.

Although life insurance is a technology of abstraction, I echo Park and other insurance historians by arguing that it has neither been shaped outside of time and space, nor has it been innocent within the pressures of particular historical moments. As Ewald argues, "insurance technology and actuarial science did not fall from the mathematical skies. . . . They were built up gradually out of multiple practices."⁶⁶ As noted, what it means to be an "insurance risk" has not been timeless or placeless but has been malleable and contingent.

I argue in this article that settler colonialism is one of the malleable sites that are key to the formation of life insurance. As Frederick Hoffman put it to the president of Prudential, life insurance is deeply related to "problems of American trade expansion" and "risks on the lives of persons intending . . . residence in Tropical South America."⁶⁷ Similarly, Edward Phelps, an insurance journalist and editor of the *American Underwriter*, noted a link between insurance and the settling of new American colonies in the wake of the Spanish–American War. He wrote that it is "inevitable that that pioneer of progress, the life insurance agent, will soon be working his way into every hamlet in the former possessions of Spain." For Phelps, "settled conditions in those islands" and a "migration thither of adventurous and ambitious Americans" will result in "an almost boundless field of expansion" for American life insurance. He found that "formulation, insurance and settlement are inextricably linked, a 'boundless field' made possible by the role of insurance in managing the risks of colonial lives."⁶⁸

As life insurers expanded internationally, life they became deeply interested in the possibilities of settler colonialism in the tropical world. The work of "insurance companies, throws further light upon . . . the existing difficulties, and the possibilities . . . of white settlement . . . within the tropical zone."⁶⁹ This burgeoning interest was focused on both understanding and managing the risks of White settlement. "Actuaries," E. J. Hancock argued, "ought always to consider sympathetically the best means of affording adequate life assurance for their fellow country men, upon whom the colonization of the Empire depended."⁷⁰ Insurers increasingly took on the project of settlement as an unproblematic practice. As one actuary put it: "The subject of life assurance in the tropics" is key to the elimination of any "barrier to successful settlement by white races."⁷¹ Framed in explicitly imperial terms, actuarial practice entailed a commitment to extend life insurance into tropical locations "adapted to settlement and cultivation on part of the white race."⁷² Hoffman, a figure at the very center of American actuarial debates, urged the possibilities of settlement. He also argued that affordable life insurance rates might facilitate "the development of vast and fertile regions . . . [support the] men who do pioneer work and who are deserving of every possible consideration . . . and give furtherance to American Commerce in the tropics."⁷³

66. Ewald, "Risk and Insurance," 198.

67. Fredrick Hoffman to Forrest F. Dryden, president, May 16, 1921, Box 8, Book 26, Frederick Hoffman Papers, Columbia University Rare Book and Manuscript Library.

68. Phelps, *Tropical Hazards*, iii.

69. Price, *White Settlers in the Tropics*, 201.

70. Quoted in Raynes, "Discussion on Life Assurance," 40.

71. Quoted in Haslam, "Discussion on Life Assurance," 1091.

72. Hoffman, *Life Insurance Progress*, 29.

73. *Ibid.*, 30–31.

Insurers became important enthusiasts for empire and adopted the language and metaphors of imperial culture. James Chisholm, a British actuary, reported on actuarial risks in South Africa by foregrounding planters who opened and settled land. This conjuring of the figure of the planter—an image at the core of Lockean settler-colonial cultures—became important to some insurers as they entered tropical markets:

The Boer farmer was an industrious man, who turned valleys where a furrow had never been driven into fertile and cultivated land . . . doing an immense amount of work in developing the soil. It was in towns [by contrast] where immigrants mostly collected . . . and it was necessary to discriminate very closely among the town populations when the question of life assurance came to be considered.⁷⁴

In linking insurance to the language of empire, actuaries turned repeatedly to the question of difference. For Meikle, ambitions for White settlement were a kind of longing for a global calculative space—for a world (eventually) made flat by sameness and the elimination of unknowable difference. Settlement and settling (and colonial violence more broadly) in this framing are analogous to understanding actuarial knowledge as a practice that could enable the objective calculation of patterns of experience. Meikle’s actuarial scrutiny of India lamented the lack of settlers in an analysis that conflated settlement, sameness, and calculative certainty:

It must be borne in mind that continuous residence in India is the exception rather than the rule. Flying mercantile visits to India are far more frequent than those of settling down, so usual in the case of emigrants to Canada and Australia. . . . But I have no doubt that when the more distant parts of the world are brought nearer to each other by the increased facilities for travel . . . when the world will be looked upon as a whole rather than composed of many dissimilar parts, the Assurance Offices generally will give permission to reside anywhere for the same continuous rate of annual premium.⁷⁵

The fantasy of a “worldwide policy” encodes a dream of actuarial flattening and of easy conversion of the dangers at settler frontiers into financialized risks. This formulation offers a powerful way of understanding the ultimate goals of actuarial science and difference: the removal of irredeemably dissimilar parts.⁷⁶ In doing so, this formulation is an index of the anxiety of some actuaries regarding the difference they perceived rooted in those spaces. In circulating this representation, moreover, insurers were simultaneously reframing (and rendering invisible) the violence of settlement into mere commercial instruments, or into mundane forms of settler contract.⁷⁷ In promoting this fantasy, insurers adopted what Veracini

74. Quoted in Tarn, “Some Notes on Life Assurance,” 557–558.

75. Meikle, “On the Additional Premiums,” 294.

76. Simon (“Ideological Effects of Actuarial Practices”) argues that actuaries embraced the profitable plotting of difference in probabilistic distributions. What actuaries were concerned about, however, was the pernicious danger. Kramer (“Power and Connection”) describes this as the *exceptionalized difference* perceived in the tropics.

77. I adapt Nichols’s conception of the settler contract “to refer to the strategic use of the fiction of a society as the product of a ‘contract’ . . . to displace the question of that society’s actual formation in acts of conquest.” Nichols, “Indigeneity and the Settler Contract Today,” 168.

calls the "settler gaze," which was a line of "vision [that] . . . could see a whole settler body politic 'to come.'"⁷⁸ This actuarial gaze—a way of conceiving a leveled world rendered calculable—was simultaneously a form of settler gaze and an attempt to envision a tropical world settled by White bodies that was rendered open without friction to the movement of settlers.

This growing settler gaze was understood by insurers as more than a commercial practice. It was also related to cultural terms. The unique conceptions life insurance encoded of time as predictable and of uncertainty as fungible were often framed as the embodiment of a uniquely Western "culture."⁷⁹ Although insurers were never able to implement this idealized version of actuarial flattening in practice, it nonetheless encoded a conception of the future as calculable, a form of what Rifkin refers to as "settler time— notions, narratives, and experiences of temporality that de facto normalize non-native presence, influence, and occupation."⁸⁰ Life insurance as "settler time" took many forms, including in key debates throughout the nineteenth and early twentieth centuries about how this time would be priced in the tropical context.

Tropicality and the Making of Tropical Rates

Tropicality refers conceptually to the ways in which "the tropical world was constructed, named, and brought into cultural circulation."⁸¹ In David Arnold's key formulation, "the tropics need to be seen 'as conceptual, and not merely physical, space'" and as "invented quite as much as they were encountered."⁸² Rather than assume the tropical as an unproblematic category, tropicality requires an analysis that is "genealogical, in that it aims to trace, through selected moments . . . some of the ways in which tropical nature has been imagined, produced and interpreted in modern history."⁸³ Deeply orientalist, tropicality:

[Often conjures images of] "innocent" and "primitive" peoples inhabiting a primordial, almost dreamlike world. But the tropics were also the "torrid zone" and came to signify abundance and excess in more troubling ways—diseases of a kind or intensity unknown in Europe. . . . [P]lagues of insect pests, violent storms and crashing surf. . . . [A] predation and savagery in nature. . . and savagery of the "tropical races" themselves. Seemingly so inimical to white health and settlement.⁸⁴

78. Veracini, "On Settleriness," 4.

79. U.S. Bureau of Domestic and Foreign Commerce, *Insurance in Foreign Countries*, 135; M. A. Khan, "Multi-Racial Prospecting," *Prudential Bulletin Overseas Number 1966*, Corporate Archives, Prudential Insurance.

80. Rifkin, *Beyond Settler Time*, 9.

81. Livingstone, "Tropical Hermeneutics," 91.

82. Quoted in Clayton, "Militant Tropicality," 180.

83. "'Inventing' the tropics was folded within broader colonial intentions." Stepan, *Picturing Tropical Nature*, 13. See also Ring, "Inventing the Tropical South"; Arnold, *Tropics and the Traveling Gaze*, 110; Duncan, *In the Shadows of the Tropics*; Arnold, "Introduction," 6; Okihiro, *Pineapple Culture*, 22; Eves, "Unsettling Settler Colonialism," 306; Castano, "Borders of Tropicality," 2; Clayton, "Militant Tropicality," 180.

84. Arnold, *Tropics and the Traveling Gaze*, 111; cf. Clayton, "Militant Tropicality," 180.

Beginning in earnest in the nineteenth century, life insurers were implicated in their own production of tropicality by framing the tropics as a site of pernicious—that is, exceptionalized—danger. This meant representing the tropical world as a form of difference beyond actuaries' capacity to know and calculate. On the one hand, actuarial knowledge is defined not as a disciplinary form (i.e., difference in need of elimination) but as an attempt to know difference and subject it to calculative regularity.⁸⁵ This suggests that insurers often sought the frontiers of the knowable in order to find new uncertainties that could be profitably managed.⁸⁶ On the other hand, many actuaries perceived the tropical world as an exception, a space of uncertainty beyond their calculative reach. This conjures what Kramer suggests as a definitive anxiety at the heart of imperial power. He notes “the importance of exceptionalizing difference: imperial power promotes and is generated through distinctions among populations that lend shape to its vertical gradations.”⁸⁷ Insurers did not represent the tropical world as a site of stabilized uncertainty but as a particularly insecure site of irregular and unknowable danger deeply related to the exceptionalized forms of difference it contained.

This sense of exceptionalization built on broader currents of conversation regarding the dangers and opportunities associated with White settlement in the tropics. In these conversations, the tropical world was framed as an urgent problem to be solved and a place with immense uncertainty. The urgency pivoted, in part, on the immense “virgin reservoirs of foodstuffs and raw materials, awaiting only the enlivening energies of the exploitative and colonizing whites.”⁸⁸ Compounding this concern, however, were dangers, conjured in orientalist fashion, regarding native populations and the abundant belief that they were ill-equipped to govern themselves. This was a theme well-developed by Benjamin Kidd, a British sociologist and social Darwinist, whose *The Control of the Tropics* in 1898 became an exemplar of imperial preoccupations with White settlement of the tropics: “Over a considerable proportion of these regions, we have existing a state either of anarchy, or of primitive savagery.”⁸⁹

Colonizers imagined danger in the form of “natives” as obstacles to the capitalization of tropical resources. “The danger to the white race,” Gregory argued, “comes from its dependence on the maintenance, in lands held by the coloured race, of conditions which would be jeopardized by the withdrawal of white supervision.”⁹⁰ Administrators also fretted about the dangers of “tropical exposure,” worrying that White bodies would become contaminated by natives through infection and debasement. Settling tropical spaces meant that “whites . . . [would become] surrounded by vast human reservoirs of disease and degradation.”⁹¹ These are the dangers that imperialist commentators thought inherent in the difference between natives and settlers.

85. Simon, “Ideological Effects of Actuarial Practices.”

86. Lobo-Guerrero, *Insuring Life*.

87. Kramer, “Power and Connection,” 1350.

88. Price, *White Settlers in the Tropics*; Hoffman, *Mortality of the Western Hemisphere*.

89. Kidd, *Control of the Tropics*, 15.

90. Gregory, *Menace of Colour*, 22.

91. Hanson, “Introduction,” iii; see also Huntington, *Civilization and Climate*, 35.

In the face of these dangers, the debate around White settlement took complex form. Although some early orientalist scientists expressed optimism about the possibility of White acclimatization in tropical climates, a more generalized pessimism eventually took hold. "The attempt to acclimatize the white man in the tropics," noted Kidd, "must be recognized to be a blunder of the first magnitude."⁹² Robert Knox put it similarly by arguing that "the European . . . cannot colonize a tropical country; he cannot identify himself with it."⁹³ This pessimism pivoted on two cultural conversations. First, imperial commentators emphasized the differences that separated temperate and tropical populations as intractable forms that separated themselves and that world.⁹⁴ Second, nineteenth-century scientists became increasingly interested in climate determinism. In many important ways, climate determinism and pessimism about acclimatization are tied together. If climate is deterministic of social capacity, then acclimatization is a fantasy that will not survive against forces built into nature. This deterministic view was also a form of imperial meaning making that painted tropical others as backward:⁹⁵

The greatest events of universal history . . . belong to the North Temperate Zone. The decisive voyages of discovery emanated thence. . . . The fact that they [the tropics] are . . . former colonial possessions of European powers indicates their retarded economic and political development . . . [and] shows how climates help differentiate various branches of the same ethnic stock.⁹⁶

Kidd narrated his variant of this argument by noting that "the white man neither physically, morally, nor politically can be acclimatized in the tropics. The people among whom he lives are often separated from him by thousands of years of development."⁹⁷ In this formulation, pessimists inverted Wolfe's logic of elimination. Although settler colonialism, as Wolfe argues, entailed elimination, removal was not always available in the topical world because it involved problems of presence and entanglement. At the center of the pessimistic perspective was the contention that colonial effort in the tropical world was dependent on native bodies and the ongoing presence of difference that implies. As Kopperrn put it, "We cannot do without the native, because we must acknowledge that we cannot take his place."⁹⁸

A kind of circular logic fed pessimistic views: the impossibility of acclimatization meant a native laboring class was an ongoing requirement, but that presence was itself a force that further undermined the possibilities of White settlement. It is "an impossibility for a European to settle permanently in a tropical country. . . [to do so] he must discard 'civilization.'"⁹⁹ Because White settlers cannot take the place of native bodies, their only fate as settlers was to degenerate into native lives. As one observer noted, the "conclusion that the white man can

92. Kidd, *Control of the Tropics*, 48.

93. Quoted in Livingstone, "Human Acclimatization," 368.

94. Harrison, "'Tender Frame of Man,'" 70.

95. Duncan, *In the Shadows of the Tropics*, 15.

96. Semple, *Influences of Geographic Environment*, 611; Price, *White Settlers in the Tropics*, 196; Taylor, *Environment, Race and Migration*, 465.

97. Kidd, *Control of the Tropics*, 54.

98. Koeppern, "Influence of a Tropical Climate on Europeans," 36.

99. *Ibid.*, 33; Gregory, *Menace of Colour*, 209.

settle in the tropics is confronted by the firm conviction of many authorities that the residence there of people reared in a temperate climate inevitably involves their degeneration.”¹⁰⁰ This anxiety of a fear of exposure to difference was often sketched in bodily terms. L. W. Lyde, a geographer at the University of London, wrote in 1925 that “the descendants of white settlers in the tropics would acquire a dark skin and a bridgeless open nose, and become a degenerate colour race.”¹⁰¹ These concerns—the fears of listless natives, White degeneration from proximity, and the anxieties about primitive savagery—conjured a lurking, unquantifiable danger inherent in a different world.

Insurers entered these broader conversations about the unique dangers of the tropical world and fretted about the depth of difference they perceived there. They echoed colonial enthusiasts by constituting the tropical world as a site of pernicious danger. This danger was articulated as a kind of “tropical exposure”; and a fear that settlement in the tropics involved a unique vulnerability to differences and dangers that could not be fully known.

Equitable Life, for example, approached the question of its international expansion into the tropical world with no small degree of anxiety. President James W. Alexander revealed his concerns in a memo to his corporate secretary in 1903: “I am just as anxious as you can be to have a large volume of business there.” Alexander questioned the kinds of risks the company would face in insuring tropical lives, writing in the same memo: “I find some very startling things in our mortality experiences referencing tropical conditions.” He also worried about a nearly complete lack of credible data on actual mortality in tropical settings: “I feel pretty confident about the justice of the rate shown in Great Britain; in some other [i.e., tropical] countries, I do not feel so sure.”¹⁰² As an index of his anxiety, three years earlier, Alexander included a handwritten comment on a memo on tropical mortality prepared by his actuaries, noting that “here is the very essence of our problem. We must study, study, study. . . . I want to get this statement back . . . to study more and more.”¹⁰³ Alexander repeatedly urged his actuaries to gather knowledge about tropical risks and “about insalubrious and other conditions . . . which militate against the mortality rate.”¹⁰⁴ Distressed over a tropical world he conceived as strangely unknowable, Alexander, like earlier generations of insurers, contributed to the conditions that would ultimately undermine and complicate the extension of actuarial objectivity. Alexander’s tension around the possibility of objective flattening was not from a resistance to actuarial knowledge or to some lingering commitment to modes of subjective discretion but from an anxiety about its impossibility bound up in orientalist

100. Gregory, *Menace of Colour*, 206.

101. Quoted in Gregory, *Menace of Colour*, 206.

102. James W. Alexander, memo to George, July 14, 1903, Equitable Life Assurance Society of the United States Records, Carton 12, Folder 63, New York, Memos JWA 1903, Baker Library Special Collections, Harvard Business School, Harvard University (hereafter Memo to George).

103. Equitable Life, Memorandum for the Secretary, August 27, 1900, Equitable Life Assurance Society of the United States Records, Carton 12, Folder 61, Equitable Life Memos JWA 1899–1900, Baker Library Special Collections, Harvard Business School, Harvard University (hereafter Equitable Life, Memorandum for the Secretary).

104. Alexander, Memo to George.

conceptions: this was a tropical world he perceived as too dangerous to know and too unsafe to be subjected to an actuarial gaze.

Phelps was similarly concerned by what he termed "new colonial risks," which were the uncertainties that accompanied newly acquired American colonies. In part, the new colonial risks offered profitable opportunities associated with new possibilities of settler colonialism. At the same time, however, these risks pushed insurers to what Phelps conceived as the limit of insurance knowledge and capacity:

"Tropical Hazards" will prove of some real value to the life insurance business in the work of rating the new "colonial risks" . . . [T]he expansion already consummated has unquestionably added . . . a new risk to the category of American life insurance risks . . . [T]he prospective risks may be descriptively grouped as "colonial risks," the constant exposure to diseases peculiar to the Tropics . . . [T]he life insurance companies now have to consider, therefore, practically a new proposition, and now without a parallel.¹⁰⁵

New risks appealed to insurers as uncertainties that could be prospected for new kinds of financial value. These "new colonial risks," however, were unruly, and unknown; "real value to life insurance business" but, at the same time, dangers not easily known.

Pricing "Excess Mortality": The Invention of Tropical Premiums

Distrust over tropical exposure undermined the ways in which actuaries thought they could manage uncertainties as probabilistic regularities and required novel points of intervention. The first strategy that actuaries developed involved tropical rates, or "tropical extras."¹⁰⁶ Equitable executives described this as "an extra premium to cover a higher death rate in tropical countries."¹⁰⁷ In exploring tropical premiums, actuaries attempted a method with which they could derive profits from mortality in uncertain tropical settings. Arthur Hunter, the chief actuary at New York Life, and a key participant in debates about tropical life insurance, succinctly argued for "the construction of premium rates . . . to make as large profits from mortality proportionately as are realized in connection with northern business."¹⁰⁸ Premium rates were envisioned as the price attached to the unique dangers that insurers associated with tropical markets, translated as "special" or "excessive"

105. Phelps, *Tropical Hazards*, 3–9.

106. I want to note a debt to Timothy Alborn and his "Taxing Journeys," one of the few pieces of scholarly work on tropical rates.

107. Equitable Life, Memorandum for the Secretary. Also, Alexander wrote that by adopting tropical "we may get them tougher on rules effecting extra rates in other parts of the world." Alexander, Memo to George.

108. Quoted in Hunter, "Mortality in Semi-Tropical and Tropical Countries," 685. In some ways, tropical rates encoded an ambiguous relationship to imperialism. On the one hand, as Alborn notes, "life insurers swam against" the tide of imperial expansion by introducing a cost or obstacle to settlement. Alborn, "Taxing Journeys," 41. On the other hand, insurers often conceived tropical rates as a mechanism designed to price (and facilitate) expansion correctly.

mortality. James Chatham, the chief actuary at the Scottish Life Assurance Company, argued: “It is quite as important now as ever it was to ascertain as accurately as possible the rate of mortality in unhealthy climates, and the extra premium required to meet the special risk.”¹⁰⁹ He also noted the “unusual hazard to life arising from residence in foreign climate” and a “special risk that is run by assured lives proceeding abroad.”¹¹⁰

In invoking this anticipated “excessive” mortality, actuaries perceived themselves to be confronting not the question so central to nineteenth-century political economy of surplus populations—those left outside the reach of capital—but the conditions of surplus death, the preponderance of mortality beyond actuarial expectations rooted in the experience of Northampton or Carlisle. This entails a concern not with a reserve of living bodies outside of or latent to capital but with a condition of exceptional mortality not easily converted into capitalist value. Hoffman argued: “The normal premium rates charged by life insurance companies do not provide for the extra mortality generally experienced in tropical . . . countries [or] . . . a higher death rate than the normal rate common to the white population.”¹¹¹ Tropical rates were both comparative and orientalist. They were a pricing mechanism reflective of the danger that actuaries constituted in the tropical world in relation to a benchmark rooted in European experience.

Tropical rates eventually became a standard practice for insurers. Hunter noted, simply, “that the first essential to success is a substantial rate of premium.”¹¹² The earliest systematic trial of tropical rates came in 1852 with the premiums that Scottish Life offices circulated to “ascertain the proper rate of premium to be charged” in tropical settings.¹¹³ The Scottish Life offices encouraged the use of tropical premiums divided into four broad zones of settlement. Class A encompassed “North America north of 38 degrees latitude, Madeira, Australia, New Zealand and the Cape of Good Hope” and required an additional charge of 5 to 10 shillings per £100 insured. Class B encompassed the Americas north of 33 degrees latitude and south of 20 degrees longitude and required an “equal addition at all ages of 1 pound per 100” insured.¹¹⁴ Classes C and D marked out liminal zones requiring steeper additional rates. Class C included the “East Indies, Ceylon, Mauritius and China,” and required additional premiums of £2 pounds, 10 shillings per £100 insured; while Class D, a residual category, included the “West India Rates” that were determined “at the discretion of the assurers.”¹¹⁵

Many insurers echoed this practice by delineating zones of differential pricing. Arthur Bailey, an actuary of the Equity and Law Assurance Society in the 1860s, argued that the task of

109. Chatham, “On the Rates of Mortality,” 339.

110. *Ibid.*, 338–340.

111. Hoffman, *Mortality of the Western Hemisphere*, 4.

112. Hunter, “Mortality in Semi-Tropical and Tropical Countries,” 685; see also Jellicoe, “On the Data Collected by the Council of the Institute,” 131–132.

113. Anonymous, “On the Extra Premiums,” 166.

114. *Ibid.*, 167.

115. *Ibid.*, 167–170.

"simplifying and systematizing the charges for climate risk" required clarifying the borders between the "healthy" and "unhealthy" worlds. He suggested that "in the Northern hemisphere, Madeira, Egypt and the Holy Land . . . may I think be included in the healthy districts with the region North of the 33rd parallel of latitude."¹¹⁶ Bailey determined a kind of "general boundary" of tolerable "home rate risks":

[I]t excludes Shanghai in the east, and Charleston in the west. In the southern hemisphere . . . the whole of Australia, the Cape Colony, and Natal should be included in the healthy districts; and I would suggest that the general boundary should be extended to the 31st parallel of latitude, so as to allow of residence in such parts of South America as Valparaiso on the west coast, and Uruguay and the River Plate region, on the east.¹¹⁷

For other insurers, tropical rates were delineated with reference to "free zones"; that is, zones that incurred no additional charge for residence beyond standard European premiums. There were also zones subject to "climate extra." For Harold Lutt, an Australian actuary:

[Free zones consisted of] most portions of the world (Asia excepted) not between 33° North and 30° South; the more civilized parts of Africa North of 30°; and Egypt as far South as the Second Cataract; Asia Minor, Japan, and Siberia (the East Coast and more accessible ports); all Australia (the portion North of 20°; or North of the Tropical of Capricorn sometimes excepted) . . . [and] South Africa (including the Cape Colony, Natal, the Orange River Colony and the Transvaal).¹¹⁸

The residual tropical spaces beyond free zones were subjected to various and complex additional charges (Figure 2).

By the turn of the twentieth century, tropical rates were also an object of scientific analysis. The third International Congress of Actuaries placed on its agenda the issue of "extra premiums for . . . residence in countries where the rate of mortality is abnormal, more especially in the tropics."¹¹⁹ In the conversations that ensued, African risks became a stand-in for broader worries about irredeemable tropical uncertainties. During the proceedings, Chatham noted, "I come now . . . [to] the Dark Continent; and it is well named, whether we have regard to the mystery which even yet surrounds many parts of it, or the death-dealing diseases which abound."¹²⁰ Chatham argued that because African risks could not easily be converted into precise calculations, they could only be priced as exceptions: "Looking at all circumstances," he argued, "I think the extra premium charged for residence in the West and East coasts and British Central Africa should not be less than 5 per cent per annum."¹²¹ Although Chatham and some actuaries attempted provisional price schedules for Africa, others left it unpriced as an incalculable

116. Bailey, "On the Rates of Extra Premium," 82.

117. *Ibid.*

118. Lutt, "On Extra Premiums," 477.

119. International Congress of Actuaries, *Proceedings*, 36.

120. Chatham, "On the Rates of Mortality," 357.

121. *Ibid.*, 360.

Climate Extras.

Locality	UNLIMITED IN DURATION			LIMITED IN DURATION			Remarks
	Lowest Extra	Highest Extra	General Extra	Lowest Extra	Highest Extra	General Extra	
Asia—							
India	10s.	30s.	20s. —	10s.	40s.	20s. —	
Burmah	10s.	30s.	20s. —	10s.	40s.	20s. —	
Persia	nil*	40s.†	20s. —	10s.	25s.	20s. —	{ * N. of 33° † Gulf of Persia
Malay Peninsula } and Siam }	10s.	30s.	20s. +	10s.	40s.	20s. +	1 office discourages
East India Islands—							
Dutch	20s.	40s.	20s. +	10s.	40s.	20s. +	
British or American	20s.	40s.	20s. +	10s.	40s.	20s. +	
China—							
Treaty Ports	nil*	30s.	20s. —	nil	40s.	20s. —	{ * N. of Shanghai, or 33° N.
Remainder	nil†	40s.	20s. —	20s.	40s.	20s. +	† N. of 33° N.
Africa—							
Northern Coast	nil	10s.*	nil	nil	nil	nil	* 1 office only
Egypt, Nile Valley	nil*	20s.†	...	nil*	20s.†	...	{ * N. of 1st Cataract; or 2nd Cataract; or N. of 18° † S. to Khartoum
West Coast	£5. 5s.	£10. 10s.	£5. 5s. +	£5. 5s.	£10. 10s.	£5. 5s. +	18 offices discourage
Congo	£5. 5s.	£10. 10s.	£5. 5s. +	£5. 5s.	18 " "
South West Coast, } 8°–20° S. }	£3. 3s.	£7. 7s.	£5. 5s. —	40s.	£5. 5s.	£3. 3s. —	12 " "
Rhodesia—							
N. of R. Zambesi	10s.	£5. 5s.	20s. +	10s.	£5. 5s.	20s. +	4 " "
S. " "	nil	20s.	{ nil to } { 20s.* }	nil	20s.	{ nil to } { 20s.* }	{ 1 office discourages * According to locality
Delagoa Bay	nil	£5. 5s.	40s. —	nil	£3. 3s.	40s. +	4 offices discourage
Zanzibar	30s.	£3. 3s.	£3. 3s. —	20s.	£3. 3s.	{ 20s. or } { £3. 3s. }	7 " "
British Central Africa	20s.	£5. 5s.	40s. +	40s.	£5. 5s.	£3. 3s. +	7 " "
Mauritius	nil	40s.	20s. —	10s.	20s.	20s. —	
America—							
United States } (portions S. of } 33° N.L. bordering on Gulf } of Mexico) }	nil	40s.	20s. —	nil	40s.	10s. +	
Mexico—							
Tableland	nil	40s.	20s. —	nil	40s.	20s. —	
Coast and low-lying country)	10s.	40s.	20s. +	30s.	40s.	{ 30s. or } { 40s. }	1 office discourages
Central America	20s.	40s.	40s. —	20s.	£3. 3s.	40s. —	
Panama	20s.	£3. 3s.	40s. +	30s.	£3. 3s.	£3. 3s. —	8 offices discourage
West Indies	10s.	50s.	20s. +	20s.	30s.	20s. +	1 office discourages
Guiana	20s.	40s.	20s. +	20s.	30s.	20s. +	1 " "
Brazil	nil*	45s.	20s. +	10s.	30s.	20s. +	{ * S. of free limit; 1 office discourages
Argentina	nil*	10s.	nil +	nil*	10s.	nil +	* All; or S. of 30°
Chili	nil	10s.	nil +	nil	10s.	nil +	
Peru	nil	20s.	20s. —	nil	20s.	10s. +	

Figure 2. Climate Extras.
Source: Lutt, "On Extra Premiums," 470.

danger. One actuary claimed that "careful review of the facts, I have come to the conclusion that the business is not worth doing at any practicable premium that could be charged."¹²²

122. Quoted in *ibid.*; see also Bailey, "On the Rates of Extra Premium," 81.



Figure 3. Life insurance map showing extra premiums for residence in various countries.

Source: Bartholomew, *Life Insurance Map Showing Extra Premiums for Residence in Various Countries*. Edinburgh: Bartholomew, 1900. Courtesy National Library of Scotland.

As insurers grappled with ways to calculate the unknown, they turned frequently to maps as “visual aids for salesmen and customers.”¹²³ These maps constituted both a material and imaginative geography of spaces deemed “safe” or “dangerous” or “hospitable” or “risky.” Chatham’s presentation to the 1900 Congress, for example, was accompanied by a map produced by Bartholomew, a noted Edinburgh cartography house. (Figure 3). “To assist Actuaries in fixing the rate of extra,” noted Chatham, “I have appended a map, coloured so as to show at a glance the extra premiums proposed for residence in any part of the world.”¹²⁴ Chatham’s map offered a colored delineation of five classes corresponding to free zones as well as zones subject to additional premiums (per £100 insured per annum) of “£2.5, £1.5, £3.5 and £5.5 and upwards.” Chatham’s map offers a visible marker of the unique geography constituted by insurers and the kinds of uncertainty they conceived as innate in that geography.

One of the earliest life insurance pricing maps is Connecticut Mutual’s nineteenth-century Map of the World (Figure 4). This map delineates two free zones that roughly correspond to temperate latitudes, but with alterations that exclude Mexico, all of Africa (excepting South Africa and the Cape Colony), most of Asia, and everything to the east of the Urals. It makes visible Connecticut Mutual’s policy of not insuring “against death outside the temperate zones, or in that part of Asia between the 40th and 110th meridians of longitude.”¹²⁵

123. Alborn, “Taxing Journeys,” 46.

124. Ibid.

125. Connecticut Mutual, *Map of the World*, courtesy Connecticut Historical Society.

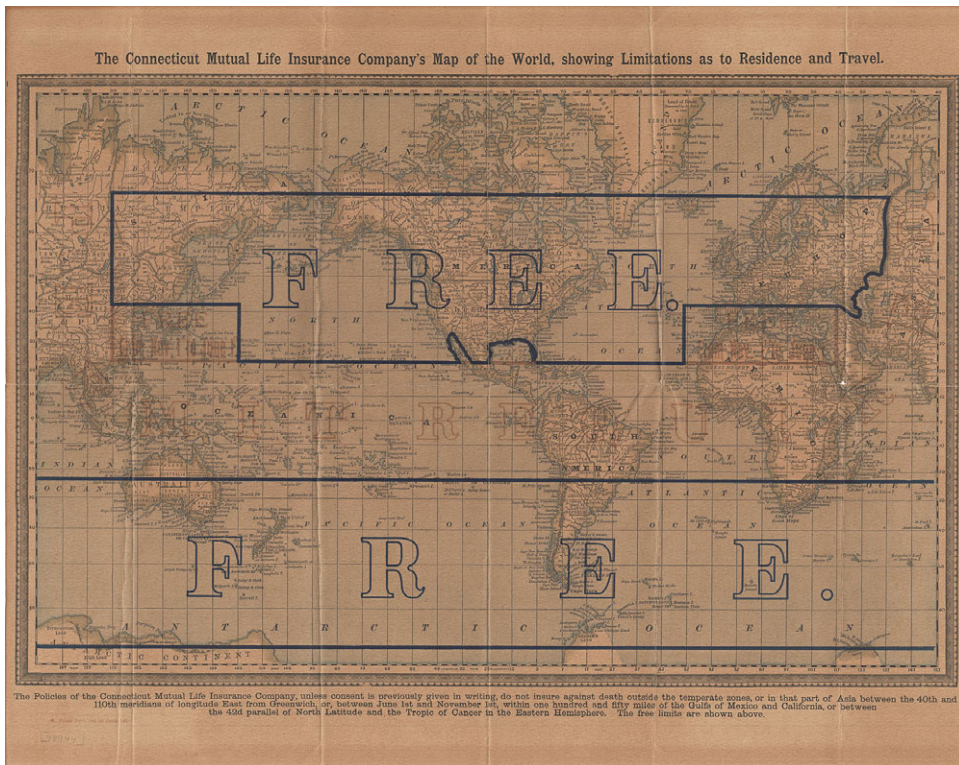


Figure 4. The Connecticut Mutual Life Insurance Company’s Map of the World, showing limitations as to residence and travel.

Source: Mutual Life Insurance Company, ca. 1870, courtesy Connecticut Historical Society.

Additional free zones were permitted in South China and North Africa during certain times of the year.

Arthur Hunter at New York Life, by contrast, developed maps that reflected a more variegated tropical pricing.¹²⁶ New York Life’s categorization entailed free zones as well as territories that required extra premiums ranging from \$2.50 to \$30.00 per US\$1,000 insured per annum. The tropical belts of New York Life’s map were bounded by complex contours marking out differentiations that separated the most expensive zones—West Africa and Amazonia—from more moderately priced locations in the north of Mexico, Russia, and Argentina (Figure 5).

Legal Contracts and the Failure of Tropical Rates

Tropical rates were a first attempt by insurers to manage the tensions they perceived as they expanded internationally. Over the long-term, however, they were impossible to sustain.

126. Hunter, “Mortality in India Among Insured Lives”; Price, *White Settlers in the Tropics*, 201–02.

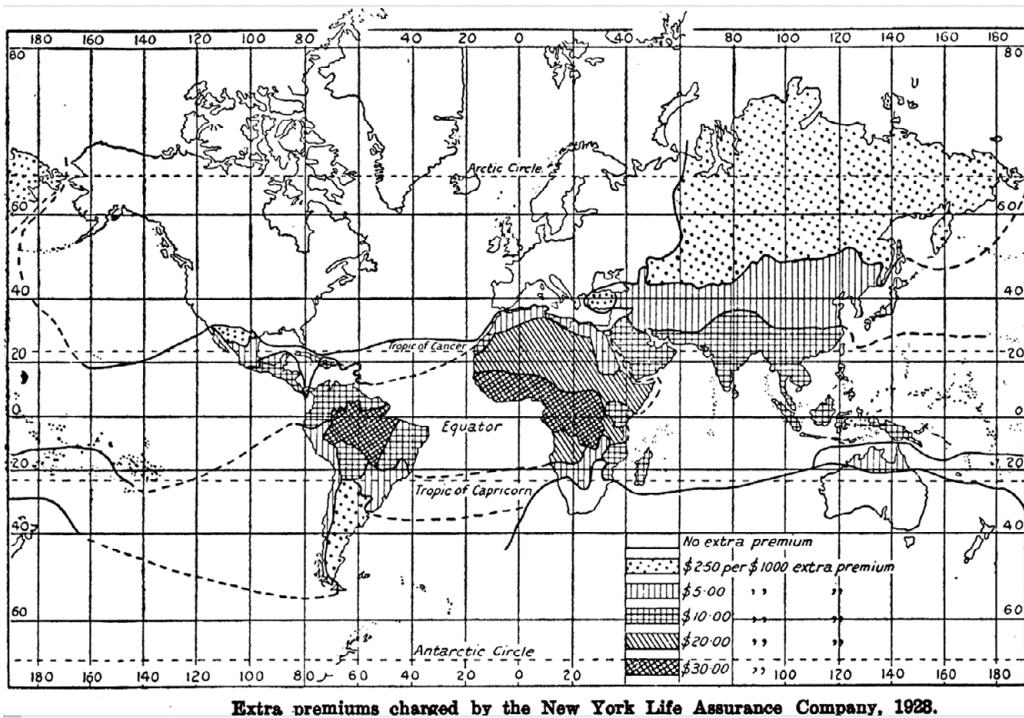


Figure 5. Extra premiums by the New York Life Assurance Company, 1928.

Source: Fairgrieve, "The Geographer and the Actuary," 283.

Insurance, like many other forms of science and enterprise, relies on the constitutive power of failure, which itself is a culturally constituted category.¹²⁷ Moreover, Balleisen argues that failure in the form of bankruptcy is inextricable from the promise of regeneration.¹²⁸ Additionally, policy researchers mark failure as central to how new practices emerge.¹²⁹ If life insurers "fumbled, improvised, debated and fought" their way to codified systems that could produce risks, tropical rates are a distinctive case. Moreover, as Lehtonen and Van Hoyweghen note, "even . . . the oldest and best-understood insurance risk—mortality—operates just beyond the limits of knowledge. Where calculations are supposed to dominate, they often do not," instead drawing attention to "the overflowing between the attempts to calculate and what shadows these attempts."¹³⁰ For many actuaries, tropical rates were shadowed by persistent overflows.

Actuaries registered numerous complaints about tropical rates. In general, they were concerned that tropical "rates are based upon no definite knowledge of either the quality or

127. Sandage, *Born Losers*. Moreover, Balleisen argues that failure in the form of bankruptcy is inextricable from the promise of regeneration. Balleisen, *Navigating Failure*. Policy researchers also center failure as central to how new practices emerge. See Best, "Quiet Failures."

128. Balleisen, *Navigating Failure*.

129. Best, "Quiet Failures."

130. Lehtonen and Van Hoyweghen, "Editorial," 535–536.

quantity of additional risk attaching.”¹³¹ To actuaries, the tropics were “necessarily a mere approximation.”¹³² As late as 1930, actuaries still routinely lamented the absence of any definitive data on mortality in tropical settings. M’Taggart and Stobie argued that “there are practically no statistics on which extra premiums . . . for residence in unhealthy climates may suitably be based.”¹³³ This absence rendered tropical rates a kind of speculative fantasy. For Bailey, “no sufficient data exist whereby the risks incurred may be measured, the extra charges are therefore . . . unscientific.”¹³⁴ For Cantlie, tropical rates resembled narratives of “distant tropical lands as ship captains’ gossip gathered from the common talk of those on land when the ship goes in harbour.”¹³⁵

Actuaries also worried that tropical premiums “would be always more or less arbitrary, heavily loaded on the side of safety by those who could not expect to get enough of them to constitute an average.”¹³⁶ This was compounded by the organization of tropical rates in ways that defied scientific resonance. John Stott, an actuary at the English and Scottish Law Life Assurance Association, argued: “In distinguishing between the healthy and unhealthy districts, the line—wherever drawn—must be arbitrary, and to some extent governed by considerations of expediency.”¹³⁷ Especially concerning was the pricing of “unhealthy” zones in ways that were simple but unproblematic reflections of imperial geographies. As Herbert Thiselton noted: “The south of Africa seems to have reduced our ideas of healthy climates almost to a condition of chaos, the tendency being to extend the free limits northwards till they appear likely, ultimately, not even to stop at the Zambesi, but to include all the country under the British Protectorate.”¹³⁸ Tropical premiums did not emerge from observed patterns of experience but from already existing categorizations taken as given, even though “parallels of latitude and territorial divisions are unsuitable boundaries of climate.”¹³⁹ Echoing other critics, Bailey was unconvinced that arbitrary tropical premiums could represent the complex uncertainties of the tropical world. “How,” he asked succinctly, “are boundaries defined by isothermal lines to be brought within the four corners of a legal contract?”¹⁴⁰

Efforts to translate tropical uncertainties into flattened form resulted in an astonishingly diverse inventory of prices, with actuaries complaining about “the extraordinary variations in the rates of extra premium charged by different offices.”¹⁴¹ As Stuart Macnaghten noted, “the diversity . . . both in the methods of dealing with the extra premiums and the rates charged has become so great that it is not surprising to hear it said that the fixing of extra premiums by life offices is largely a matter of guesswork.”¹⁴² Actuaries often bristled at this

131. Haslam, “Discussion on Life Assurance,” 1094–1095.

132. Hoffman, *Mortality of the Western Hemisphere*, 4.

133. M’Taggart and Stobie, “Occupational and Climatic Rates of Mortality,” 379.

134. Bailey, “On the Rates of Extra Premium,” 77.

135. Cantlie, “Life Insurance in the Tropics,” 110.

136. Quoted in Lutt, “On Extra Premiums,” 524.

137. Stott, “On the Death-Rate,” 169.

138. Thiselton, “Discussion on some points of Life Assurance Administration,” 30.

139. Bailey, “On the Rates of Extra Premium,” 84.

140. *Ibid.*

141. Chatham, “On the Rates of Mortality,” 339–340.

142. Macnaghten, “Inaugural Address,” 148.

diversity as tropical rates became, in practice, a dizzying array of prices arrived at inconsistently.¹⁴³

Tropical rates sat in tension with the heterogeneity of the conditions and lives actuaries sought to price.¹⁴⁴ Tropicality often worked by constituting overly generalized categories that reduced different geographies and cultures into a single form. For many actuaries, the heterogeneity of the tropical world resisted consolidation and actuarial smoothing. "It will be," wrote one actuary, "many years before the expected rates of mortality in tropical and semi-tropical countries can be computed with the same degree of accuracy as . . . in the United States and Canada."¹⁴⁵ These concerns implied a kind of tropical exceptionalism; that is, the settled mortality of Europe contrasted with the essentially unknowable tropical experience. James Meikle, in his address to the Actuarial Society of Edinburgh, argued that the "statistics of the living and dying in England are complete. The corresponding statistics of any other country on the globe cannot approach them in . . . trustworthiness of results."¹⁴⁶ He continued in orientalist terms, noting the difficulty of calculation in India of an unfathomable population. He was daunted by "its teeming population, from which the numerous facts have to be collected, sifted, and arranged, before the rate of mortality of the population can be obtained." This was a task, he noted, made difficult by "the perverseness of the population."¹⁴⁷ Actuaries working in tropical contexts regularly invoked an essentialist refrain: the impossibility of knowing an inherently exceptional space.

The exception stands in contrast to the actuarial language of the average, which is a focus not on that which exceeds the norm but that which falls within it. Unable to be constituted within a norm, tropical lives were a puzzling actuarial object. Because they are essentially dissimilar, tropical risks were not easily stabilized into a general pool of aggregated risk. Charles Jellicoe, an actuary, noted simply that tropical lives "comprised risks which were altogether heterogeneous," implying an actuarial anxiety about difference.¹⁴⁸ For many actuaries, mortality was and still is constituted in relatively bounded contexts, generalized from some universe limited by nationality or locality. The tropical world, by contrast, confronted actuaries with the daunting task of formulating patterns of mortality across what they conceived as unimaginable differences:

The heterogeneous character of the experience . . . challenges immediate attention. . . . It is not supposed that the seaports of Brazil show the same average rate of mortality . . . as cities of Ecuador and Peru. . . . The table-lands of Mexico, the West India Islands and the valley of the Amazon are not likely to be characterized by the same type of mortality. A table based upon such an assemblage of dissimilar risks, and closely harmonizing with the general average,

143. A key exception to this is the Scottish Life offices, which developed an early standardized approach based "on the most correct observations which exist as to the value of Life in foreign lands." Alborn, "Taxing Journeys," 49.

144. Sprague, "Certain Parts of Africa," 286–287.

145. Van Cise, "Mortality Experience," 677; see also Alborn, *Regulated Lives*.

146. Meikle, "On the Additional Premiums," 274.

147. *Ibid.*, 281.

148. Jellicoe, "On the Data Collected by the Council of the Institute," 131.

should not be expected to represent with any minute accuracy the mortality of any single country.¹⁴⁹

Critical histories sketch insurance as an emerging practice caught between contending forces it could never quite resolve—the tensions of sameness and difference, “classing” and “smoothing,” and the opposing currents of actuarial objectivity and subjective discretion. Experiments in tropical rates were a particular variant of these contending tensions. Tropical rates were underpinned by a simple actuarial ambition: a determination of the “proper rate of premium,”¹⁵⁰ as if there was a single perfect calculation of “tropical exposure” awaiting discovery. But even as they pursued this goal, actuaries found no consensus on “tropical extras.” Spencer Campbell, the manager and actuary of the Standard Life Assurance Company in Edinburgh, argued: “[The] rate of mortality in the British Isles, the northern portion of North America, and other countries falling within temperate limits, has now been ascertained with great accuracy. . . . But once the boundary lines into. . . tropical regions of the world are crossed, the whole becomes chaos.”¹⁵¹

Crossing boundaries of climate and race confronted actuaries with a kind of chaos that sat uneasily alongside their fantasy of calculative certainty and of deaths plotted with graphical precision. The impulse that undermines tropical rates did not, in this instance at least, orbit around any lingering commitment to subjective discretion but arose instead from the anxieties of actuaries regarding the differences and dangers they conceived in the tropical world. Actuaries inserted themselves into antinomies they were not sure how to manage: the tension not only between order and chaos, native and settler, but also between profitable uncertainty and irredeemable danger. These were tensions actuaries would eventually discuss in ways beyond tropical pricing, ultimately reaching for a social language that was an attempt to find social ways to manage the opportunities they hoped to seize.

The Social Management of Tropical Lives

Working in the shadow of a world at war, Ellsworth Huntington wrote an immensely influential account of race and climate in *Civilization and Climate*. Huntington echoed the longer “degeneration” perspective by arguing that “it seems probable that for a long time to come tropical countries will contain a dull, unprogressive population. Contact with such a population constantly exposes the white man to a most deteriorating influence.”¹⁵² His approach, nonetheless, also introduced an emphasis on social environment that would ultimately reshape acclimatization debates. This redrawn environment would allow for “tutelage” in the art of self-government:¹⁵³

149. C. N. Jones, “A Life Table Based Upon Experience of the New York Life Insurance Company Within the American Tropics,” 16 (presentation at the Actuarial Society of America Annual Meeting, April 1894, Prague).

150. Anonymous, “On the Extra Premiums,” 166.

151. Quoted in Thomson, “Notes on Mortality,” 111.

152. Huntington, *Civilization and Climate*, 37–38; see also Semple, *Influences of Geographic Environment*, 626–627.

153. Go, *American Empire and the Politics of Meaning*.

In the long run even tropical races may learn this lesson, but it will be a difficult and expensive task and will require a radical change in the people themselves. Such a change will doubtless come, but not for generations, and not until a long selective process has gone on whereby those who do not adopt modern medical methods will gradually be eliminated, while those who adopt them will persist.¹⁵⁴

Advocates of this view held out the possibility that native lives could be redeemed. In doing so, they invoked an orientalist notion of a social environment as both the initial source of "primitive savagery" as well as a space of intervention that could redraw some natives in more liberal kinds of ways. By the late nineteenth century, optimists began to reconceive acclimatization in similar terms. Felkin noted the evolutionary possibility by arguing: "[I]f the white man is ever to occupy presently the Tropical parts of the world, it will have to be done by stages, each stage marking a generation of men."¹⁵⁵ By the twentieth century, this caution eased further into a sense that the stages of acclimatization could be condensed into shorter timeframes.

Key to this emergent optimism was the rejection of the assumption that tropical degradation was inherent in some simple sense. "Physiological activities," Sir Patrick Manson argued in his well-known *Tropical Diseases*, "are attuned by heredity and habit to the conditions they were born into." For Manson, diseases were not inherent but had "specific origins" grounded in particular conditions. He wrote, "The European . . . on his first entering the tropics, and until his machinery has adjusted itself to the altered meteorological circumstances, is liable to slight physiological irregularities."¹⁵⁶ The human body was not the repository of an innate vulnerability but a "machine" that could be adjusted.

If human machines were adjustable, the new practices of sanitation were among those that would alter both native lives and the possibilities that White settler machines might acclimatize. As Frederick Hoffman put it in 1924, "the outstanding fact of the tropical mortality problem is the immense decline of the general death rate . . . as the result of sanitary efforts . . . [T]hroughout the tropical regions the death rate is no longer a bar to effective settlement and colonization."¹⁵⁷ Others would come to share Hoffman's view that sanitation was fundamentally altering the possibility of acclimatization, so that "much may be done in the tropics to render a climate more salubrious, and sanitary precautions will do a great deal to raise the health of the community."¹⁵⁸ Robert Felkin argued, simply, that "acclimatization was everywhere possible; it was only a 'question of hygiene.'"¹⁵⁹ These practices, which Hoffman loosely labeled "sanitary progress," created conditions in the tropics that actuaries believed would greatly ease the prospects for White settlement.

154. Huntington, *Civilization and Climate*, 40.

155. Quoted in Livingstone, "Human Acclimatization," 377; Felkin, "Tropical Highlands."

156. Sir Patrick Manson, *Tropical Diseases: A Manual of the Diseases of Warm Climates*. (London: Cassell and Company, 1918), xix, Confederation Life Fonds, Confederation Life Library, MG 111 126, vol. 151, Library and Archives Canada, Ottawa (hereafter, Manson, *Tropical Diseases*).

157. Hoffman, "Tropical Mortality and Acclimatization," 1363.

158. Felkin, "Tropical Highlands," 161.

159. Quoted in Livingstone, "Tropical Acclimatization," 380.

Sanitary progress entailed Western social institutional arrangements: new sewage and waste treatment facilities, new public health practices and sanatoria, and new modes of governing urban space. Sanitary progress was also a kind of governmentality, a way of specifying and managing the “conduct of conduct.” Hunter, for example, concluded that “improvement in mortality” was related to the “advance in sanitary measures, the better knowledge of how to live in the Tropics.”¹⁶⁰ In this argument, Hunter emphasized large-scale sanitary practices, referring to the fact “sanitary systems have been put into effect in large cities in the Tropics.”¹⁶¹ For Spencer Thomson, this included “better knowledge” in the art of living in the tropics.¹⁶²

Because they were conceived as a source of degeneration for White settlers, successful tutelage of natives in “sanitary progress” was particularly urgent. This included assumptions about the native population needing rescuing from conditions of “primitive savagery.” As Hunter put it, “climate, the hygienic condition of the community, the method of living, and the stamina of the natives are all factors in determining the relative mortality.”¹⁶³ Sanitary progress, in this form, signaled a cleansing of the social body and the degenerative dangers natives represented. In these terms, “degeneration was closely associated with the notion of a white, civilized person “going native”—of losing the material, mental, and physical inherited trappings of civilized Man as they moved off the established map.”¹⁶⁴

Sanitary progress was deeply implicated in settler colonialism. If, as Wolfe attests, elimination was central to the violent histories of settler colonialism, it was a logic broad enough to capture the diversity of ways in which removal was accomplished. These included a variety of imperial strategies beyond and in combination with brute physical elimination designed to secure access to Indigenous land, including strategies designed to “eliminate” native culture by integrating natives (often unevenly) into projects of national, cultural, or economic development. For Kauanui, Wolfe’s argument “enables an understanding of the relationships between spatial removal, mass killing and biocultural assimilation. . . . [T]he logic of elimination is about the elimination of the native as native.”¹⁶⁵ Programs of “biocultural assimilation,” such as those bound up in ideas of sanitary progress, were forms of elimination because they removed the native cultural presence, eroded perceived threats of degeneration, and, following Wolfe, facilitated White possession and settlement of Indigenous lands:

Settler colonialism performs genocide alongside a variety of practices that converge on a purposed elimination of Indigenous peoples. While the erasure and replacement of Indigenous peoples may transpire through deadly violence, Wolfe emphasizes that elimination may follow efforts . . . to amalgamate Indigenous peoples . . . into the body of the settler nation.¹⁶⁶

160. Hunter, “Mortality in Semi-Tropical and Tropical Countries,” 429.

161. Ibid.

162. Thomson, “Notes on Mortality,” 111.

163. Hunter, “Mortality Among Non-Caucasian Races,” 143.

164. “[D]egeneration was closely associated with the notion of a white, civilized person “going native”—of losing the material, mental, and physical inherited trappings of civilized Man as they moved off the established map.” Arvin, *Possessing Polynesians*, 48.

165. Kauanui, “Settler Colonialism and Enduring Indigeneity,”

166. Morgensen, “Biopolitics of Settler Colonialism,” 56. The social integration of native bodies took many forms. For a recent piece of key research on the role of social work, see Fortier and Wong, “Settler Colonialism of Social Work.”

In invoking an assimilationist logic, advocates of sanitary progress offered an imperial conception of how a new social environment might be built and a set of practices that would emanate from the metropole. Manson, for example, pointed to the eradication in the temperate world of what he called "cosmopolitan diseases," such as leprosy and beriberi, as an achievement of "civilization and the improved hygiene that has followed in its train."¹⁶⁷ These diseases "are now virtually confined to tropical and sub-tropical countries, where they still survive under . . . backward social and sanitary conditions."¹⁶⁸ The control of tropical diseases were simultaneously social and civilizational, a possibility that requires the kinds of social interventions associated with the "spread of civilization."

A pivotal moment in this sanitary progress was the work accomplished by William Gorgas, chief sanitary officer in Havana, in 1898 during the American occupation of Cuba. The language Gorgas used emphasized a cleansing and decontamination of the impure tropics.¹⁶⁹ Gorgas later extended this work when he became head of the Panama Canal Zone Sanitation Commission and established drainage, fumigation, mosquito netting, and public water systems.¹⁷⁰ Gorgas emphasized Panama as "a demonstration that the white man can live and thrive in the tropics," which would allow colonial enthusiasts, and eventually actuaries and insurers, to imagine a world in which "the great valleys of the Amazon and of the Congo are occupied by a white population."¹⁷¹ Gorgas used his work in Panama to reconstruct White settlers as bodies capable of healthy lives in the tropical world:

[T]he sanitary phase of the work will be considered more important [than the canal itself] . . . in the history of the white man. . . . The demonstration made at Panama that he can live a healthy life in the tropics will be an equally important milestone in the history of the race, and will throw just as large an area of the earth's surface open to man's settlement.¹⁷²

The story of Gorgas and Panama would come to circulate widely as a kind of foundational and optimistic view of acclimatization rooted in new conceptions of the social. This particular conception of the social, however, did not invoke a relocation of risk onto the social body. Rather, the social entailed a repertoire of interventions designed to alter the social environment and, in doing so, alter the colonial subjects who populated that environment. Advocates of sanitary progress imagined a new social order and envisioned "new subjects that must be relocated to be productive and exploitable . . . stripped of old cultural bearings to be citizens, coerced to be free."¹⁷³ Actuaries and insurers working in and on the tropical world began to reposition themselves as advocates of this agenda and as key figures who, by the early twentieth century, amplified ideas of social and sanitary progress, as well as the assumptions those ideas often entailed.

167. Manson, *Tropical Diseases*, xix.

168. *Ibid.*

169. Gorgas, *Sanitation in Panama*, 6.

170. Quoted in Gregory, *Menace of Colour*, 200–201.

171. *Ibid.*

172. Gorgas, *Sanitation in Panama*, 291–92.

173. Stoler and McGranahan, "Introduction," 8.

The Actuarial Discovery of the Social

Actuaries participated in debates relating to acclimatization, in part by attempting “an abridged mortality table” that could “represent the curve of the special mortality” in tropical settings and by a discovery of “the ratios of the actual deaths [in the tropics] to those expected according to a standard table.”¹⁷⁴ Many of the early actuarial accounts of this “special mortality” were pessimistic about acclimatization. Marshall’s actuarial work on Jamaica noted a revealing disparity in insured European lives in the tropics in relation to the Northampton table.¹⁷⁵ Similarly, T. B. Sprague, a British actuary in the second half of the nineteenth century, authored a similar key study of Europeans on the Congo River that became his signature analysis of the difficulties of European tropical acclimatization.¹⁷⁶ Writing in parallel to Sprague, John Stott calculated an “extra mortality” rate of 13 percent in Jamaica, 33 percent in Trinidad, and 36 percent in Guiana.¹⁷⁷

Despite this pessimism, actuaries eventually advocated for sanitary progress, especially when they realized an “extraordinary improvement in the death rate experienced by Europeans in West Africa since the first estimate was made by Dr. T. B. Sprague.”¹⁷⁸ Similarly, Confederation Life’s actuary in Mexico, also discovered that sanitary progress was “a favourable field for life insurance.” Reporting on the progress that “simply astonished” him, he noted “improved sanitary conditions and modes of living” that included “complete sewerage systems [and] water works.”¹⁷⁹ Frederick Hoffman argued that “acclimatization is not a matter of theory but of fact. . . . [P]rogress is only a question of intelligent adaptation and a rational economic development of tropical regions.”¹⁸⁰ In making this argument, Hoffman became key to an emerging an actuarial conversation open to the promises of acclimatization.

Although there were important exceptions—for example, Mabon’s study of Sun Life’s experience in Hawaii argued that “figures cannot be interpreted as indicating any change in vitality”¹⁸¹—actuaries remained optimistic and reoriented the debate around tropical insurance. This is not to suggest any singular or complete displacement of tropical rates with strategies focused on social interventions—indeed, tropical rates would continue well into the 1940s. Rather, this is to note a gradual and complex reorientation in certain contexts and at different paces when insurers emphasized sanitary measures as possible long-term substitutes for tropical rates. Hoffman’s pivotal work on Hawaii noted the improvement in “sanitary conditions” as “the most conspicuous modern illustration of successful tropical adaptation and race progress.”¹⁸² Raynes, writing in the late 1920s, was also clear in his sense of the possibilities for acclimatization:

174. M’Taggart and Stobie, “Occupational and Climatic Rates of Mortality,” 379.

175. Marshall, “On the Rate of Mortality Amongst Europeans,” 43.

176. Sprague, “On the Congo River,” 437.

177. Stott, “On the Death-Rate,” 169.

178. Raynes, “Discussion on Life Assurance,” 21.

179. Confederation Life, *Actuary Reports/Trips to Mexico 1902 and 1904*, January 8, 1902, Confederation Life Fonds, MG 28, III 126, Vol. 6, Folder 14 Mexico, Actuary’s Reports. Ottawa Library and Archives, Canada (hereafter, Confederation Life, Actuary Reports).

180. Hoffman, *Life Insurance Progress*, 29–30.

181. Mabon, “Mortality Experience of the Sun Life Assurance Company,” 303.

182. Hoffman, *Sanitary Progress*, 7.

The extraordinary improvement in mortality of Europeans in tropical Africa . . . is a tribute to the . . . study of tropical diseases, their prevention and method of treatment, [which] has become an organized body of knowledge potent to save life to a degree which would have been incomprehensible to those malaria-ridden denizens of jungle and swamp who contributed their unfortunate lives to Dr. T. B. Sprague's investigations in the middle eighties.¹⁸³

The focus on sanitary conditions emphasized factors beyond climate that could impact tropical mortality. Sprague's son Alfred foregrounded concerns for "irregular living" engendered by tropical locations. Mortality in West Africa, he noted, was not "entirely the fault of the climate; but [also] . . . ignorance . . . and irregular living."¹⁸⁴ Similarly, M'taggart and Stobie encouraged actuaries "to analyze the influences affecting mortality" by linking "the natural effects of climate" with "the conditions artificially produced by man . . . [and his] social environment and habits."¹⁸⁵

In this emergent focus on the "social," insurers and actuaries more seriously held in tension two differing conceptions of time and mortality. Actuaries remained concerned with mortality as an element fixed in relation to a measurable past. However, and in ways that echoed American life insurers' domestic experiments in altering mortality, actuaries also speculated that a projected future might deviate from its calculated past, albeit in ways that echoed life insurers' domestic experiments in altering American mortality. Hoffman noted that: "Life insurance companies are concerned with both the existing state of facts and the more or less prevalent tendencies towards changes in the mortality rate in the future. Such changes are today recognized as primarily conditioned by methods and means of public and corporate sanitary control."¹⁸⁶

Meikle, writing in 1876, ruminated about enigmatic risks that still confronted White settlers in tropical settings. "Apart altogether from climatic influences," he pointed to less calculable risks: "the mere change from all the comforts of home to a life among strangers . . . [and] the new anxieties to be feared. . . the numberless little risks to run."¹⁸⁷ Tropical residence was plagued by "numberless risks," a particular anxiety for actuaries who were preoccupied precisely with the conversion of risks into calculative (that is, numbered) form.

As actuaries considered the importance of "sanitary progress," they emphasized European knowledge as a source of vitality. For Reid, "mortality to a large extent depends on sanitation, and sanitation depends on progress; progress again depends. . . on how long the country has been colonized by Europeans."¹⁸⁸ This emphasis on social sources of tropical risks made persistent references to imperial power and culture. Hoffman's discourse on sanitary progress included both a sense of inherent tropical danger—"the tropics will always involve potential dangers to health and life"—and a sense that these dangers could be managed.¹⁸⁹ Sanitary

183. Raynes, "Discussion on Life Assurance," 36.

184. Sprague, "Certain Parts of Africa," 287.

185. M'taggart and Stobie, "Occupational and Climatic Rates of Mortality," 387–88.

186. Hoffman, *Mortality of the Western Hemisphere*, 7.

187. Meikle, "On the Additional Premiums," 294; see also Francis, "Life-Assurance and Residence in Hot Climates."

188. Quoted in M'taggart and Stobie, "Occupational and Climatic Rates of Mortality," 400.

189. Hoffman, "Tropical Mortality and Acclimatization," 1264; see also Hoffman, *Life Insurance Progress*, 20.

progress required a kind of imperial supervision designed to reformat tropical bodies and cultures into sanitized objects. As Hoffman argued, “these diseases are yielding to better education, higher standards of morality, and more efficient. . . sanitary supervision. . . [and thus] the gradual progress of true civilization.”¹⁹⁰ Sanitary progress was constituted as a civilizing mission made possible through careful supervision of native bodies.

Similarly, the actuaries sent by Confederation Life into tropical markets discovered similar sanitary progress derived from Western/imperial pressure. The Confederation’s actuary who was sent to Mexico to prospect for insurable risks discovered forms of sanitary progress that would allow him ultimately to recommend establishing a life insurance branch there the following year. Key to this analysis was a form of tutelage and a mode of coercion emanating from the imperial metropole:

Law and order are maintained with a strong hand. The people are learning to be ruled. . . . I think the chances of any serious disturbances are remote. Troops can now be transported with despatch to any location where trouble may threaten. The introduction of foreign and particularly American capital is another great safeguard in favour of law and order.¹⁹¹

As noted above, Hoffman made a pivotal case for sanitary progress through his research on Hawaii. As he put it, “suggestive is the sanitary progress of Hawaii.”¹⁹² At the same time, though, he worried about the dangers associated with Hawaii’s unique racial composition: “It may be questioned whether anywhere in the world a more complete mingling of races has taken place than in Hawaii.”¹⁹³ Hoffman identified Indigenous Hawaiians as a particular concern. “The problem of prevention,” he noted, “is infinitely more difficult when applied to native races or to Orientals, more or less indifferent to even the most simple and well-directed efforts at health education.”¹⁹⁴ For Hoffman, Indigenous Hawaiians remained committed to outdated cultural practices inconsistent with modern science. His report returned often to key decisions to “control the kahunas,” noting that the “kahunas of the Hawaiians correspond to the medicine-men among the American Indians. . . . Most of their practice was based upon gross superstition and adroit dissimulation.”¹⁹⁵

Despite his anxiety, Hoffman nonetheless came to understand Hawaii as a foundational model of social progress. He found in Hawaii, for the most part, a population that could (eventually) be transformed into liberal subjects. This capacity, however, was not inherent in the Indigenous themselves but was the function of American colonial knowledge:

The public health progress and the eradication and control of the more serious tropical and semi-tropical diseases reflect the highest achievements of American medicine, surgery and sanitary science in active and effective cooperation with an intelligent, broad minded and

190. Hoffman, “Tropical Mortality and Acclimatization,” 1264.

191. This quote and the source for the preceding paragraph is Confederation Life, Actuary Reports, *Trips to Mexico 1902 and 1904*.

192. Hoffman, *Mortality of the Western Hemisphere*, 7.

193. Hoffmann, *Sanitary Progress*, 44.

194. *Ibid.*, 38.

195. *Ibid.*, 15.

generous people, strongly under the constructive influence of American ideals of good government and public welfare.¹⁹⁶

I note here the argument of Arvin in *Possessing Polynesians*, who suggests that Europeans conceived of Hawaiians as "near" European, as "almost white" in a discourse that facilitated a kind of settler colonialism. Hoffman deviated but from but also deployed this script by casting Indigenous Hawaiians as abjectly primitive while also framing them as "intelligent" and "broad minded" in ways that make them receptive to White possession.

Despite some lingering pessimism—"However much improvement may have taken place in sanitation and in the methods of living, it is not expected that the mortality in India of Europeans can be as low as that in Great Britain"¹⁹⁷—actuaries cohered around a sense that "surplus" tropical mortality could be managed via the careful adaptation of sanitary measures informed by Western knowledge. They imagined a resolution of the problems they faced in the tropics through a social discourse of sanitary progress to render the uncertainty of tropical markets manageable; a way of making tropical worlds cleansed and safe. Increasingly convinced about the efficacy of sanitary progress, insurers gradually liberalized rates for settlers, collapsing the difference between rates for Whites in tropical and in home settings.

Although insurers began to speak the language of the social, at a practical level they did not invest material resources in meaningful programs of public health, education, or sanitation. In contrast to the work of American insurers in mounting domestic campaigns of social intervention—public health campaigns, widespread medical examinations, Metropolitan's nursing programs—life insurers' talk of social intervention in the tropical context was not matched by programs committed to sanitation or popular education. Wider investment in basic infrastructure and public health campaigns in the colonial and postcolonial worlds would eventually come, but through the public investment flows of the new Bretton Woods organizations, and especially by the World Bank.¹⁹⁸ If anything close to sanitary progress as an organized method for governing life were to emerge, the form it would take would be public and multilateral, enmeshed not in the practices of life insurance but in the new discourses on development.

Moreover, domestic life insurers intervened at several levels. They fashioned new forms of "social work," but as investors they channeled enormous pools of capital into the construction of the postwar American economy.¹⁹⁹ By contrast, their ambitions for the colonial and postcolonial worlds were left detached, which was a striking gap marked by a discourse of sanitary practice left unrealized in practical terms. Life insurers were spectators of, but not participants in, the reconstruction of the postcolonial social lives they were anxious to govern and calculate, a contrast to the more activist stance they assumed domestically.

Despite the practical ambiguity of the ways in which the social was (and was not) taken up by insurers, sanitary progress nonetheless afforded insurers discursive space in which they

196. *Ibid.*, 52.

197. Meikle, "On the Additional Premiums," 246; see also Koeppern, "Influence of a Tropical Climate on Europeans," 28; Houseman, "Medical Aspects of Life Insurance," 270.

198. Best, *Limits of Transparency*; Alacevich, *Political Economy of the World Bank*.

199. Horan, *Insurance Era*.

could speculate about the problems they associated with native presence. In this discursive space, insurers imagined that the cleansing of native bodies would allow for a unique form of presence and absence, remainder and removal. Forms of sanitary progress were imagined as tools that could remove traditional Indigenous practices, cultures, and “disturbances.” In doing so, they could stabilize tropical spaces for White settlers.²⁰⁰ This social removal, however, was complicated. Native bodies were left present and intact, albeit in newly sanitized form. This lingering (sanitized) presence confronted insurers again with questions once and always at the center of tropical life insurance: What and who is a “life” in the tropical context? What exactly is a newly social native life? And how should it be priced in a world sanitized for White settlement? Although insurers sought actuarial clarity and sanitized numbers calculated cleanly, these questions remained murky.

Conclusion: The Racialized Making of Life Insurance

Life insurance has always been a place-bound practice tied to particular locations and constitutive of confined even intimate circulations within families and communities. Even though the capital generated by life insurers has long been reinjected into global financial markets, insurers often exercised a prudential caution in addressing risk that moved too widely. Bailey, for example, notes a life insurance policy from 1721, which he claimed to be the oldest British “life policy extant.” Built into the contract was a spatial boundedness, or a prohibition on insuring risks abroad. The contract included a provision: “Provided always, that this policy shall be void and of no effect in case the said [Redacted] shall voluntarily go to sea.”²⁰¹ Life insurance offers a particular geography of risk premised on the local and the familiar, the understandable parameters of a knowable world. However, as I have argued in this article, life insurance has been frequently entangled in the risks and the unknowns of tropical “other” worlds. This antinomy of place and distance and this tension between the calculable certainty of familiar regularities and the profitable possibilities of unknown dangers are foundational crucibles for life insurance. It is within this tension that tropical life insurance, like the longer history of life insurance more generally, offers a story of actuarial objectivity interrupted—in this case not through the resistance of actuaries to objectivity in favor of subjective discretion, but in relation to the orientalist anxiety actuaries often projected regarding a tropical world they constituted as exceptionally different and dangerous.

Most broadly, the tropical world confronted life insurers with vexing problems related to settled White control over tropical spaces. In doing so, the issue of tropical exposure constitutes a chapter in the long process by which life insurance became sedimented as a “normal science.”²⁰² If the mythical history of life insurance is one of overcoming its haunted connections with chance, conjecture, parochialism, gaming, and lotteries—and the replacement of those with the rational, universal, and technical—conversations around tropical lives are key

200. Wolfe, *Transformation of Anthropology*, 37–38; Veracini, *Settler Colonialism*, 37–38.

201. Bailey, “On the Rates of Extra Premium,” 78.

202. Kuhn, *Structure of Scientific Revolutions*.

to that genealogy and a key site where actuaries struggled to discover what scientific life insurance might mean in the context of their own imperial inclinations.

As they expanded, insurers constituted the tropical world as a site of exceptionalized differences and dangers. Anxious that the tropics might escape calculative reach, actuaries debated two particular strategies—tropical rates and social practices of sanitary progress—to render tropical spaces manageable. These practices were not an immaculate reflection of scientific intent but the function of many broader vectors: cultural, scientific, and political.²⁰³ At the center of these vectors are questions of racialization and racial difference. As Alborn notes, life insurers “brought to this task a host of racist assumptions about insurability.”²⁰⁴ I want to punctuate Alborn’s argument by suggesting that race is one of the formative subjects that actuaries explored and fretted over: What kind of science were they with respect to questions of race? How could race be priced? What is a life in “other” (racialized) contexts?

This foundational importance of race is evident not only in their preoccupation with the figure of the settler but also in the ways in which actuaries grappled with the “native.” Early discussions of tropical rates, for example, invoked natives in terms of their noxious proximity to Whites. This implies an intractable distinction between native and settler. McCauley, for example, offered a pessimistic version of this distinction regarding the construction of tropical mortality tables:

My own view is that European and native lives are so utterly different in character that we should have separate tables of mortality for these lives. . . . The only satisfactory way of dealing with an Asiatic Tropical experience is, I think, to divide it rigidly into two parts, separating the European lives from the native.²⁰⁵

The logic of sanitary progress also addressed natives by suggesting a removal that sanitized natives and separated them from their traditional lives; these were “fantasies of ultimately ‘cleansing’ the settler body . . . of its (indigenous and exogenous) alterities.”²⁰⁶ Natives were not always removed physically, but were sometimes sublimated within the social fabric via techniques that cleansed their wake in a genocidal violence in different form. Those who advocated new sanitary measures were reworking the lines between native and settler by implying that native lives could, under the influence of Western tutelage, be salvaged. This formulation imagined a line between the two—a native body in need of tutelage and a Western body able to dispense privileged knowledge. But it reframed that line as one that allowed one-way transmission across its porous stretch: Were natives lives, newly sanitized, now knowable and redeemable? Could their lives be priced? What kind of life, in short, is a native?

These questions become important as insurers gradually, if unevenly, liberalized tropical rates for White settlers. When they did so, actuaries then trained their attention onto native lives. Manulife, for example, eased some restrictions on non-Whites as early as 1929, albeit with important lingering qualifications. In that year, George L. Holmes, one of Manulife’s

203. Porter, *Trust in Numbers*; Daston, *Classical Probability in the Enlightenment*; Bouk, *How Our Lives Became Numbered*.

204. Alborn, “Taxing Journeys,” 52.

205. Quoted in Hunter, “Mortality in Semi-Tropical and Tropical Countries,” 694.

206. Veracini, *Settler Colonialism*, 33.

assistant actuaries, quietly sent agents a note emphasizing that “we will be prepared to consider an occasional Chinese Risk” in Cuba at the “ordinary rate.” Holmes quickly qualified this by noting that this only applied to Chinese lives “of the highest standing. . . morally and physically” and that the new policy “will not apply to the general run of Chinese risks.”²⁰⁷ By 1947, another assistant actuary announced Manulife would extend to “Japanese and Chinese lives” in tropical markets “the same basic premium rates as white lives.”²⁰⁸ This document frames “others” in orientalist terms, noting that “white rates” could only extend to “such lives . . . living under clearly average good American standards.” Additional rates could still be charged for oriental lives living in conditions below American standards or in cases where “education and social background are Oriental rather than American.”²⁰⁹ Manulife’s “liberalization of underwriting of Oriental risks” was accompanied by a lingering imperialism it could not easily relinquish.

The haphazard incorporation of native lives into tropical life insurance markets was a form not of actuarial objectivity but of continued racialized underwriting. By 1933, V. R. Smith, the general manager of Confederation Life who oversaw its Caribbean expansion, suggested a way to resolve the problems he associated with the pricing of native lives. As a senior actuary noted, “[W]e should really prefer to issue definite rulings regarding the applicability of the above benefits to negroes, but Mr. Smith thought it would be diplomatic to cover them rather in a general way and give effect to our wishes by stiffening up the underwriting standards.”²¹⁰ “Stiffening” underwriting standards was the informal weeding out of Black bodies by applying harsh selection standards rather than by formal prohibitions. In 1929, Sun Life Assurance also notified its agents about its liberalization of White lives in Hawaii. The announcement noted that “we write white lives at Northern rates” in Hawaii, but admitted that “we did not formulate any rules for Hawaiians” because of a practice “of restricting these lives, subject to careful restriction.”²¹¹ “Careful restriction” was a euphemism that appears in Manulife’s archival record that conjures the same “stiffening” that Confederation used in its Caribbean markets.

Lehtonen and Van Hoyweghen argue that “insurability is not given, it is made.”²¹² The conversation around “tropical exposure” and the practices designed to manage that exposure were sites key to the making of insurability. These were crucial to the delineation of what kind of lives natives and settlers might be, and to what extent and within what limitations those lives could be considered insurable risks. Natives were often excluded both formally and informally, and those native lives “included” in nascent tropical life insurance markets were often subject to forms of “adverse incorporation.”²¹³

207. George L. Holmes, corporate memorandum to the branch manager in Cuba, 1929, Manulife Archives, Toronto.

208. A P. Morton, *Japanese and Chinese Lives*, April 1, 1947, Company Practices and Memos, Box 1, Folder 15: “Company Practices, 1938–1951,” Manulife Archives, Toronto.

209. Ibid.

210. Correspondence from V. R. Smith to C. D. Devlin, general superintendent, March 13, 1936, Confederation Life Insurance Fonds, Malay States—Organizing for Business and Business Matters 1910–1953, MG 28 III 126, Vol. 6, Library and Archives, Canada.

211. Actuary Sun Life Assurance Company to J. H. Lightgow, Actuary, Manufacturer’s Life, December 12, 1929, Hawaii 1917–1929, Folder 18, Box 2, Manulife Archives.

212. Lehtonen and Van Hoyweghen, “Editorial,” 538.

213. Hickey and du Toit, *Adverse Incorporation*; Aitken, *Fringe Finance*.

Attempts to manage tropical exposure invoked an actuarial fantasy of finding the right price for colonial risks and of overcoming the anxiety actuaries felt in taking on risks they perceived as exceptional and "numberless." These practices formed a chapter in the racialized genealogy of contemporary finance—a moment of formation of one intersecting line that connected finance, risk, and race. The afterlives of this moment are found, sometimes in diffused form, in the rearticulations of race and risk that would continue to haunt global financial markets in the twentieth and twenty-first centuries: in redlined districts that equate danger and race in calculative terms; in forms of global exclusion that leave large swaths of racialized bodies without meaningful access to formal financial services; and in a financial crisis marked by subprime instruments that both convert risk found in poor racialized communities into profitable assets and leave those same communities without recourse when that risk becomes unmanageable. Randy Martin reminds us that risk has a double and deeply unequal set of inflections. It is a reference both to "taking" (i.e., the risks that those with financial capacity and access can afford to manage) and "being taken" (i.e., the risks that shape, burden, and confine those without capacity or access).²¹⁴ To think finance in critical terms, as Martin's legacy surely requires us to do, is to connect these terms together to show—as the story of tropical exposure underscores—that any risk taken is often implicated in lives that are "being taken"; lives that are variously priced, or excluded, instrumentalized, forgotten, tamed, or removed.

ROB AITKEN is a professor in the Department of Political Science at the University of Alberta in Edmonton, Canada. His work lies at the intersection of cultural economy, the social studies of finance, and governmentality. His work has appeared in *Global Society*, *Review of International Studies*, *Millennium*, *Competition and Change*, *New Political Economy*, and *Development and Change*. Contact information: University of Alberta, Political Science, Edmonton Alberta T6G 2R3, Canada. E-mail: raitken@ualberta.ca

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