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GEOGRAPHY, EMPIRE, AND ENVIRONMENTAL DETERMINISM*

STEPHEN FRENKEL

ABSTRACT. This article explores the relationship among geography, environmental determinism, and early-twentieth-century development of the Panama Canal Zone. The apparent scientific basis of environmental determinism provided both American policymakers and American Canal Zone residents with an acceptable explanation and rationalization for imperialism in Panama. On the basis of the thesis's academic trappings, everything from pay, privileges, racial hierarchy, and spatial patterns of housing to social control could be understood in ostensibly objective terms. Interpreting Panama through the theoretical lens of environmental determinism offers insights into the character of American prejudices and interests abroad.

GEOGRAPHY, empire, and environmental determinism went hand in hand during the late nineteenth and early twentieth centuries. To illustrate the intertwining, this article analyzes the relationships between the accepted premises of early-twentieth-century American geography and the development of the Panama Canal Zone, specifically its residential areas that were home to most of the zone's 30,000 inhabitants. The characteristics of these archetypal American imperial landscapes are related to academic, social, and political contexts and to the geographical ideas associated with environmental determinism. Evidence from the Panama Canal Commission archives reveals how environmental determinism affected life in the Canal Zone and its landscapes; furthermore, the use of environmental determinism was modified over time to meet the changing circumstances on the isthmus. The characteristic language of environmental determinism appears time and again throughout the historical record of the Canal Zone. Additionally, environmental determinism itself encompasses a variety of discourses; ideas that now might be labeled as racism, imperialism, and geopolitics were subsumed in its theoretical confines.

ENVIRONMENTAL DETERMINISM

Environmental determinism originated as a set of ideas introduced into the mainstream of American geographical thought and practice by Ellen C. Semple (1911), on the basis of her selective interpretation of Friedrich Ratzel's nature-culture relationship (James and Martin 1981, 170, 304–307). In that relationship, the environment affects all aspects of social and economic de-

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velopment. Though often treated as part of geography's distant and shameful past, for half a century environmental determinism provided many students of society, not only geographers, with a theoretical guide for generalizing about the world.

Environmental determinism was popularized at a time of real change in academic geography, when the discipline was shifting from a focus on exploration to "intensive survey and philosophic synthesis," to quote Sir Halford Mackinder (1904, 421). Environmental determinism seemed to offer early-twentieth-century geographers a scientific foundation for theories by which it was possible to understand how people lived and acted in a changing world. The framework of environmental determinism allowed linkage of climatic conditions and other aspects of the physical environment to virtually everything, from culture, regional character, and political organization to the rise of civilization (Huntington papers). The thesis that northern Europeans were "energetic, provident, serious, thoughtful rather than emotional, cautious rather than impulsive" (Semple 1911, 620) assumed scientific authority. Likewise, the destiny of any society or economy could be predicted by mapping isotherms and humidity. By the mid-1920s, these ideas had lost much of their academic currency; outside universities and colleges, however, they retained considerable influence, perhaps a result of their apparent commonsensical nature.

Environmental determinism seemed to fit Panama, in part because the tropical climate, flora, and fauna were considered unhealthy for residents of European origin. Those perceptions matched the opinions of visitors. Real dangers and discomforts were encountered and provided the empirical validation for theoretical environmental constructs. For example, only in the first decade of the twentieth century were the etiologies of malaria and yellow fever accurately known. The tropical heat made physical labor difficult, and life in the tropics before air-conditioning was enervating. The apparent logic of environmental determinism is less understandable for cultural and racial matters. The thesis gave authoritative credibility to the scientific racism of the time (Fredrickson 1981, 188). Environmental determinism provided an acceptable expression of otherwise contentious ideas. When monthly meetings of the Ku Klux Klan were banned from Canal Zone buildings in 1924, the reason was that the Klan's "spirit is generally believed to be inimical to certain classes of our citizens on account of[f] their race or creed" (PCC 13 L 14/1924). Yet the same ideas, expressed under the guise of environmental determinism, were tolerated and even bolstered American conclusions about race in Panama.

American residents of the Canal Zone considered it common sense that whites were unable to live in the tropics for long periods, that blacks from the Caribbean had dark skin because of the climate, and that the tropics caused a host of climatically specific diseases. These beliefs were assumed to be scientifically valid and morally neutral, because climatic influence on humans was an empirically proved fact. On the basis of tropical location,

environmental determinism explained, for the administrators of the Canal Zone, why Panamanians spoke different languages, ate different foods, and were racially different from North Americans. Likewise, environmental determinism partly explained to North Americans why Panamanians, a "tropical type of people," failed to build the canal, why North Americans succeeded, and why they took such care to create a suburban landscape in the Canal Zone. In sum, the acceptance of environmental determinism by Canal Zone officials can be attributed to its embodiment of American attitudes about early-twentieth-century Panama.

European and American interest in a canal across the Central American isthmus was kindled in the early nineteenth century, after the area, then part of Colombia, gained independence from Spain. In 1846, an American diplomat, invoking the Monroe Doctrine, signed a treaty with Colombia guaranteeing the United States exclusive rights of transit across the isthmus. That agreement coincided with an increase in isthmian travel, primarily by eager gold-seekers en route from the eastern United States to California. As an alternative to the rigors of overland transcontinental treks or the arduous voyages around Cape Horn, the risks of malaria, yellow fever, and heat through fifty miles of Panamanian jungle was comparatively inviting. The permanence of the route was ensured in 1850 when a New York firm began construction of the transisthmian railroad. In 1880, the French rekindled the idea of a canal; however, the project was abandoned with less than one-quarter of the work completed, a victim of disease, poor planning, and inadequate capital. By 1889, the *Compagnie Universelle du Canal Interoceanique* had buried some 22,000 employees, mostly West Indians, in Panama. Three years later, the French government was investigating the company on charges of financial fraud and mismanagement.

Yet the idea of an isthmian canal was firmly accepted and hereafter was increasingly thought of as an American technological project. "The supreme interest of the United States in an Isthmian Canal, the strength of its geographic location in relation to the same, its natural office as guarantor of the neutrality of the channel and the political stability of the country through which it passes, finally the abundant wealth, the resources of the Anglo-Saxon republic, and the steadily developed aptitude of its citizens for vast enterprise, all combined to lay the task of its construction upon the United States" (Semple 1933). However, Americans shied from the idea of an expansive, European-style, territorial imperialism. Popular opposition to an American role as a colonial power was expressed by an array of public figures, including Grover Cleveland, Andrew Carnegie, and William Jennings Bryan. According to some, it was hypocritical for the United States, a country born of an anticolonial revolution, to expand outside predefined spheres. Others opposed imperialism on the grounds that it inhibited free trade. Despite interests in overseas transportation facilities and production of cash crops, the United States was content to allow Colombia to rule Panama. Military interventions, though common, were seemingly temporary phenomena,

countenanced only when economic interests appeared directly threatened. Negotiating treaties was preferable to overt control of territory.

That ambivalence allowed for action, and by the beginning of the twentieth century, it could be argued that manifest destiny impelled the United States to build a canal (Padelford 1942). President Theodore Roosevelt, championing the cause of a canal before Congress in early 1904, was quoted as calling it "a mandate from civilization" (Bishop 1913, 42). After failing to negotiate a suitably generous lease for a canal route with Colombia, the United States fostered new regional political arrangements. In late 1903, through judicious placement of its battleships, the United States prevented a Colombian intervention from stopping a Panamanian secession movement. Shortly after the proclamation of sovereignty for the new republic of Panama, its government negotiated the Hay-Bunau-Varilla treaty with the United States, which not only allowed it to construct a canal but also granted it, in perpetuity, control of a ten-mile-wide zone along the canal route. Panama received a modest cash payment and promises of annual rent, an agreement that successive Panamanian governments resented for the next seventy-four years.

Legally, Panama never became a colony of the United States. Instead, the Hay-Bunau-Varilla treaty pointedly directed the United States to exercise governance only in the Canal Zone. Panama, in legal theory, retained sovereignty over the area, but it ceded to the United States complete police and judicial control (LaFeber 1989, 35). Americans remained hesitant about overt imperialism, and environmental determinism furnished one public justification for their overseas imperialist actions. An American presence could be framed in an ostensibly scientific discourse without raising the sensitive issue of imperialism.

From 1904 to 1914, the canal was under construction. The project was unquestionably an impressive feat of engineering. American success was aided by discovery of the link between the mosquito and both malaria and yellow fever. The actual digging was done by more than 100,000 West Indian and southern European laborers. These national and racial groups were chosen on the basis of factors of cost and supply, as justified by environmental theories about human ability to work in hot, moist climates. White labor, believed to be more efficient than that of any other group, was in short supply and too expensive (PCC 2 E 1/1905/abstracted 1933). Fortuitously, a depression in the Caribbean sugar industry had made available large numbers of West Indians who were willing to work for low wages.

RATIONALE OF THE SANITATED ZONE

When Americans first began to oversee the digging, Panama was popularly perceived as environmentally dangerous, a place of snakes, malarial mosquitoes, and rank, dank vegetation running riot. Although the jungle was potentially dangerous, its reputation far overshadowed its physical qual-

ities. Likewise, the termini, Panama City and Colón, were deemed sinful, dirty, and uncivilized, "the pest holes of the tropics," in which "a white man's life was endangered to stay even a few days" (Whitbeck 1921, 8). By 1912, after almost a decade of constructing temporary work camps, American administrators began to anticipate the completion of the canal and to evaluate their long-term presence. They concluded that, ideally, the new Canal Zone should be a place separating Americans from Panama. One of the first steps in fulfilling this vision was selective depopulation of the area. Invoking health concerns and labor control, the authorities ordered removal of all nonofficial and rural inhabitants from the zone. Approximately 3,000 acres were reserved as a sanitized zone in which it was officially deemed safe to live; otherwise the 450-square-mile strip was depopulated (*Geographical Review* 1918, 160).

During the next decade, many empirically verifiable aspects of danger and discomfort, which provided the rationale for the Canal Zone, disappeared. Yellow fever was under control; malaria rates dropped; electricity allowed fans to ventilate houses; heated closets eliminated mildew. Nonetheless, the negative ideas persisted. The long-term residents of the zone were still mentally in a sanitized zone. In the mid-1920s, no less a public figure than Samuel Gompers (1924), the president of the American Federation of Labor, could assert, "The jungles encroach upon all cities and towns on the Isthmus and it is a continual fight to keep them back a few hundred yards." Numerous small towns were erected in the apparent safety of the zone. On the bases of both racial and climatic criteria, they were designated "for two classes of dwellers: (a) White people from the temperate zone, that is, the American employees and their families; and (b) Colored people native the tropics, who in this case are principally negroes from islands of the British West Indies" (PCC 13 A 8/1922).

During the initial decades of American control, Panamanians were generally excluded from employment and residence in the Canal Zone. This separation of white Americans from other groups duplicated early-twentieth-century southern urban patterns. Everything from schooling to the layout of post-office lobbies was affected by Jim Crow practices. For West Indians, insult was added to injury when Panamanians joined the Americans in discrimination. West Indians, prevented from becoming American citizens, found that linguistic, cultural, and racial differences and, later, legal prohibitions precluded their integration into Panamanian society as well.

The discrimination clearly rested on racial distinctions between black and white, and partition in the Canal Zone was referred to by the euphemism of silver and gold. Historically, the Panama Canal Company had paid lower wages to West Indians in the silver-backed currency of Panama; higher salaries of white workers were paid in the gold-backed currency of the United States. Thus, the words silver and gold became synonymous with black and white. So-called gold towns isolated approximately 10,000 Americans from

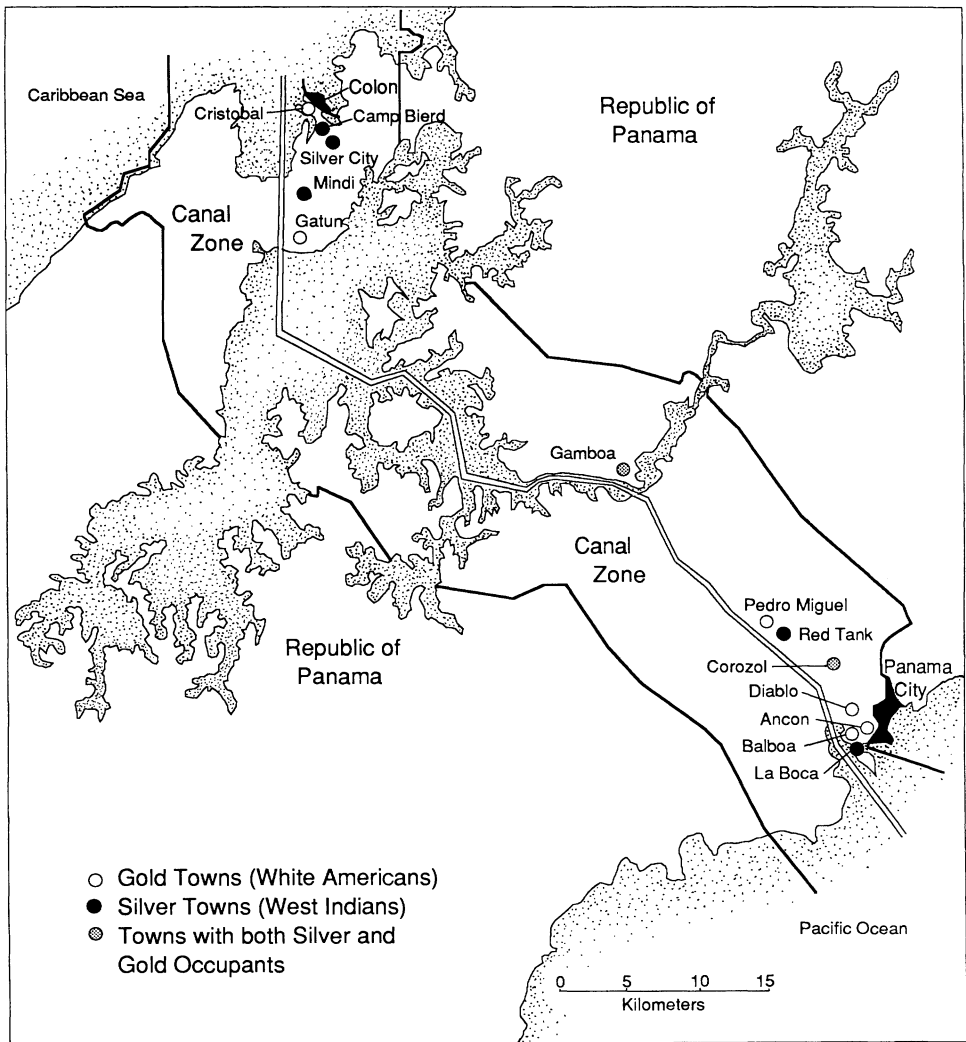


FIG. 1.—Racial composition of towns in the Panama Canal Zone circa 1938.

the nearby West Indian silver towns, and both were separated from the Latin American cities of Panama (Fig. 1). Gold towns reminded visitors of contemporaneous American suburbs, with cream and gray stucco houses, surrounded by lush manicured lawns, and with detached garages. The order and symmetry of the towns reflected the concepts of the City Beautiful (Heald 1928, 22). In this self-contained milieu, the canal commission provided everything from employment and food to movie theaters, bowling alleys, golf courses, and baseball diamonds. Americans could live in the Canal Zone without learning Spanish or, for that matter, leaving the area.

The neat, segregated appearance was rarely left to chance. According to the initial town plans in 1912, the police station in Balboa was to be centrally

located on its main street, but that location was changed when a plan reviewer observed that "the vision of a drunken disheveled negro or white being hustled through the principal avenue of the townsite does not impress me as quite the proper thing" (PCC 47 E 12/6/1913). Thus the Canal Zone became a racially and socially segregated enclave, set apart from Panama. Environmental determinism seemed a commonsensical framework to justify this situation and, more broadly, American practices in Panama.

ENVIRONMENTAL DETERMINISM AND PANAMA

Environmental determinism rationalized a theoretical position by which Americans considered it natural that different races should be treated differently and that races could be ranked according to environmentally based biological differences. In practical application, this meant pay and privileges based on race. Thus West Indian employees enjoyed far sparser benefits than did whites, because "being accustomed to the tropics and the different mode of living they do not require special quarters or a frequent change of climate, which is so necessary to the health of the more skilled employee from a temperate zone" (PCC 28 B 233/1919). Twenty years later, in response to a union request for equal benefits for workers regardless of area of origin, the Canal Zone personnel director asserted that "equality of treatment by law in situations contrary to human nature, (sic) leads to grief" (PCC 2 E 1/1940). Human nature in this context meant racial hierarchy.

Also axiomatic was a general agreement that "native races within the tropics are dull in thought and slow in action" (Huntington 1915, 35). West Indians were thus capable only of manual labor (Haskin 1913). By contrast, the white population, coming from a temperate climate, was both bold and strong. Yet this perspective was contradictory. How could bold, strong whites be so unsuited to physical labor? Environmental theory provided an answer. Because Americans were climatically out of their element, "the very rules of nature force the fair-skinned man to do only skilled or supervisory work" (PCC 28 B 233/1922). The climatic framework did more than divide workers into tropical and temperate categories. An environmentally defined ability to work was conflated with perceived national attributes. Southern Europeans, dark-complexioned and native to warm climates, were more tolerant of heat than northern Europeans or Americans (Price 1939, 155), so the former were hired as overseers.

American nonwhite citizens created problems to be resolved both theoretically and practically. African-Americans were regarded as tropical labor but had claims to benefits accorded American citizens. Comparative studies of black Americans and West Indians, sponsored by the Panama Canal Company, concluded that the former were less efficient than the latter (PCC 2 C 55/1919). The contradiction between nationality and race led to the administrative solution of excluding American blacks from employment: "We do not want any more. They would add a new factor in a problem that is already

sufficiently complex" (PCC 28 B 233/1922). Puerto Ricans were likewise a problem. As late as 1940, the personnel director could write, "As to employing Puerto Ricans, The Panama Canal does not regard them in the light of temperate zone American citizens, but rather as tropical people who have a kind of accidental citizenship" (PCC 2 E 1/1940).

The same mind-set that governed labor practices affected spatial patterns of housing. Both racial and sanitary segregation was intrinsic to the Canal Zone landscape. Groups were separated by small hills, ridges, wooded areas, and open areas. The physical separation was reinforced by the Canal Zone police, which regularly checked identification cards and destinations of all nonwhite individuals in white neighborhoods. Furthermore, by enforcing a rule that only canal company employees could live in the Canal Zone, administrators specified where each employee must reside. Not surprisingly, the social landscape expressed contemporaneous norms of racial segregation. Yet the practice was often justified in other terms. As a Canal Zone governor wrote to a congressman: "In short, we simply accept the fact that both races feel there is a difference due to race and that white and negro realize this . . ." (PCC 28 B 233/1922).

Health was a standard justification of segregation. The chief health officer of the zone stated that to improve the health of Americans, segregation "is a very important measure, inasmuch as it separates the non-immune population from the natives who serve as reservoirs of malaria" (PCC 28 B 40/1915). The sanitized residential zones were places where white Americans could feel safe, but explanations of their existence made no mention of the racial aspects. Instead, the expressed rationale emphasized separation from the tropical jungle, with its environmentally influenced implications of danger and disease. An American living in the zone was "like a man in a fort surrounded by enemies. He is fairly safe if he keeps within the walls" (PCC 2 D 9/1920). Such imagery invoked a psychological sense of danger and uncertainty, reason enough to maintain racially segregated residential areas. Segregation implied safety from more than disease. Linked to environmental determinism, segregation held connotations of safety from unknown cultures.

Environmental determinism provided a useful guide and rationale for social control in the Canal Zone. The moral health of the white canal-commission employees was especially important, despite a lack of concern over the conditions of labor or housing of tropical workers. Proper comportment was judged essential for a worker's health (Abbot 1913, 339). To maintain a sober work force, seven branches of the YMCA were built in the Canal Zone to counteract a milieu that "tends to relax the mental and moral fiber" (Semple 1911, 626). Preston E. James, later to be a preeminent Latin Americanist, explicated the point in 1921 for the city of Colón, with its "saloons and dance halls with mixtures of black, yellow and white men and women such as could only be found in the enervating, moral destroying Tropics" (Robinson 1980, 13).

The same climatic-based logic that assigned special social needs to racial origin also offered a rationale for governmental spending on luxuries that, in theory, were necessary only for whites. It was logical for one canal official to invoke environmental determinism when petitioning the Bureau of Clubs and Playgrounds for a new handball court: "As you know, handball is one of the very best exercises, and in the tropics we need plenty of exercise" (PCC 95 D 25/1925).

Regardless of the alleged limitations placed on Americans by environmental determinism, the United States government was prepared to underwrite the maintenance of the canal on both economic and strategic grounds. One cost was the substantial concessions secured by canal-company employees (Price 1939, 159). From the perspective of the individuals who benefited, environmental determinism was indeed a useful rhetorical tool of persuasion, predicated on a general public acceptance of notions of climatic control. Although academic geographers were abandoning deterministic theories, environmental determinism remained, and perhaps still subliminally remains, an acceptable form of legitimation. Even when the shortcomings of the theory were recognized, it still could provide a rationale for Americans to maintain and extend their privileges.

Such a process of rationalization was inherent in the political organization of the Panama Canal. Its annual budget was allocated to the War Department by Congress. Public defense of the canal commission's actions was sometimes necessary. The canal-employees union, with input from canal administrators, prepared a document in 1919 for the secretary of war "in justification of the present conditions of employment" (PCC 2 D 39/1919). The two strongest arguments were, first, environmental determinism and, second, the similar benefits that many other imperial projects offered. It is notable that the initial twelve pages of that thirty-one-page document detail "the effects of the tropics on the white man." One of the most substantial benefits for Americans working in the zone was a 25 percent pay differential relative to similar jobs in the United States, an advantage attributed "to the enervating and debilitating influence of an extended stay in the tropics." The authors then stress that free living quarters and medical care for whites were available in other projects elsewhere in the world. Free medical care was justifiable because Americans in Panama must live year-round in the enervating, potentially dangerous tropics. By the same logic, West Indians, native to the area and resistant to its dangers, could be denied these privileges. However, at times, it is unclear whether environmental determinism reflected American beliefs or was being put to expedient use.

Taken as a coherent, internally consistent theory, environmental determinism could only doom American imperialism in Panama. How could white Americans be expected to prosper in the face of obstacles such as tropical neurasthenia? It is not surprising, then, that as imperial interests of the United States unfolded, the need to justify strategic and economic aims

repeatedly won over deterministic theory. Since there was no desire to abandon imperial ventures, their environmental-deterministic underpinnings had to be adjusted to fit the situation.

Not surprisingly, the canal administration was concerned when empirical evidence contradicted its environmental-deterministic statements. Vacationing in a temperate zone was considered a necessity, because "Americans here are living outside their natural climate which subjects them to all the bad health conditions involved in continuous warmth and bright light which are enervating and hard on the nervous system" (PCC 37 E 25/1935). When the administration learned that not all Americans were taking temperate-zone vacations, it wanted to know whether climate made any difference. The question was posed confidentially to various department heads in canal administration, and the responses were similar. Except for one person identified as a chronic crab, Americans "appeared to have suffered no ill effects" (PCC 2 D 4/S/1936) from the lack of vacations taken in the United States. Still, the report conservatively concluded that returning to the United States on vacation "was necessary to preserve the physical well being and mental alertness of employees" (PCC 2 D 4/S/1936). The conclusion illustrates both the seriousness of environmental determinism and the degree to which its ideas intertwined with policy.

As the decades of the twentieth century passed and as greater numbers of Americans spent time in tropical countries, growing empirical evidence showed that tropical residence did not impair the health of white Americans. By the 1940s, there was a healthy second generation of Panama-born Canal Zone residents. Many of the commonsensical reasons for environmental determinism had disappeared. Even so, it was opined that the true influences of climate "can only be determined by learning what happens to the third and fourth generations of settlers" (PCC 37 A 33/1947). Notions of environmental determinism remained, and Americans were reminded that they could only be sojourners, not settlers or colonists. Despite the belief that the Canal Zone was one of the most difficult and unhealthy places for white settlement in the tropics, the administration conceded that Americans could remain there through "the application of scientific knowledge and the utmost vigilance in matters of medical supervision, hygiene and sanitation" (PCC 37 E 25/1943). Still, science was not always regarded as an appropriate solution. When costly air-conditioners were first proposed in the mid-1930s, the devices were ostensibly rejected on environmental grounds: "to place employees not inured to temperature changes, in chilled enclosures for long working hours, is a dangerous procedure" (PCC 10 B 11/1936).

GEOGRAPHY AND EMPIRE

Environmental determinism helps in understanding and interpreting the early-twentieth-century American ambivalence toward imperialist ventures. This article has analyzed the influence of environmental determinism in

Panama on issues of labor, housing, social life, and justification for imperialism. Equally important, environmental determinism influenced American representations in Panama. Based on those representations, which did not necessarily reflect reality, policies were formulated, people subjugated, and places built. Environmental determinism provided policymakers and Canal Zone residents with an accessible, acceptable way to explain other, more contentious ideas. Using the rationale of environmental determinism, Americans could be nonimperialists who lived in Panama simply because the tropical climate prevented any other race from effectively overseeing the canal project.

Although I have focused on the connections between geography and environmental determinism in a single case study, such connections may well be generalized to American quasi-colonialism in other tropical locations such as the Philippines. In any event, environmental determinism provides a plausible interpretation for an American presence and actions in early-twentieth-century Panama. As a discourse that served to legitimate imperialism and racism, environmental determinism offers clues about the character of American prejudices and interests abroad.

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