Medicine and International Relations in the Caribbean: Some Historical Variants

Rodrigo Fernós

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For Wapu

Words cannot express my appreciation
of his genuinely good and kind spirit.

It is not the incidents of life that are significant. In all the history of this imperfect and erring world there will be unfortunate, sad, and deplorable incidents. Men will go wrong. Love of gain, ambition, will turn aside public servants from their duty. It is not the incidents of life, it is the tendencies of life that we are to regard. How sets the current? Are we moving toward the goal of high ideals? Are we sinking back from them? That is the important question. The play of the waves tells little. The breaking of successive rolling breakers upon the shore tells us nothing of whether the tide is rising or falling. No matter which way the wave is rolling. Does the tide, the great tide of public morality, the great tide of public conscience, set toward our high ideals? And, marking the course of human affairs on this side of the Atlantic, not comparing what we are and what we do with some ideal standard of perfection, but comparing them with what we were and what have done in the past, we are to gather the answer to the supreme question—comparing weak and imperfect men of today with weak and imperfect men of the century past.

—Elihu Root

Contents

Introduction

New beginnings are recognizable
as such only in retrospect.

—Amos Funkenstein

What happens when cultures meet? This is perhaps one of the most pertinent issues of the modern world. Although there has always been some kind of interaction between peoples, never have individuals been able to so quickly relocate on such a large scale within a cultural region so completely different from their own: Ethiopians in Minnesota, Mexicans in Texas, Indians in England, and Algerians in France. The stories one hears of these movements can often be very amusing, such as that of a Middle-Eastern man raising farm animals in a rented Paris apartment. Yet they can also be tragic, fostering resentment between individuals who have never had any direct personal altercations or disputes in the past. Stories of mob behavior were all too common in the news during the 1990's; we need not be reminded of more recent events so prevalent in the public psyche. Unfortunately, cultural differences tend to accentuate prexisting strains with the arrival of immigrants in a region; they worsen relations when they are turned into distinctive markers used to identify members of nearby communities. Problems one would rarely, if ever, attribute to one's own 'cultural make up' are all-too-easily used to explain the 'odd' behavior of others under conflicting situations. Fortunately, we may also use cultural differences just as equally to elucidate, explain, and resolve crises when they are indeed the sources of social conflict. Whenever the cause of a problem can been identified, there arises the hope of its resolution.

Science, as a shaper of culture and as culture itself, has played a role in the history of these interactions, but usually at such an underlying level that it usually goes unnoticed. While we may be amusingly suprised at a Dominican's explanation for her falling hair—the 'bad spirits' of a given house—these explanations mark genuine differences in worldviews which, in turn, have drastic implications for how people will react to problems and to others. Our understanding of the world obviously frames our behavior, and paradigm incomensurability can lead to tragic consequences, at both the individual-microscale and a broader social macro scale. The label of 'witchcraft', and hence murder, of women in Salem

during the colonial period is no different in this sense from labeling of 'inferior', and hence violent lynching, of so many African Americans in the history of the United States. In either instance, our (mis)understanding of the phenomena framed our all too violent reactions. While we moderns ("postmoderns" for some and "neopragmatists" for others) might view these incidents with pity because our science is more advanced from those in the past, we are no more free from this truism than our predecessors as the 1960s so clearly revealed. Our given state of knowledge will orient our identification of problems, and whether we believe there is a problem after all. Disparities in the general levels of knowledge between two social groups can have tremendous repercussions in the way the two groups will come to receive and interact with one another.

This collection of essays seeks to understand how science has played a role during a time in world history when travel was much slower, in the colonial world via some of the most travelled members of its society: physicians. They include Sir Hans Sloane, founder of the British Museum, Patrick Manson, founder of parasitology, and Bailey K. Ashford, founder of modern medicine in Puerto Rico, amongst others. Only through these detailed case studies can we hope to arrive at universal conclusions. Medicine has been the choice of 'science' also in part because of its human universality. Although the history of science easily intrudes into the realm of philosophy or religion, medicine has traditionally held a more more well-demarcated scholarly domain. Similarly, while the anthropology of science is a nascent field, the anthropology of medicine is a thoroughly documented discipline with a much longer history and a broader body of practitioners. Finally, that westerners have commented to some degree about non-European medicine also provides a great deal of direct evidence of these processes. Men may not be particularly worried that they do not know, but they certainly become concerned when they cannot cure.

What may we conclude as a result of these case studies? As one may expect when covering such a broad field over hundreds of years across dozens of societies, the relationship between medicine and society has been a complex one. While in some instances medicine helped frame social relations, society has also affected the development of medicine. As in the interacting dynamics between science and technology, one has shaped the other while in turn being influenced as well. In other words, there has been a positive feedback system between medicine and society.

When physicians as Leonard Wood were placed in political-military power, they helped establish the appropriate setting for the further development of medicine and, consequently the well-being of the society in which they practiced.

Under his tutorship, North American doctors found the cause of yellow fever, and hence its cure in tropical Cuba—a definitive solution which for years had eluded Spanish physicians as Carlos Finlay. As the case of Panama Canal, political changes led to medical advancements, which in turn had further beneficial social consequences. Another example might be that of Ashford, whose contributions to Puerto Rico's well being fostered his stay there, and in turn the early acquisition of tropical medicine and medical research in the island. In his case, medical advancements had social benefits, which in turn had beneficial political implications for the further development of medical research: A-B-A rather than the B-A-B pattern, A representing medical change and B political change. Growth in one area contributed to growth in the other—a distinctive trait of the positive feedback loop.

However, this feedback system was not always 'positive' in the sense that the series of dynamic looping exchanges between medicine and society could deteriorate into a negative spiral, as in the case of Manson who was 'forced' to flee China as a result of a negative social environment. Manson would develop tropical medicine eslewhere, in the British metropolis. Perhaps the most drastic example of the positive feedback system with negative consecuences is when medicine helped foster the idea of the biologically inferior African. We may certainly say that men seldom know the truth about themselves, and much less about others. Europeans during the colonial period who judged African medicine so harshly were in fact judging a medical system whose epistemology was much closer to their own than they cared to imagine. The thinking of that racist Edward Long during the eighteenth century was much more like his African contemporaries; Western Medicine would not yet undergo its own particular "scientific revolution" until the nineteenth century. If opposites attract, perhaps we might say that similars repel.

The inevitable result was a conflation of the cultural and the racial realms. The African's cultural heritage was confused for his racial make-up, as the mixing of two colored plates in children's toys whose combined optical illusion makes for their difficult separation. The mistaking of the second (race) for the first (culture) helped create a horrific ideology that justified the cruel repression so typical of the Colonial Period. Its harsh footprint can still be seen today. It is hoped that studies as these will contribute to their unique separation: race from culture and culture from race.

Despite such incidents, this history is a defense of Western science and the medicine on which it is based. Simply put, too many ills are imbued onto its practitioners. To claim that all medical practitioners were blind agents of empire is to fall into the same kind of muddled thinking so typical to men like Edward

Long.[1] Such allegations ironically lump under one single umbrella too many different individuals and groups with competing and conflicting motives—committing the same error as the claim that all men have repressed all women throughout all of history.[2] Given that some physicians today vehemently criticize governmental policies, we can certainly expect similar voices of opposition in the colonial world; individuals are not blind automatons. When we read claims that an overt racism was the single feature of the relationship between North American physicians and Cubans at the turn of the century, we may immediatley question its objectivity and raise doubts about the underlying personal and emotional biases of such extremist views. Dr. Leonard Wood may certainly have been harsh in his treatment of Cubans, but Dr. Wood did so with a genuine belief that it was for the greater benefit of that society—regardless of race. Agression need not necessarily entail repression. Even Sloane, who spoke at times so condescendingly of Africans, was also as genuinely interested in African medical techniques and instruments. His experiences in Jamaica left him with a life-long desire to know other groups and cultures, and may have been a more important factor in the creation of the British Museum than British historians have cared to recognize. An often-forgotten truism, humans and human behavior are complex, and so is their history.

It might have been noticed by the reader that the term "international relations" is being used in a rather loose sense. It usually refers to inter-governmental relations, the direct relations between states, rather than to inter-societal relations at the individual level, as it is used in this compilation of essays. We are not alluding to deep and complex issues of international diplomacy a-la Henry Kissinger, nor are we trying to answer whether the stance of realism is a viable one as some historians of diplomacy tend to ask.[3] Instead, we are looking at the seeds of international relations (inter-personal relations) rather than their full grown fruit (inter-state relations). Nonetheless, this need not mean that the topic is an unimportant one, nor that one (inter-personal relations) is not related to the other (inter-state relations). Politicians rarely operate in a vaccume; more often than not, they have to deal with the weight of issues imposed upon them by society, history, or unforeseen circumstances. This is as true for the politician of a small state, as the Governor of Puerto Rico, as it is for the President of the United States. In either case, although both are "leaders" formally speaking, they are in turn "led" and constrained by underlying realities. Culture and history set the broader undercurrents and issues of international relations.

While scientists and physicians do not set a nation's international diplomatic agenda, their science and intellectual legacy help establish the underlying context

of broader issues which politicians and leaders confront. Robert Oppenheimer may have been prevented from direct participation in the dialogue of international diplomacy in his later career, but his work on the atomic bomb set the questions which all future presidential appointees have had to deal with in some way or other for more than half a century. If the typical argument for social constructivism is that science is molded by society—some argue in a 'hard' fashion (Marxists) while others in a 'soft' manner (Mertonians)—we may point the inverse relationship with its causal arrow turned backward.[4] While medicine, science, and technology for that matter, do not determine society in a 'hard' sense, they undoubtedly shape the range of available responses, reactions, and potential issues within that body politic. They invisibly shape our world view to a degree which few ever have the time to appreciate. That this process tends to be so 'invisible' to our awareness, it makes the role of metaphysicians such as E. A. Burtt all the more important.[5] Unfortunately, it also reduces the probability that the topic will be recognized as an important issue in the public sphere. This book hopes to clarify some of the ways in which medicine has played a role in this process—not at a deep and introspective metaphysical level as Burtt does but rather at the more observable level of the public social domain.

ENDNOTES

[1] See Chapter 4 for a brief historiographical review.

[2] Has love no value or mutual benefit?

[3] Robert J. Art and Robert Jervis, *International Politics: Anarchy, Force, Political Economy, and Decision Making,* 2nd ed., (Boston: Little, Brown, and Company, 1985); Hogan, Michael., ed., *America in the World: The Historiography of American Foreign Relations since 1941* (Cambridge: Camrdige University Press, 1995); Amy Kaplan and Donald E. Pease, eds., *Cultures of United States Imperialism* (Durham: Duke University Press, 1993); Anne McClintock, *Imperial Leather: Race, Gender, and Sexuality in the Colonial Contest*.

[4] Harriet Zuckerman, "The emergence of a scientific specialty: The self-exemplifying case of the sociology of science." in *The idea of social structure: Papers in honor of Robert K. Merton,* ed., Lewis A. Coser (New York : Harcourt, Brace, Jovanovich, 1975), 93-151; Trevor J. Pinch and Wiebe E. Bijker, "The social construction of facts and artifacts: or how the sociology of science and the sociology of technology might benefit each other," in Wiebe E. Bijker, Thomas P. Huges, and Trevor J. Pinch, eds., *The Social Construction of Technological Systems*

(Cambridge, MA: MIT Press, 1987), 17-50; Trevor Pinch, "The social construction of technology: a reveiw," in Robert Fox, ed., *Technological Change: Methods and Themes in the History of Technology* (Amsterdamn: Harwood, 1006), 17-35.

[5] E.A. Burtt, *The Metaphysical Foundations of Modern Science* (Atlantic Highlands, N.J.: Humanities Press, 1952).

PART I

HISTORIOGRAPHICAL ESSAYS

1

Paranoia in the Rhetoric of Academia: Tropical Diseases and the Rockefeller Foundation in Latin America

Finally, the great foundations are inextricably tied to imperialism. Their wealth came from giant financial and industrial corporations associated with the rise of imperialism. They are run by trustees and officers who, by their material interests and ideological commitments, are part of the corporate capitalist class.

—E. R. Brown

The impact of the Rockefeller Foundation's (RF) medical activities in Latin America is mostly portrayed as negative in the historiography—the stain with which the Rockefeller empire attained its wealth is projected, validly or invalidly, upon the redistribution of this wealth through the Foundation. On either extreme, from the "imperialistic-cultural hegemony" side to the more nuanced critique of a "misunderstanding of local conditions," its assessment generally rejects any efforts by this Foundation to contribute to the health and welfare of the area. This paper will describe and analyze such arguments with respect to yellow-fever and malaria and attempt to place such criticisms in a fairer light. While recognizing the clear validity of some points, others are either absurd or truly distort the context of such actions, something which can only serve to exacerbate misunderstandings and inauspicious relations between the two continents.

The themes of such critiques are as follow: 1) such actions led to greater centralization and a monopolization of power by the local state, 2) grants were tied to economic self interests of the Foundation, 3) funding was based not upon the scientific merit of a particular group but would vary with changing political relations to a changing local government, 4) the Rockefeller Foundation created its own scientific-conceptual framework, 5) it assumed an excessive control over foreign medical policies and organizations, and lastly (and most importantly), 6) it

imposed its own economic-centered criteria and medical models without considering the full range of local circumstances.

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Much of the historiography is uncritical and overly simplified, as Cueto himself has commented.[1] One of the first things that first strikes the reader is their narrow, and thus mutually contradictory stances. Solorzano portrays the RF as having a world-wide policy striking at yellow fever only; consequently, malaria, which was considered by Mexican doctors to be a more significant disease was supposedly overlooked during the 1920's.[2] Yet, Franco-Agudelo, who focuses on malaria only, points out that the RF during this period collaborated with the Venezuelan Health Board "in a joint study of the endemic diseases that plagued these [Venezuela] parts," and also writes that the RF began a Mexican anti-malaria project in 1937.[3] Agudelo's article thus points to the fact that the RF did have local surveys, and that its 'oversight' in Mexico did not last long.

Solorzano's broad point of contention, however, was that it made no sense to initiate a program to treat yellow fever when in fact Mexican authorities had already controlled it and was not a current problem. There had been an epidemic in 1903 of 1,075 reported cases; its subsequent control by local medical authorities reduced its incidence to only 73 cases the following year and of lower numbers in consequent years.[4] Under these conditions, why did the RF initiate a plan, and why did the Mexican government and doctors go along? Solorzano explains it in the themes of imperialism previously mentioned. It is doubtful, however, whether this fact is a fact that need be explained at all in the context of 'imperialism'.

During the 1940's, a $50 million campaign in the United States was conducted by the Public Health Service against malaria despite the fact that cases of malaria had declined and were not endemic. There were a number of causes, as explained by Humpreys.[5] To begin with, statistics of the disease's incidence were not accurate and it was often confused with typhoid (the same thing would occur in studies of yellow fever incidence in Brazil). Also, many cases simply went unreported by cognizant doctors. Consequently, it was thus thought that incidences were much higher. Accurate statistics of the disease were not made until the 1940's.[6] Another contributing motive was the concern that soldiers returning from battle in the Pacific during WWII were bringing new forms of malaria as well, and it was feared that a new epidemic would be created. The criteria that was eventually used was not the reported cases of malaria but rather counts of

mosquito density. This change in reporting actually gave the false impression that disease had declined with the decline in mosquitoes, a problem even Andrews of the Centers for Disease Control acknowledged. Another stimulus was the use of a new technology, DDT, which was more efficient and longer-lasting in eliminating the mosquito and thereby encouraging its own use.

This event in the U.S. domestic medical history reveals that a seemingly 'excessive' behavior by an organization need not be explained upon the negative terms of purposeful dominance and control. It shows that the U.S. medical mentality at the time focused primarily on a preventive rather than curative approach when the health of a community was at stake, and that such orientation wasn't particular to the RF. One might also question the reliability of Mexican statistical records of disease incidence. Agudelo himself writes that "During this era [first half of twentieth cent], the Latin American countries lacked adequate statistical data on malaria."[7] One may thus reasonably question statistics for similar diseases as well considering that medical organizations in Latin America were not as centralized as those of the U.S.—issues which Solorzano never addresses. There were obvious differences between the two cases, such as the fact that the beneficial effects of DDT were not identified until 1939, about twenty years after the RF's yellow fever programs in Mexico and thus could not have acted as a stimulus. One can nonetheless argue that 'excessive' policies need not have been motivated by aims to "increase profit margins of the Rockefeller empire."[8]

It is argued that the Rockefeller's policies aided state control of minority-indigenous groups within national boundaries of Latin American countries. During the 1920's, Obregon's armies had trouble controlling the open opposition that had risen in the state of Morelos. This inability was due to a great extent to the fact that local groups were immune to versions of yellow fever that military men from other areas were not.[9] Similarly, yellow fever played a role in a Brazilian small scale rebellion that erupted in 1926 and led by Luis Carlos Prestes. His army of one to two thousand person movement rebelled in the sertão but curiously failed to get peasant support (peasants actually fought against them). As with the Humphrey U.S. study, urban groups feared an epidemic of yellow fever after the return of the 3,000 troops. These fears were quelled by the anti-larval approaches of the RF.[10] In both cases, control of the disease meant control of the nation.

Yet the role of a disease in war is not confined solely to conflicts between indigenous anti-national or anti-capitalist groups that have formed their own political consciousness. It is a factor common to all wars in spite of any one particular group's motivation and rationale. During WWII, malaria was cited at the

"#1 disease" and was a factor in the fall of Bataan.[11] Whole islands would be spread with DDT in order to protect arriving U.S. troops. One would be hard pressed to characterize the Allied defense against the aggressive Axis expansionist behavior as one that was fighting for "imperialism." or "empire-building." Quite the contrary, as the historical record shows. Agudelo himself argues for a military influence in policy making and military-style planning, yet just because 10% of the advisors to the International Heath Division were from the military clearly does not mean that they controlled the IHD; advice is just that—advice (suggested guidance, not coerced).[12] Had they had a prominent majority (60-80%) [or if the military controlled its funding], then arguments for influence would be stronger.

Another critique is that the RF primarily aided areas that were beneficial to the economic self-interest of their parent company, Standard Oil. For example, Agudelo shows how medical support coincided with areas of actual or potential investment: North Carolina's cotton fields, Mississippi's lumber, Puerto Rico sugar fields, Venezuelan Oil, Mexican Oil (i.e. Minatitlan oil fields).[13] Yet, as Cueto points out, not all funding were tied to areas where Standard Oil had investments or presence.[14] Similarly, despite hinting at the financial benefits that Standard Oil stood to gain by changing treatment methods of malaria from 'anti-mosquito' to 'anti-larva' (the new 'weapons' included chemicals manufactured by Standard Oil such as kerosene, carbon tetrachloride, pyrethrum), Williams shows that the Foundation did not push their own brands of such products.[15]

It seems rather clear, however, that funding did vary with the climate of political relations between the United States and its Latin American counterparts rather than with the quality of such research. The saddest epitome of such an example is that of Bernardo Houssay and his Institute of Biology and Experimental Method in Buenos Aires. Houssay was one of a few elite scientists in Argentina who had done Nobel Prize-winning work related to the heart and blood supply. Fired from his university position in 1943 for criticizing Perón, Houssay then formed his institute. Despite the fact that a number of awards were given recognizing Houssay's contribution at this time (i.e. Nobel Prize, presidency of two medical congresses in Buenos Aires), and that his institute published a prominent medical journal, his funding was rather drastically reduced by the Rockefeller Foundation soon after. In 1949, the RF closed its Buenos Aires office. This curtailment was so that Houssay, when visiting the U.S. in 1959, asked an RF official, "Why has the Rockefeller Foundation forgotten about me?"[16] We can imagine a boy tugging at the elbow of a distant father, expecting recognition for his arduous labor.

At the other end of the spectrum was Alberto Hurtado's Institute of Andean Biology in Peru. It was highly funded by means of equipment, grants-in-aid, and fellowships for postgraduate training in the U.S.. Just as Houssay's Institute, this group was in a favorable position of making a number of significant contributions given the great variety of living environments—studies primarily focused on the reaction by the human body to low oxygen pressure. It was of significance that in the 1950's, more than 4 million Peruvians lived at altitudes between 6-14 thousand feet, with another few thousand living above 15. It was of more significance, however, that the political situation by 1948 had changed with the military coup by Gen. Manuel Odria with his pro-planter, pro-export policies favorable to the U.S.[17]

If one plots the total amount of funds granted to the kind of governments in power, one can trace a rather significant correlation between the two. This correlation is clearest if one looks at funding for Mexico. In the years following Cardenas' ultra-liberal policies of land distribution and corporate expropriation, we see a very small amount of funding—$9,950 for the years 1941-5. To contrast, the years following Camacho's more moderate presidency are also followed by an increase in funding—$36,660 for 1946-50. Again, in the years following the right winged Aleman, we se another increase in funding, up to $57,050. The peak was reached in the years 1956-60 with a funding of $71,750 (under the moderate rule of Cortinez), followed by a sudden drop to $18,500 during the years of the left winger Lopez Matos. Similarly, during 1951-55 we can clearly notice the funding-politics formula: Peru had the highest funding of $90,575 and a government who believed in export-based liberalism policies, whereas Argentina had the lowest funding of $15,435 exactly coinciding with Peron's populist presidnecy.[18] Other factors could account for this correlation, but it is not unreasonable to state that political relations influenced funding decisions.

Was this political correlation to funding right or wrong of the Rockefeller Foundation's policy? Since a value judgement is implied in most studies looking at the RF, to ask such a question is to verbalize such assumptions rather than to ask an inappropriate historical question. I would argue that, given the uncertain political climates of many Latin American countries, the Foundation had a right to 'protect its investments'. The same 'right' that Latin American countries gave themselves to expropriate foreign investments provided the same justification for these foreign investors to withdraw such investments in self defense. Perhaps what is ironic about the RF's grants to local medicine-science was that it was an investment in such nation as well. That such types of investments had a dual role benefiting the nation meant that 'expropriationist' policies, while seemingly ben-

eficial in the short run, were highly negative toward industrialization in the long run because it affected the developing scientific organizational infrastructure of such nations. One of the most significant points made by Cueto was that local scientists-medical researchers were forced to maintain their own private practices, teach extremely large classes, and hold a number of administrative jobs because the nation could not afford to support medical specialization of researchers. Their diversified role negatively affected the development of innovative medical research—Peruvian researchers were often frustrated by the fact that they returned to such conditions that were unfavorable towards research. Funds by the RF enabled medical research to be conducted despite the local circumstances, not because of them.[19]

It is also argued that the RF misunderstood local circumstances, imposed their own criteria, and as a result often did more harm than good. The Rockefeller surveys of science (primarily medical education) throughout Latin America between 1916 to 1929, were in fact usually conducted in a few days and were not thorough attempts to understand the complexity of local systems.[20] They were merely first impressions. Similarly, when conducting medical reforms in Brazil, the RF did not seem to understand the pride that Oswaldo Cruz's anti-mosquito and 'foco'-based policy gave the nation and its doctors; this pride led to a conservative tendency against changes in medical approach to tropical disease. To the Brazilians, it represented the intellectual potential rather than an innate inferiority; it also served a political role for leaders who could little afford to treat the ills of a rapidly urbanizing nation.[21] Expanding cities such as Sao Paolo in the south grew so quickly that they did not have adequate water or sewage systems; a majority of the population had 'jarras' as secondary water sources. That the RF suggested an anti-larval approach using fish and oils was also criticized by local doctors who pointed out that such fish were usually taken out from these contaminated systems.

Thus, when the surveys were completed, they suggested medical reforms that reflected more the nature of problems in the medical profession of the United States rather than Latin America—it was modeled after the Flexner report of 1910 rather than a true understanding of local issues. One of the goals these reforms was the establishment of a few model schools to make the 'peaks higher'; it was thought that by establishing elite centers a competitive system would be created amongst the different schools and thereby lead to a self-improving system.[22] The U.S. model assumed that it had to eliminate a large number of low quality schools that were predominant in the U.S. at the time; their elimination would also draw more resources to the 'top-notch' schools. In Latin America,

however, this model was not applicable, in part because there was no excess of medical schools. The number of schools were as follows: Argentina-5, Brazil-12, Mexico-4, and Peru-1.[23] Also, the medical structure in Latin America, contrasted to that in the U.S., was government controlled—it was a hierarchical system where most of the decisions were made from governmental institutions. No system of competition could have been created under this legal-policy framework. Much like economic protectionist policies that strengthen monopolistic ventures, the enactment of the RF's recommendations established a polar system divided into very few elitist centers. These centers had little impact outside their local areas and/or universities burdened with poor conditions and excessive number of students (massification) which continues until today.[24]

It is clear, however, that the misunderstanding went both ways (even by today's scholars). The early surveys of Latin American science were conducted in the Caribbean because it was cheap (proximity of location), small scale, and drew little publicity. Cueto provides the hypothesis that the 'cautionary' practices of the RF were due to criticisms that the institution had endured; this explanation's fallacy will be explained shortly.[25] In Brazil, the likelihood of 'reimporting' yellow fever from northern agricultural states to the more industrialized southern ones posed a significant threat. The RF believed, however, that it would have more of an impact by focusing on cities with a population greater than 2,500 inhabitants; costs for a program including the small outlet cities of the Amazon valley would have significantly increased and become overwhelming.[26] There is a critical tone to the RF's approach by Williams, who mentions the acknowledgment by Connor as to the policy's inadequacy.

From the point of view of the RF, however, we note that this 'cautionary' approach was not due so much to prevent criticism but rather to have the most impact with the limited amount of money they had to work with (despite its relatively large size). Large projects cannot be conducted blindly without structure; they need reliable cues which will assure some sort of significant contribution and which will assess each stage of growth. Otherwise, such large sums of money will have been wasted and produce nothing. The RF obviously could not have reformed these entire societies but rather had to focus on specific pockets which would yield the greatest impact or 'return for their investments' (in this case meaning reduction of yellow fever, and improvement in the medical structure). Initiating surveys on a smaller scale in the Caribbean meant that errors could be pointed out at earlier stages with lest costs involved, and more reliable techniques could also be 'ironed out'. Similarly, an emphasis on attacking yellow fever in large cities where there are greater population densities meant greater returns for

a greater amount of people. Again, that the main assumption behind the surveys was that a population's health depended not upon the RF campaigns but rather on the establishment of qualified local practitioners meant that the RF sought to establish not a position of dependency in areas of Latin America but just the opposite—one of eventual non-dependency upon the philanthropy of groups such as the RF.[27] From an economic standpoint, this approach is also more 'efficient' in that it leads to a self-generative body of practitioners that do not have to rely on U.S. educational institutions.

Whatever the misunderstanding of local conditions, however, it should also be pointed out that the RF did not establish programs without the consent of local governments. "In that region [Central America], an important pattern was set: work would be undertaken only when the approval and cooperation of local governments was secured…all major decisions were first discussed with U.S. ambassadors to the respective republics, the Department of State in Washington, and the authorities of the prospective host nations."[28] Given this cooperation by national governments, one cannot claim that the RF imposed its will upon such countries. One could raise the issue of whether these governments in fact represented the 'will' of the people residing within the nation (something which is questionable many times when indigenous groups are considered), which in turn is a projection of U.S. political mentality-reality onto that other nations. Leaders of nations are not always fairly elected representatives of those nations. Nonetheless, there is clear evidence that the motivations on behalf of the RF were well-intended rather than 'imperialistic.'

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In 1920 Roger Greene, the president of the Peking Union Medical College, suggested that a loan be made to the Chinese government so that" [Chin. Gov.] would for this special purpose accept a very large degree of foreign control of expenditure. The practical experience gained under the operation of such a loan might be of enormous value in creating a better understanding between the bankers and the Chinese government."[29] Even though this example is cited by Brown, its example seems to elude him. His article focuses on the word 'control' in the citation without understanding that what Greene was most likely referring to was the elucidation of a Western cultural practice to a non-Western group.

That is to say, when banks loan to individuals, banks need to assure themselves that an individual's fiscal practices are realistic and give some guarantee that the loan will eventually be paid off (i.e. assessing costs versus projected earnings).

Unless this is made, the individual-borrower is the person most likely to loose in that their inability to pay off the loan will mean a loss of whatever business/property was 'purchased' in the first place. Whether one chooses to call this 'capitalism' or 'hegemony', it still does not deny the just right of a person(s) who lend money (or one might say, barter an entity), to get at least the equal portion of the loaned amount (or exchanged entity) back. Only when the money is returned in payment has a 'barter' truly been made; otherwise, it would either amount to theft or a paternal 'giving-away'. Similarly, loaning sums to the Chinese government would hopefully help this group understand the nature of Western trading practices which, to the inexperienced and untrained, often seems confusing and unfair.

This cultural confusion regarding the norms of government, economics, and medical practice is prevalent throughout the much of the literature regarding the Rockefeller Foundation in Latin America. Whereas the earlier literature was less nuanced and more open about its opinions, the tone set by such literature has pervaded until the present day. Most Western agencies which have donated or loaned large sums of money to Latin America, such as the Alliance for Progress in the 1960's, are portrayed by leftist scholarly literature as groups seeking control over these areas. Wright, for example, treats the Alliance as if the sole goal and consequence was to curb the Cuban Revolution. He criticizes Kennedy because, "no Latin American government could be persuaded to take the goals of the Alliance for Progress seriously. Dictators were not interested in stepping aside to watch democracy take root and flower."[30] While not denying these views, it should be pointed out that Wright certainly undermines the benefits such loans could have produced and the obstacle self-serving governments played in the just distribution of these funds throughout the economy. Latin American leaders, perhaps like the Chinese, have also been ignorant of Western economic-governmental practices; one of the reasons for these programs failures was the practice of 'tokenism'. We notice, however, a wholly different attitude by the Japanese after the Second World War who emerged a defeated and battered country. Rather than hoard such aid or criticize its use, the Japanese government so wisely used Western advice and loans that they now represent a threat to its 'parent' countries. Democratic system safeguarding individual rights and liberties are also forgotten as if they were irrelevant to such studies.

The scholarship that has pervaded relations between U.S. loaning agencies and LA recipient countries is thus characterized by what can be called a blatant paranoia. It is no different to that of the Rockefeller's medical-related activities. Agudelo writes,

> Rockefeller medicine has produced its own conceptual approach to disease. This approach includes the way diseases are conceptualized, the organization of governmental and social reactions to them, the orienting and shaping of medical education and research, and the internal and external power relationships of personnel and institutions involved in the health field.[31]

This absurd positions attributes an excessive amount of power to either the Rockefeller Foundation or its medical researchers (we don't really know who) to complicated issues and relations that are mediated by thousands of people involved. It also distorts the nature of medical practice and the historical record—medical researchers cannot just invent any idea they wish to account for disease, and both Koch and Pasteur did their research before the Foundation was established in 1910 (and thus were not "Rockefeller men", nor could have been influenced by a Foundation that did not yet exist).

The benefits of the Foundation were great and many. Regardless of the means to acquire this wealth, its redistribution meant the development of weak areas in an economy which were essential to the improvement of this economy and the well-being of its citizens. Before the arrival of the RF, Brazil had spent a meager $12,000 in 1917 for rural sanitation. In 1922, it was spending up to $2 million with aid by the RF.[32] There indeed was a process of 'empowerment' by the federal governments of these respective nations, yet attacking such diseases established permanent organizations which benefited all communities. Such was a process no different from that in the U.S. with its anti-malarial treatment in the 1940's. Despite the fact that there seemed to be no serious epidemic, this domestic U.S. program spent $50 million and helped establish the Center for Disease Control as a permanent agency.[33] Similar programs in Brazil and Mexico helped establish agencies, such as the CCEFA (Crusade for Cooperation for the Eradication of Yellow Fever) in Brazil, which had greater national oversight in controlling such diseases. Rather than question this aid, as a whole, it should have been regarded as favorable.

This characterization does not mean to say that we should apriori accept all aspects of such aid by the RF as beneficial, despite its good intent. The internal demands of the RF policy dictated particular modes of behavior which did not always coincide with the realities of the local situation. The RF sought quick, efficient, and tangible solutions to problems that did not always have them. It was not possible to eradicate yellow fever. It was not commendable to reinforce academic centers that were already elitist and few (much like protectionist policies of large companies). Funding for particular researchers did not always depend upon the merit of such research but varied relative to greater national politics; it is in

this sense that the researcher was caught in a web of social forces that were truly beyond him. Finally, Foundation analysts took for granted the success and methods of their science without considering the existing scientific traditions of such locals and their symbolic role to a developing nation. In these ways, elite practitioners from centers that had long ago modernized did come galloping in, preaching their own solutions to the rest of the world—something not all too different from Baptist ministers preaching to others solutions to their own spiritual crises. Not all problems, however similar they might appear to be, are the same, nor are the solutions that follow thereafter.

ENDNOTES

[1] Marcos Cueto, "Introduction," *Missionaries of Science: The Rockefeller Foundation and Latin Americ*a. (Bloomington: Indiana University Press, 1994), xviii.

[2] Armando Solorzano, "Sowing the Seeds of Neo-Imperialism: The Rockefeller Foudnation's Yellow Fever Campaign in Mexico," *International Journal of Health Services*, 22,3 (1992), 542.

[3] Saul Franco-Agudelo, "The Rockefeller Foundation's Antimalarial Program in Latin America: Donating or Dominating?," *International Journal of Health Services*, 13,1 (1983), 56-7

[4] Solorzano., 531.

[5] Margaret Humphreys, "Kick a Dying Dog: DDT and the Demise of Malaria in the American South, 1942-1950," *ISIS* 87,1:1-18

[6] Ibid., 3.

[7] Franco-Agudelo, 55.

[8] Ibid., 51.

[9] Solorzano, 533.

[10] Steven C. Williams, "Nationalism and Public Health: The Convergence of Rockefeller Foundation Technique and Brazilian Federal Authority during the Time of Yellow Fever, 1925-1930," in *Missionaries of Science*, ed. Marcos Cueto, (Bloomington: Indiana University Press, 1994), 33.

[11] Humphreys, 6.

[12] Franco-Agudelo, 59.

[13] Ibid., 56-7.

[14] Cueto, xi.

[15] Williams, 43.

[16] Marcos Cueto, "The Rockefeller Foundation's Medical Policy and Scientific Research in Latin America: The Case of Physiology," *Social Studies of Science* 20 (1990), 237-8.

[17] Ibid., 242-3.

[18] Ibid., 232.

[19] Ibid., 247.

[20] Marcos Cueto, "Visions of Science and Development: The Rockefeller Foundation's Latin American Surveys of the 1920's," in *Missionaries of Science*, Marcos Cueto ed. , (Bloomington: Indiana University Press, 1994), 6.

[21] Williams., 29-30, 39.

[22] Cueto, *Missionaries*, 10, 17.

[23] Cueto, *Social Studies of Science*, 234-5.

[24] Ibid., 247.

[25] Cueto, *Missionaries*, 2.

[26] Williams, 38.

[27] Cueto, *Missionaries*, 3.

[28] Cueto, *Missionaries*, 2.

[29] Brown, 901.

[30] Thomas C Wright, *Latin America in the Era of the Cuban Revolution* (Wesport, Conn: Praeger Publisher, 1991), 73.

[31] Franco-Agudelo, 60.

[32] Willaims, 28.

[33] Humphreys, 16

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On the Difference between 'Anemia' and 'Hookworm' and the Difference it Makes: A Historiographical Review of Science Histories in Puerto Rico

En una historia, hay algo más, que el papel que la contiene, dando expresión escrita a las letras: hay el alma de lo vivido, que debe latir o palpitar en ella…. Hay que atemperarla, fiel a la luz del criterio, que la informa y a la visión objectiva de los sucesos o de los fenomenos, observados; poner, en lucha de equilibrio, la realidad vivida tan circunstancial, en los brazos del tiempo, y, a la vez, sus juicios, para que, la verdad no sufra sus desequilibrios y no se desfigure ni padezca el pensamiento; para que los justos criterios, en la apreciación de los hechos, conserve el prestigio en sus fueros supremos, sacrificando toda tentacion de que el "yo" factor de acción, pueda, arbitraria o caprichosamente, dar pinceladas ajenas, a cuanto se queire esclarecer o poner a vivir en el libro.

—Manuel Quevedo Baez

Fortunately or unfortunately, the history of science in Puerto Rico is a very poorly developed discipline. This is due to a number of reasons—the historical lack of scientific development itself in the island, Spanish cultural traditions, limited bibliographic resources (like so many part of Latin America), and other.[1] Recently, the leading historian of science, Juan Bonnet Jr., who had been trained in physics and worked at a number of prestigious scientific institution in the United States, was killed in 1993 during an attempted robbery of a bakery store where he happened to be. This assassination itself reflects the fact, seldom explicitly recognized by historians, that the historian is as much a part of the history that he studies as the historical actors themselves. Puerto Rico has been falsely lured by its supposed wealth into a false image of prosperity—sudden increases in the per capita income in the late 1960's and 70's were due in part to 'industrial-

ization' which had occurred twenty years before, but more importantly due to the federal transfers that the island was receiving. For whatever reasons, the population levels continue to overwhelm the economy to the extent that violent crime is rampant throughout the larger cities.[2] Bonnet's death, while but a statistic in overall crime rates, has greatly undermined the studies of history of science in the island—studies which themselves would probably have helped shed light on its modernization problems.

This paper will overview the historiography of science in the island, but with a number of extended definitions. Given that the historian is a part of his history, it will look not only at the histories written by these men, but will attempt to incorporate the personal and social backgrounds which so greatly shaped such works. (Of course, not all have been written by men, but the majority have been.) That the amount of literature written about history of science in the island is relatively small, the paper will seek to review as much of it's entirety that the author has been able to locate. As such, his definition of 'historiography' is much broader than the commonly used definition alluding to historical methodology; it will elucidate as well the topics that have not been studied and general important themes missing from such studies. The deficiencies in the historiography are to be expected given the limited number of resources which most Puerto Ricans have at their disposal, not unlike doctors working in the island during the first half of the century. Historians have had to make do with what was available, and did not follow developments in contemporary historical methodology elsewhere. As a result, there has been an interesting result—a 'layering' or 'fossilizing' effect. That is to say that each author, given that there was usually only one per generation, represents different levels along the continuum of the historiography. It is a historiography that while continually developing across a period of time, has captured different methods of historical research, citation, and assumptions with regard to use of evidence.

Another important feature is that of 'contextualization' of science in the island—the attempt to classify, or place into a well-defined box the kind of science or perhaps natural philosophy, that has existed in the island. Just as the island is a political anomaly, it is a cultural and scientific one as well—all three are interrelated. Although politically associated to the United States, the island is anomalous in that it has an ill-defined political relation and a primary language different from that of the mainland. Should science in Puerto Rico be considered part of Latin American science, or part of U.S. science? If under the first, it is seldom considered or treated by historians of Latin American science. That most studies of American science themselves seldom focus on the state but rather on

the national level where most policy formation occurs (or by discipline), usually means the island is also excluded from such studies. While Dupree certainly mentions research done in the island by Dr. Ashford and his work on hookworm, he is considered an expatriate American and thus an extension of American science rather than Puerto Rican science itself. Similarly, studies of Puerto Rican science do not focus on the island's scientific infrastructures but rather on the scientific personnel.[3] The island has yet to define a 'place' in external contextualizations, perhaps it should then be 'self-defining.'

There is a related problem. How are we to define exactly what science is in the island—what is to be included or excluded? The cultural proximity of the island visa vie Western Culture, more specifically American science, is greatly an inhibitory factor in analysis, be they historical or policy-oriented. Many studies fail to recognize and give due credit to internal intellectual traditions, and rather seek to blindly (and often unknowingly) impose a scientific structure (academic and cultural) onto the preexisting mentality. This is not unlike one scholar who wrote that some priests lacked culture because they could not read. Yet certainly literacy is not a prerequisite to culture, but rather culture stands independently of the modes of communication and knowledge bases which that culture stands on. No anthropologist would legitimately argue that Africa has not had culture because it did not have literature. Yet that Puerto Rico has been forced to undergo in a matter of decades what nations independently experience across centuries itself presents a unique case in which to study science and its relation to culture.

What is to be appropriately categorized under this label? The tradition in the history of science is to recognize different levels of scientific inquiry with respect to epoch—each epoch had its own standards which recognized legitimate and illegitimate science. Given the stepladder like nature of scientific progress, one advancement occurring (or able to occur) only until something else exists, there is a high degree of relativism within the discipline broadly speaking across a wide historical time-span. Yet what happens when the line of scientific inquiry or intellectual progress and culture is not that well defined, and rather than stretching historically also stretches geographically as well? Hess's book on Brazilian 'science' suggests that the base level of knowledge in the given community was rather low—the prevalence of Africans in the community, and the wet-nursing of elite children, did much to influence its culture away from a materialistic experimentalism to a deistic worldview.[4] Hence, despite it's lack of scientific validity, spiritism in some ways may be legitimately recognized as the region's 'science'. This itself suggest that norms of popular knowledge in given communities vary irrespective of time-period, an obvious point if we contrast 'fist world' and 'third

world' nations. Yet it is a more nuanced idea. Although we live in the modern world with state of the art-knowledge, not all modern societies concur with U.S. knowledge base patterns. Should elite science then be defined by a society's 'lowest common denominator' with regard to science? While historically it certainly isn't always the case[5], it can certainly argued that these underlying standards have a tremendous influence not only in the scientific culture, but in its political culture as well.[6] While all scientists act according to certain standards and expect others to do as well (highest existing standards), it is highly unrealistic and rather unfair to impose a criteria based on a foreign nation's knowledge base and production system onto a region greatly diverging in the last two respects. Obviously no one would expect a society with a predominantly agricultural economy to have the same knowledge base as an industrial society.

Another very important issue are the assumptions that are made with regard to science—is it a dependent (diffusion) or an independent (isolated) development? Although it is a simple dichotomy, it is of great significance in understanding the great diversity of literature that exists, from the 'liberal' to the 'conservative'. The traditional presumption within the discipline of the history of science is mainly that of an 'independent' development. While certainly ideas are borrowed from one another, and discussion stimulates new ideas, the operating presumption is that scientists do original and creative research which leads to genuinely new ideas in the history of mankind, the stereotypical example of which would be Newton or Einstein. No amount of borrowing would have led to their innovations, but rather would have been a mere repetition and 'reshuffling' of old and preexisting ideas. The concept of diffusion is much more complicated because it introduces a much wider range of social dynamics. A great number of leftist scholars usually perceive knowledge creation not as that by an agent existing independently in nature, but rather by an agent who operates in a distrustful set of relations to other human beings. At the extreme, knowledge is not created but rather stolen.

These issues are elucidated within the traditional history of science. Multiple discovery itself is very interesting because with it, two or more actors operating independently of each other come up with the same concept or idea. Theft is not the dominating issue but rather the environment which two independent thinkers operated in. One standard example would be Wallace and Darwin. Although both did not have much contact with the other, they were influenced by similar literature and experiences, both had been sailing in the Pacific and had read Malthus. Wallace's announcement spurred Darwin to publish sooner than originally intended. Nonetheless, the operating presumptions are very different

despite the fact that the outcome (two actors with the same knowledge) is the same. Yet in cases such as Leibnitz, who accused Newton of stealing his ideas for the calculus, the main issue raised is one of theft. (It is generally recognized that both invented their own particular version). The problem with such accusations is that they presume a very oversimplified model of intellectual creation, and are not aware of the wide number of influencing factors to 'scientific progress.' It is definitely the case that independent innovations culled in a similar environment can at times have a high degree of similarity. Good science operates independently of theft.

Yet the traditional conceptualization of scientific change breaks down when we turn outside of a Western country's internal line of development to that of the non-Westerner who usually has to 'catch up', and whose science is not the outcome of its own internal development but rather that of an 'imposed' set of rule and standards.[7] Traditional models in the history of science suddenly become obsolete. The dynamics greatly change because we operate between two knowledge systems that might have a great range of disparity in their respective levels of scientific development. An example would be contrasting the systems of seventeenth century Europe to that of the Negritos of the Philippine Islands (highly unequal), rather than amongst competing nations which share more or less the same culture, literacy, and language, such as rival European nations in the seventeenth century. If the disparity is too great, a have-not will be unable to catch up to the 'haves' by continuing to develop its internal ideas; even the closely related 'haves' will be forced to 'steal' from competitors in the same domain. They might either to take up some ideas and a great deal of imitation, or will eventually have to give up all together, keeping an eye on the race while other more advanced nations race 'around it'.[8] Nonetheless, leading nations will be the guides by which 'follower' nations judge themselves. Hence borrowing (diffusion) will be an integral part of its scientific character and will probably overwhelm (at least initially), the independent nature of its intellectual development.

It is also an issue not only of historical understanding of the processes involved but of representation (or misrepresentation) of those actors. The problem with the characterizations between the scientific haves and the have-nots fall on either extreme. On one hand, you have the idea of dependency whereby one nation purposefully prevented another from scientific fulfillment.[9] It places the main responsibility for the lack of scientific development outside of the stagnant region and onto the 'haves' of science. The problem with these explanations are numerous. They presume scientific development to be 'natural' and expected when in fact it is indeterminate and unpredictable. Societies that do not have favorable

cultures of science never develop above certain stages.[10] Also, that scientific development is affected by technology, which in turn affects and is affected by the economy complicates matters more. Science is also affected by a wide variety of numerous factors, one of which is 'alienation'. Sub-Saharan African did not develop science precisely because it operated independently of Europe—it was cut away from European contact by the desert. Although some ideas and object cut across, it was largely isolated and hence scientifically undeveloped.[11] Even if it had access, the social structure of these communities seems to have prevented the greater agglomeration into larger social entities, greater division of labor, and in turn more science. The lack of any written culture in many of these regions in and of itself hindered scientific development. In the sub-Saharan case, it was ironically not the social relations which stimulated science but rather which inhibited scientific development (i.e. too independent). On the other hand, there are works which use the independent model to judge other cultures by their own standards, an equally mistaken presumption.[12] Even many of the writers in that volume, that were of native origin, assume that native science should develop according to the pattern set and established by the West; consequently it is the implicit judgment lines existing between the two nations. To judge by external standards is obviously a highly questionable proposition given that actors operate under different circumstances, means, and values, and thus will have different historical 'evolutions'. (We need not assume, however, that they 'evolve' towards the same ends, Western science, as Comtean positivism assumed. Whether they should do so or not is another matter altogether.)

The models can be roughly applied and 'twisted' out of proportion when looking at regional history of science. From an internal point of view, it can very legitimately be argued that 'science' always existed within a given region, if we take science to mean the knowledge of a community. After all, all communities will have some form of 'knowledge', 'information' and 'belief' about nature and man, regardless of the validity of these beliefs. Under such a definition, it becomes culture itself. On a certain level, it can be legitimately argued that Puerto Rico has always had a 'science'. While this science may have not been the most 'advanced' in the world at a given period, it certainly has been the best and the most appropriate to the island given the available means, values, and circumstances. This would be true of all world regions. Yet, while such knowledge bases are valid from the actor's regional stance, however, such an assumption has the potential of becoming excessively relativistic. Such a stance would lead to an excessively pluralistic intellectual realm where all ideas 'go'. If there are no standards and norms, then all knowledge claims by all nationalities are equally valid,

despite the fact that such is in fact not the case (even within one particular region). Some claims, however, have a much higher degree of veracity and validity than others; the less true ones oftentimes have less effect on the world.

While the historiographical problems involved in 'regional histories of science' are too complicated to be resolved here, certainly it seems that the contextualization of knowledge is one appropriate method of historically analyzing a given local knowledge structure. The national context—existing means of communication, economy, previous knowledge base, and political structure—will do much to indicate how certain knowledge systems are going to be characterized visa vie others. Just as an individual must be understood in his own context and background, then abstract knowledge claims must be understood against their social, economic, psychological, and technological backdrop.

A potential problem with this 'nationalization of knowledge', however, would have the negative effect of stereotyping all knowledge within the given system, and not recognizing those true advancements within particular knowledge systems that stand outside these 'contextualizations'.[13] Obviously, only those ideas which are outside of the knowledge system will be those which are revolutionary and innovative to these systems. The problem seems to lie not so much as what is 'within' the particular system but outside of it—for the historian of identifying in that 'realm' of the unknown within a given community the ideas most innovative to them. This in turn implies that the historian needs to reconstruct the histories of science of all different nations to build a truly cohesive historical understanding of the interaction between different knowledge systems, and resultant innovations (if we presume a non-independent characterization). As such 'regional histories of science' are but an emerging field, that could, however, easily loose connection to the preexisting history of science (i.e. internal development of Western science).

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In some ways, one cannot legitimately speak of a historiography with regard to most histories of Puerto Rican science that now exist[14]. They are not historical interpretations per se but more often than not lists of accomplishments or entire citations of primary sources. In many ways it is just like the early histories of science and medicine which merely listed events and dates rather than explaining these, looking for broad historical patterns.[15] As previously mentioned, there is a 'fossilizing' effect in the historiography, where each author is representative of the particular scholarly era in which they were trained. We may explain this histori-

ography as 'dependent' and not having yet achieved a level of self-moving independent research. The same experience is shared by third world scientists themselves. Those from the periphery who train at leading centers of science (metropolis) to then return are not in contact with leading scientist or have the instruments necessary, and thus 'stagnating' (or lack of quick growth visa vie the metropolis).[16] It is this 'stagnation'[17] which can also be found in the historical discipline, and which leads to a 'fossilizing' effect.

In the history of medicine, which is the most well developed of the three histories,[18] one might say that there are three different 'layers' in the historiography—each represented by three different men—all of whom were practicing physicians.[19] The first is by Manuel Quevedo Baez, who has some interpretation but minimal, and was likely influence by a philosophy of history that only the facts should reveal their history.[20] His first volume is more a compilation of dates and names, and his second of primary records reads more like a compilation of newspaper articles of important events of this century. The second author, Salvador Arana Soto is perhaps the predominant historian of medicine up to date. He wrote on the largest variety of topics, has the largest bibliography, and is perhaps the most well known. While there is some interpretation and obviously explores the history with a more well defined criteria (has specific books on particular topics such as ophthalmology), in terms of historical methodology it is very much like Quevedo. There is a heavy use of full citation, relatively little historical interpretation, and a lot of 'background' material presented. Like Quevedo, Soto does not publish in American journals but rather through private publications. The third layer is represented by the author José Gabriel Rigau-Pérez. With Rigau-Pérez, we suddenly leapfrog to the most current historical writing with articles appearing in leading U.S. historical journals, and a thorough research method. Unlike the first two, he has footnotes[21], there is a historical narrative and particular theme for each of his articles, he has poured through a number of archives (including European), and shows application of his own medical background. This leapfrogging to Rigau is a bit surprising given that the differences in time of publication are really not that great between him and Arana Soto—they both overlap in the 1980's, Soto publishing primarily in the 1970's.

One should note that despite these differences, there are common motifs. Arana Soto and Rigau-Pérez both restrict themselves entirely to the Spanish Colonial period. (Harvard for both. Soto himself spent some time studying in France). While Quevedo does extend into the twentieth century, he does not really incorporate U.S. primary sources or histories into his 'accounts'; it remains distinctly localized by regional information. This is a bit surprising from the

topic's point of view given that scientists from the United States, such as Ashford, practiced here and should be considered in their own light. But this is to ask too much of the person. Quevedo was the first to write a comprehensive history of medicine for the island, and had limited resources at hand. As Arana Soto relates, in the 1940's and before, there was a shortage of doctors, and those few that did exist had to attend a great many patients. One should also note that the first medical school in Puerto Rico, the School of Tropical Medicine, was founded not for the purpose of training doctors but rather for research in tropical medicine by U.S. scientists.[22] As such, Quevedo, like all other historical subjects, has to be understood in light of the restrictions and circumstances under which he operated. To judge him outside of these circumstances would be to not only discredit the man but to greatly misunderstand him.

This is not to say that they are necessarily favorable of the Spaniards. One of the predominant features of Rigau-Pérez's first article is his implicit criticism of Spanish attitudes. His depiction of Balmis, the King's representative who wanted to 'introduce' (and gain recognition for) something that already existed in Puerto Rico (smallpox inoculation), is highly unfavorable. Balmis appears as a child who intrudes upon the legitimate rights of island Creoles while they, with great maturity and patience, accept his behavior without forcefully attacking back. Both Soto and Quevedo are generally more 'neutral and 'fact driven' in this respect. It is curious to point out that Rigau and Soto both studied in leading elite U.S. universities who then became leading physicians—not unlike so many Latin American economic scholars who return to their places of origin not to practice history but rather to practice in history.[23] While their stances might be explained with regard to their institutional affiliations, to hypothetically argue as some would that such affiliations wholly define their historical writing is to entirely disregard the value of modern medicine as a curative practice and an intellectual domain. They have more than that; they have professional and intellectual affiliations which ties them to something that goes beyond regional and political conflicts—human health. As such, the general attitude with regard to 'colonial medicine' is much more mature and is not biased by such a contextualization. Unlike many Africanist and extremist Latin American historians who often try to claim that medicine was used to repress indigenous, all authors are very well aware of the beneficial impact to Puerto Rican society of Ashford's medical work. The same was generally true of most contemporary Cubans whose society was medically transformed under the leadership of Leonard Wood; it was a feeling of genuine appreciation.

Both Arana-Soto and Rigau-Pérez understandably write primarily on the Spanish Colonial period because those are the main archives available in the island. It is likely that most other historians who live in Puerto Rico also will tend to focus on that topic and subject. The Archivo General de Puerto Rico, an old public building of Spanish architecture in Old San Juan, houses documents principally dealing with Spanish Colonial history. One of the librarians I spoke to there informed me that to explore twentieth century American documents, one would have to go "ayá" (U.S.). In fact, the few resources dealing specifically with U.S. scientific involvement exist in Puerto Rico, itself perhaps the result of the strong nationalism and need to defend its local culture. The Ateneo, the Carengie Library, the library of the "Colegio de Ingenieros y Agrimensores," and a number of university libraries have very few U.S. documents pertaining to the topic—perhaps to be expected given that the island is not an official state[24] and would probably not be a "U.S. government depositories" library.

The 'problems' discussed with Quevedo Baez are typical of the literature and pervasive, not only within the history of medicine but in science and technology as well. For example, the predominant listing of names and dates, something which was common in his two volumes of his *Historia de Medicina y Cirugia de Puerto Rico*, it was also true of the *Breve Historia de las Obras de Ingenieria de Puerto Rico* for the island,[25] and is common throughout Arana-Soto's historical work.[26] Its primary failing is the full citation of documents, which he puts in quotes. Juan Bonnet Jr. never obtained the opportunity to write a comprehensive history of science for the island, but the small number of articles that he did write, which aimed at comprehensiveness of its history, was also primarily a list of names and facts. There was very little 'feel' for the intellectual history *per se*—of changes in the patterns of knowledge and cognitive structures that had occurred through the years. Two thesis that were written on the history of the science of the island, one under Bonnet and more clear and important than the other, also follow the same pattern.[27]

The reason for the excessive emphasis on 'facts' seems to be rather simple. Historical writing seems to undergo 'historical evolution' itself through a series of stages. One of the earliest stages is laying of the basic groundwork, a sort of skeletal infrastructure, which until it is developed other works cannot proceed.[28] This is a feature common to the development of other histories such as in English history.[29] Once this groundwork is laid out, then other historians can come and explore and develop bits and sections of it—particular events, and whatnot, to 'flesh' out a nation's understanding of itself. Curiously, Rigau-Pérez, does exactly this, working as he did with the introduction of smallpox inoculation—a very

important and standard topic within the 'internal' history of medicine. (Interestingly, Rigau-Pérez does not limit himself to this 'internal' history but rather explores its social context.)

Yet the problem is not so much that these authors have not 'filled' out the historical material, but rather, there is little attempt at interpretation at all, despite the fact that the material and primary sources are being published by them. In other words there is no attempt to understand the broader patterns underlying this history and its 'causes'. As said before, Arana Soto and Quevedo Baez both present a lot of primary sources verbatim. While their presentation is slightly different, Quevedo prints it without quotation, while Arana Soto does, neither of them really attempt to give any interpretation whatsoever. It is, what I would call, a bit too much of intellectual humility; the implicit definition and history does not lie in God but rather in man's work. Man has to give meaning to this material like a sculptor who brings out the inner form in the marble, otherwise it will either never arise or be subject to the gravest misrepresentation by others. It is ironic that the many conferences which were initiated by Bonnet, and published in a series of booklets by the Ateneo, few of the scholars try to give cohesion to this material, but merely 'rehash' the same old facts.[30] Unfortunately, the most recent historian (Rigau), is so focused in 'fleshing it out' (and abiding by contemporary historical methods), that he too has failed to attempt a synthesis of this material.[31] Yet this synthesis is crucial to the development of further histories; it would provide appropriate lines of inquiry for further research. That its internal history hasn't been tied to either North American or Spanish histories of science, is suggestive of the potential work that remains to be done in the area.[32] It also seems to be the case that the failure to attempt to synthesize, perhaps for fear of being criticized or attacked, itself fails to provide stimulus for other synthetic works—old models tend to be repeated in later studies. Thus the scholarship tends to be self repetitive—constant repetition of the basic facts without an adequate understanding of them. These features themselves might be due to the fact that there are very few histories of science/technology/medicine books sold at bookstores; the few that existed were of low quality[33].

The material for such interpretation certainly exists in these works. For example, Quevedo gives us the dates and facts about the entrance of the x-ray into Puerto Rico. We do know that Germans were the first to bring it in 1911, but would have arrived anyway into the island given that many island doctors were purchasing it from U.S. companies. Hugo Stern and Dr. Jose Carbonell had bought a model from the Kny-Scherer company for use in prison, but proved defective. We also find out that Dr. Issac Gonzalez Martinez goes to New York

and buys a similar machine, but later returns it to buy another one from "Victor Co." in Chicago. The meaning of these events, of who purchased them and why, with regard to technological transfer are not raised at all, and probably Quevedo Baez is not fully aware of its meaning, which can only be given when contextualized within broader historical frameworks.[34] Again, these frameworks had yet been developed at his time of writing.

Ironically, the same lack of synthesis and analysis of broader intellectual and technological patterns of which they were a part are also not studied by him and other authors who cover Dr. Ashford. While Quevedo briefly discusses the significant problem of hookworm in the island, which at the time was taken to be anemia, also does not fully contextualize it. He does not inquire into intellectual implications, but rather presents it as a pragmatic problem to be solved. This is very understandable. We should not forget, again, that Quevedo was writing in the 1940's, and hence is not to be personally blamed because such was generally the state of the discipline at the time. Even Ashford, when describing his discovery, is not fully aware of its meaning.[35] Again, this is understandable because concepts such as 'normal science', 'paradigms', or 'anomalies' did not exist at the time; the world of science was mainly the addition of more facts onto more facts onto more facts. Also, historical actors themselves can seldom be fully aware of the meaning of their actions in their own time[36], usually they are too concerned with the actions themselves. But the error is less forgivable of more recent writers.

Generally speaking, the problem with these writers is that they are too focused in the minutiae of research. Such 'historians' were primarily doctors concerned with the specific discovery of hookworm write principally about the details—the amount of blood consumed by the worm at different stages, mortality rates in the island, and whatnot.[37] This is information that was provided by Ashford, and again, a repetition of the 'basic facts'. (Ashford's work is broadly to be considered as 'normal science'.) The problem with these studies is their lack of intellectual breadth, and perhaps the failure to contextualize from a scientific-culture point of view. Yet this 'normal' and 'dull' event becomes highly significant when considered with respect to the shifting cultural grounds that occur precisely when we move between the world of 'anemia' to that of 'hookworm'. The change in words reflects a shift in worldview that is so subtle and quick that it passes unnoticed by the mind's eye—a shift between the medieval world of Spanish science, and the emerging scientific power of North America. Ashford, perhaps because he was so occupied, does not seem to be fully aware of its meaning. Certainly he was very derogatory of this scientific world, and made fun of it and of doctors such as Augustin Stahl, who ironically seems to have been very much like Germany's Vir-

chow—involved in a world where men were not constrained by the restraining intellectual specialization and could freely move about between one field and the other (and in the process even make new discoveries). Both Virchow and Stahl had been doctors and anthropologists, and had participated in other such diverse fields. Yet the intellectual constraints and assumptions which defined Stahl's work were unnoticed by Ashford. It is here where the historian needs to operate—in the imperceived cultural differences between the two worlds. Perhaps Ashford reacted like this because American medicine at this time, although in a process of ascendancy, was still to tied to its uncertain rivalry by a number of medical sects (what today we would now call quacks). Also, doctors within the military were poorly treated and did not give much importance to medical research (despite the fact that one of the aims in war was to survive and kill off the other man). For example, Ashford mentions two instances where both he and Walter Reed were about to be sent to the Philippines for duty there; Reed was in his office on the verge of tears. Yet such men persevered to continue their own lines of research and make significant contributions to science—in spite of rather than because of the institutions they operated in. (It is a problem that sadly continues to exists.) One should note too that Leonard Wood was greatly opposed by members in the military when he was appointed governor over and above other military officers with greater seniority.[38] These important issues are often glossed over by historians as if they didn't even exist.

The cultural issue is also bypassed by Arana Soto, who writes about duels between doctors in Puerto Rico, which in and of itself is indication of clear Spanish influences, but does not attempt to trace this cultural influence onto medicine.[39] How Spanish medicine was different from U.S. medicine at the turn of the century, nor how it had influenced Puerto Rican medicine is not addressed in the works analyzed. Arana-Soto, like so many, also holds onto an idea that the history of science is the mere accumulation of acts. He does somewhat try to contextualize by briefly giving the scientific antecedents from the wider history of 'science', but fails to trace or look for intellectual nuances underlying these different discoveries. Just as Quevedo listed, Arana Soto follows this tradition and lists innovations, going all the way back to the Greeks. At times, the quality of this writing might be said to be 'biblical' in the sense that, as the Jewish testament, it traces in much detail who was born from who, who did what, from one generation to the one previous to it.[40]

It is interesting to point out that studies with regard to science policy in the island presume an even more ahistorical and static conception. The profound issue of cultural shift is entirely bypassed, and are characterized by projections of

the observer's own cultural/scientific world than a genuine understanding of the world which he studies. This is true not only of U.S. writers, but of Puerto Rican writers as well who more often than not model themselves after American scholarship, regardless of its appropriateness. While minor cultural differences certainly are raised, such as problems arising out of language differences, more significant issues with regard to the mental frames within which each actors lives in are altogether avoided and unmentioned. Subtle intellectual change is the 'invisible man' of this community.[41] Negron de Montillana, who wrote mainly a history of education, points to the problems of translating peach for mathematics textbook problems when Puerto Ricans had never seen the object. Similarly, there is the dual problem of trying to learn in two languages, which makes a native speaker who has no bilingualism, very difficult to learn. Learning in a tongue different from one's native language after a certain age is usually highly difficult, especially if the parents also do not know the new language.[42]

Language, though important, subsumes the more important issue of 'mentalité'. For most Puerto Ricans, culture is defined as language, thus the preservation of language is a key to the preservation of culture—a common theme throughout much of Puerto Rican history. Yet while certainly language retains the assumptions and expectations implicit in a culture, these mental models themselves may erode despite the fact that language is retained. What is important to consider is that culture goes much deeper than one's language. It is the worldview that is formed from a particular way of life, human interaction, communication, and whatnot. While certainly there is a Spanish heritage in Puerto Rico, this heritage has transformed itself from being Spanish to being uniquely Puerto Rican. Attempts to preserve this culture by looking back to Spain[43] ironically do more damage because it seems to be going back to the roots, but the roots do not lie in Spain but rather in the island itself. Language is an indicator of culture, but not culture itself; not unlike trying to understand botany by studying the word rather than the phenomena itself as Isodore of Seville did at the time of great decline of Western knowledge (i.e. the beginning of the medieval period).

Policy studies with regard to science are clearly done out of immediacy; and ask pertinent questions to their resolution—what is the current state, what are the particular problems, what goals should be sought for, and what particular plans should be established. An understanding of contemporary scientific problems certainly presuppose a comparison of contemporary facilities in contrast to more advance regions as the U.S., and sheds light on the structural problems with regard to the development of modern science in the island. For example, although a much larger percentage of government income goes to education in

P.R. than in the U.S., the total amount of this money is still insufficient to meet current needs (in the 1960's and 1970's).[44] The lack of 'laboratories with working surfaces for experimentation' meant that most science teaching was didactic rather than 'hands on'. Another result was the consequent fighting over existing materials: either an 'all or nothing' approach, hoarding all or get none.[45] These problems continued into the 1980's. A study from the time also reported that, facilities were overworked, and both students and teachers were as inadequately trained for their roles as the other in comparison to U.S. standards at the college level.[46] Although the U.S. generated 17.5% out of its high school population with who were 'highly capable of going into science', only 50% students in P.R. went to school for a full day.[47] Structural problems—the development of adequate 'human scientific capital', the unrealistic goals expected out of a small budget, etc.—are indeed important considerations with regard to science policy that cannot be overlooked.

Yet while a contrast to U.S. infrastructures and problems does elucidate and contextualize the scientific problems faced by the island, often these contextualizations greatly distorts the local situation—a problematic approach found in both 'native' and 'foreign' observers. For example, John Warner assumes that failure in academia is due to 'lack of requisite mental ability' and does not consider the role of language in the process.[48] Ian Court looks at how teacher expectations influence their behavior with regard to the student, and its impact on consequent student behavior.[49] That teachers got frustrated and bored when they themselves had too much reading to do is not fully considered by him; the very oral nature of the local culture is not a factor in his analysis.[50] Michele Aldrich considers Puerto Ricans in a U.S. context rather than in its own island context—they are grouped into the 'minorities' heading.[51] Obviously, a Puerto Rican in Puerto Rico is not a minority. Manuel Gonzalez makes the same mistake, but in the opposite direction-of projecting local realities onto that of the U.S.. One cannot contrast in the manner he does U.S. and P.R. science; they are not 'equals' in terms of resources and history and hence should not be considered as such.[52] That the AAAS study contextualized its policy study with regard to individuals within U.S. institutions rather than on island institutions themselves reflect the heavy U.S. 'national' (as opposed to 'state' or 'local') conceptual bias. None of the authors ever take into consideration the 'mentalite' of the region, and project over and onto this mentalité their own cultural and professional norms.[53]

This gap also applies to studies looking at technology transfers, which are mainly economic analysis. For example, while Elias Guiterrez's *Factor proportions, technology transmission, and unemployment in Puerto Rico* is certainly an outstand-

ing piece of work, it does not consider 'culture' into its methodological formula. It's main purpose was to understand the impact of technological transfers upon employment—despite the fact that the island per capita income had dramatically increased, unemployment figures had not lowered as one would have expected. The study was the author's Cornell thesis, and was consequently published as a book. Factor price ratios, negative elastic value substitution, and capital output coefficients were considered, but the internal world of man was not. Henry Dietz's *Economic History of Puerto Rico*, is more of a factual history than an economic analysis. Yet while he does allude to the very interesting work of Marshall Sahlins ('stone age economics'), culture plays a negligible role in his work.[54]

This is not to argue that such studies should have necessarily included the highly ambiguous role of culture, but rather that its function has not been studied with respect of scientific and technological transmissions from one region to the other. Certainly, men should be limited by the norms and standards of their discipline, and can only do so much research in a given time. Specialized studies as these do much to elucidate different aspects of this history, and provide supporting 'pillars'. Nonetheless, it has not asked how the native culture played a role and dynamic in these processes. The same is true of important studies as Headrick's with regard to colonial technology transfers;[55] although culture is one of the underlying contexts, it is never fully elucidated or brought out. That they entirely fail to include such a topic makes such studies liable to the greatest crime of all—cultural imperialism. While certainly these writers have the best interest of the local individual at heart, others less favorably disposed could use such analyses to prove highly damaging points (culturally speaking). Economic history is damaging not so much for its intent, but rather from its entire perspective in that it usually defines man solely as an 'economic actor' rather than a 'cultural being'; as such one often overwhelms the other when really man is but a self-defining being (both, one, or neither).

It is highly unfortunate that studies or histories who do include culture, either fail to consider 'scientific culture' or do not exactly get at the intimate and subtlety of 'mentalité'. Fernandez Mendez's *Historia Cultural* bypasses the issue in the shift of worldview between the two regions. Jose Luis González, a Puerto Rican thinker who had lived in Mexico in the latter part of his life, was every insightful with regard to the internal world of the Puerto Rican, but entirely bypasses such a thing as a scientific mentalité. For him, culture alludes to things more stereotypically akin to things such as music rather than 'science' (very broadly speaking). Henry Wells, who does study the impact of culture, defines it more as inhibitory behavior patterns to modernization rather than to the actual

scientific mentalité of the society. As such, his study is more akin to Foster's studies who define traditional culture along the lines of 'fatalistism', or Lipsett's who inquires into religious influences on economic behavior.[56] Implicit in this definition is a Protestant ethic frame of judgment which emphases 'production' as opposed to the intellectual realm of man. Thus, while Puerto Rican thinkers do not usually consider science within the cultural realm, American scholars who do include it within industrialization studies fail to get at what its cultural makeup and function. In both cases, the study of a 'scientific mentalité' as a way of looking at the world and particular belief systems of the world is entirely bypassed once again.[57]

Again, this is not to suggest that studies are not appropriate, because they certainly do describe aspects of 'internal culture', but merely to point out that they do not strictly deal with this culture itself as a belief system. Studies that do, however, tend to be too polarized and also analyze this thought not within the context of 'scientific' belief system, but rather within religion. 'Liberal' scholars as Joan D. Koss, later Koss-Chiono, do write about the prevalent role of African influences in medicine—more specifically of the prevalence of spiritualism in the island. Yet we may note that similar to other writers, this is a very polarized notion of culture which alludes to it as the countries which contributed to its origin (Spain and Africa) rather than the region itself where unique cultural forms (Puerto Rico) and where individuals' own identity were formed. Koss also goes to the extreme of tending to give more legitimacy to spiritism than should be accorded to it by a scientist (as a psychiatrist, she studied medicine). While her article shows this bias to a much greater degree, its bias in her book is 'toned down'. The first sought show that spiritism would have eventually developed into it more organized and socially recognized system of belief; it was 'prematurely' cut down with occupation by United States occupation.[58] Her book is interesting in that it sought to understand the psychological function of spiritism. Clearly more within the line of 'medical anthropology' than traditional history, she relies on oral interviews primarily for her book (her article had been more 'historical' and based on written documents). Yet ironically, that her work is so affected by psychiatry, it also fails to consider the impact of cultural dynamics. In contrast, Mario Nuñez Molina's article, despite its brevity, is much more historically interesting. He shows that the cultural proximity between the spiritist and the patient, in contrast to that between the patient and psychotherapist, did much to make spiritism an attractive option for health seekers.[59] Although Koss does review some Puerto Rican history, her study primary contextualized itself within a very

static and 'individual' centered world rather than looking at the person as a historical/culturally defined agent.

Culture is also indirectly 'addressed' by other writers. Arana Soto had a great diversity of publications, to such an extent that they stretched outside the scholarly realm into the literary one. He was a prolific fiction writer, in both prose and verse form.[60] If one were to try to reconstruct the culture of the island, his fictional works might do much to elucidate its mentalité, and should possibly be consulted. He also wrote about the relative lack of racism in the island; or in other words, about some of Puerto Rico's unique cultural forms of race relations. Simon Baatz, a British scholar, is very adept at putting a great many pieces of information together. His "Imperial Science and Metropolitan Ambition" certainly falls within the 'leftist' scholarship, and tries to show that science in the island was dictated more by U.S. interests than regional ones. This is a similar stance taken by Ramirez de Arellano writing in her article about the formation of the School of Tropical Medicine. They both argue that Puerto Ricans had little agency in the formation of such institutions.[61] Ironically, Baatz does not write about local scientists but rather about foreign ones. It is difficult, if not impossible, to give "agency" to anyone whom is not being studied directly. One should also note that both of these writers rely on U.S. sources and very few on local sources produced.[62] Quevedo is never cited by Baatz or Arellano, despite the fact that he and Arana Soto present a great deal of evidence with regard to islander "agency". Other local island sources such as the *Ensaladilla de Recuerdo* suggest that the school of Tropical Medicine was formed as a result of the initiative of men such as Antonio Barcelo.[63] Ironically, the very persons who are trying to defend locals from U.S. aggression implicitly take away more "agency" from the historical actor than what they actually had.[64]

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Regional histories of science provide unique opportunities for the historian of science. To remind the reader, they are to be distinguished from more traditional histories of science in that the second primarily seek to trace intellectual developments which ultimately contributed to contemporary science, while the criteria for inclusion within regional histories of science are principally geographic. Dijksterhuis's classic would be a typical example of the first, while most anthropological work would obviously be typical examples of the second. Since traditional histories of science would exclude much that was irrelevant, regional histories of science can 'pick up the residue' to more adequately understand how bodies of

knowledge relate not only to their social structure, but to 'mainstream' patterns. It should be noted that such a characterization would be applicable to certain contexts and timelines, and that each individual region (of science) always operates according to the demands of its own realities. For example, Australian aboriginal science cannot be considered as a part of Western patterns of thought; their relatively isolated existence in the desert meant as well independently developed knowledge systems. Similarly, the principle applies to regions which were more closely linked to the 'Western world' but which were primarily operating according to their own internal patterns—Latin America during much of its colonial history, and until relatively recently in historical time would be examples of such.

Yet when such regions meet each other and 'overlap', these instances also provide new challenges to historians of science (and of Latin America). Puerto Rico during the first half of the twentieth century is a wonderful example of such a schemata, but it is a theme which unfortunately has not been analyzed up to date. With a strong Spanish heritage and an African ancestry which was subsumed by a Catholic culture, its incorporation into the 'American federation' brought to the island more advanced patterns of knowledge and production. The differences of assumptions between 'anemia' and 'hookworm' in Ashford's experience are but slight indications of much greater intellectual shifts underlying the region, like the small observed tip of an immense unobservable iceberg. The changes have been rather fast, and whether there is enough existing evidence to trace such changes remains to be seen. Nonetheless, despite the importance of the topic, it has not been studied by historians of science, neither those living in the island or abroad. Similarly, it has been passed over by science policy-makers, local or 'foreign'.

The general historiography of science in P.R., from U.S. standards, is remarkably low. The same might be said for many of the histories of science written of Latin America; different standards of analysis and presentation of evidence exist in the 'two cultures'—north and south American. Whatever the reasons might be for this broader pattern,[65] certainly the means available—lack of evidence, time, know-how—has limited the island's scholarship.[66] Rather than showing a pattern of continual inter-generational renewal, each new generation in the island approaches different topics leaving the works of previous generations unaffected. The old remains very useful, despite its obsolescence of technique, which in turns lead to a consequent 'fossilizing' effect. Although Rigau-Pérez is the most sophisticated historians of science up to date, even more so than the work of Juan Bonnet Jr., Rigau's work in no means makes obsolete Quevedo-Baez's 'studies'. The

latter provides a foundation for consequent research, part of whose importance lies by his compilation of primary material, and is suggestive that new syntheses are highly appropriate at this time.[67] The old an the new viably coexist with each other in the historiography, unlike much of U.S. scholarship where there is an actual 'overcrowding'.[68]

However, that there is not enough of an inter-generational renewal means that losses of historians such as Bonnet result in tremendous blows to the historiography of science in the island. This is due not so much to the fact that they will bring with them new methods, but just because they will not continue the research in the first place. They are not able to train others, to diffuse knowledge of the history of science, and in turn, to a 'self-generating' force within the discipline. There are other problems, however. The lack of a knowledgeable person leads to many follies. While visiting the library of the Colegio de Ingenieros y Agrimensores in 1994, important historical material was mistreated out of sheer ignorance. The collections of their magazine, which includes highly significant material with regard to the history of technology in the area, was treated as if it were an ordinary "Time" magazine. Stacks of cards, which had years before been carefully prepared and which indexed all of the articles in the archives's magazines, were being used as 'scrap paper'—this is what I would call an excessive waste of human effort and historical capital. The reason for this egregious behavior is that the administration of such a library had been transferred from the Association to the Department of Public Education; the main reading room was even being used as a reading room for children with toys and children's books. Hard to believe, but this sad and deplorable incident is perhaps typical of the periphery where the local (Puerto Rican) is undervalued.[69] Historians of science and historians need to legitimately reclaim important historical material and to reassert their own social roles. If they don't, no one else will.

ENDNOTES

[1] These factors have also affected local hiostories, and cannot be so casually dismissed as UPR historian Mayra Rosario has done. Claiming that 'historians merely did not look that way' for various decades raises more questions than it answers. Other claims, such that there was technological debates in PR newspapers of the nineteenth century also do not refute the claim, given that there was not tangible outcome as a result of the these discussions. If, despite all debate, nothing was invented or discovered, this counts for nothing in the annals of science.

[2] The rampant crime wave was a key social concern during the decade of 1990.

[3] On a policy level, it is incredible to learn that policy assessments have not been traditionally incorporated into formal structures, until they had been studied by Puerto Ricans themselves. One might legitimately argue that while the island's uncertain status places the scientific context of on the island in a very indefinite status as well, it provides for a unique perspective with regard to scientific and cultural change.

[4] David J. Hess, *Spirits and Scientists: Ideology, Spiritism, and Brazilian Culture* (University Park: Pennsylvania State University Press, 1991); Sandra L. Graham, *House and Street. The Domestic World of Servants and Masters in nineteenth Century Rio de Janeiro* (Cambridge: Cambridge University Press, 1988).

[5] If so, there would be no scientific innovation. Newton and others obviously were innovators not because they were limited by existing knowledge base, but rather because they stretched beyond its boundaries (or expanded these boundaries).

[6] Traditionally, the opposite is argued, such as that flows of knowledge stem from the top (elite) and downward. This idea is not disputed for the Western world. Rather what is argued that the common knowledge base of a community establishes some of the parameters under which elite knowledge develops. In the study of the P.R. science by the NSF made this point. Note also the case of Guatemalan president who was fired as a result of his erratic behavior this last year.

[7] In many ways, George Basalla implicitly assumes this model when he discusses the diffusion of western science. He argues that after nations have reached a certain peak, they are self-propelling. Yet this does not consider that development of science occurred differently in different historical epochs-nations today not only have to acquire basic understandings but also complex and expensive technologies, thus making it that much harder to be self-moving. Ironically then, Basalla's model is highly ahistorical in its assumptions, and takes up an 'independent' framework as well. The issue of but a minor stepping stone in his argument.

[8] Obviously nations are not people and 'do not give up'. If truly interested, will constantly be trying to acquire those things which the 'other has', thus across generations, goals can be pursued.

[9] Elena Diaz, Yolanda Texer, Hebe Vessurri, et al., *La ciencia periferica: ciencia y sociedad en Venezuela* (Caracas, Venezuela: Monte Avin editores, 1983).

[10] For example, one of the reasons why Arabic world did not get scientific revolution, was because it was affected by its own internalization of religion. If not in accord with religious doctrine, scientific truth was discarded.

[11] Basil Davidson. *The Lost Cities of Africa* (Boston: Little, Brown, & Co., 1959).

[12] See for example essays in Don Bates, ed. *Knowledge and the scholarly medical traditions* (Cambridge: Cambridge University Press, 1995).

[13] There is the related problem of relating innovations within national contexts to innovation within global contexts, a very tricky issue which varies greatly with regard to time period. While in our modern world scientist in Australia are expected to follow the leading lines of research wherever it may be (U.S. or Europe), certainly intellectual innovations in Egypt visa vie the Aztec empire cannot be considered within the same framework because there was no communication between the two regions. In the latter case (Egypt/Aztec), the independent model applies rather appropriately, but becomes problematic when looked at in our modern interdependent world with global communication systems.

[14] The time reference marker for the essay is 1997.

[15] An example would be George Sarton's work in the first half of this century. I had ran across some old histories of medicine from the 1930's, which were rather encyclopedic collections of events and dates without any historical interpretations. Yet this is not to say that all older work was obsolete. the 1900 book that I read, had very modern and relativistic views of scientific progress, especially as to how scientists (and all men) are affected by the theories they hold—it biases the way they view the world and the kinds of experiments they test.

[16] Consult Sandra Harding, ed. *The "Racial" Economy of Science: Toward a Democratic Future* (Bloomington: Indiana University Press, 1993).

[17] Which is really a slower rate of growth rather than actual 'stagnation'.

[18] science, technology, medicine.

[19] Their primary works are the following. Manuel Quevedo Baez. *Historia de la Medicina y Cirugia de Puerto Rico* 2 vols. (San Juan, P.R.: Asociacion Medica de

Puerto Rico, 1946). Salvador Arana Soto, *Los desafios y los medicos Puertorriquenos y otros articulos afine*s (Barcelona: Topografia Miguza, 1969); *La oftalmología en Puerto Rico hasta el 1898* (Barceloa: Artes Graficas Medinaceli, 1977); *La sanidad en Puerto Rico hasta 1898* (Barcelona: Artes Graficas Medicaneli, 1978); *El dentista y el practicante en Puerto Rico hasta el 1898* (Barcelona: Artes Graficas Medicaneli, 1979); *Quince Años de Actividad Cultural en la Asociación Médica de Puerto Rico* (Barcelona: Artes Graficas Medicaneli, 1977); *La academia de medicina de Puerto Rico: 1915-1921* (San Juan: Academia Puertorriuena de la Historia, 1979); *Historia de la medicina Puertorriqueña hasta 1898* (San Juan: Artes Graficas Medinaceli, 1974). Jose Gabriel Rigau-Pérez, "The Introduction of Smallpox Vaccine in 1803 and the Adoption of Immunization as a Government Function," *Hispanic American Historical Review* 69, 3 (August 1989), 339-423 ; "Las expediciones botanicas de Sesse (1796), Baudin y Ledru (1797), y Plee (1823)." *Homines*, 11, 1-2 (march 1987-Feb. 1988), 8-33; "Surgery at the Service of Theology: Postmortem Cesarean Sections in Puerto Rico and the Royal Cedula of 1804." *Hispanic American Historical Review* 75, 31 (August 1995), 377-404.

[20] His actual statement, cited in first page, was that history should not be colored by the present-a very valid point. History is often seen to elucidate the present, and while important, it can easily distort the past which should be seen in its own light.

[21] Obviously, there is no need for footnotes if citing block quotes from text, which is also mentioned in the main body of the 'essay.'

[22] Arana Soto, Salvador. *Los desafios y los medicos Puertorriquenos y otros articulos afines* (Barcelona: Topografia Miguza, 1969), chpt. 11; Ramirez de Arellano, Annette B."Columbia's Overseas Venture: The School of Tropical Medicine at the University of Puerto Rico," in *Medicine's Geographic Heritage* (Dec. 5, 1989), 25-40.

[23] Arana Soto obtained his BS at Harvard University, later to study medicine in France between 1930 and 1935. His positions included 'Jefe de los Hospitales de Tuberculosis', Director Medico del Fondo de Seguro del Estado, and was at one point in the faculty at Northwestern University. Rigau-Pérez graduated from Harvard Medical School in 1975. His positions included Chief of the Epidemyology Section of the Centers for Disease Control, and had been a guest researcher at the Centro de Investigaciones Historicas of the University of Puerto Rico. Juan Bonnet. Jr. obtained his BS in chemical engineering from the University of

Michigan in 1961. He worked at the Autoridad de Energía Eléctrica, who then sent him to train at the Argon National Laboratories for nine months at Chicago. He returns in 1962 to take part in the construction of a nuclear facility at Rincon. He then goes to Michigan again to obtain his Ph.D. in Nuclear Engineering, and returns to the island in 1971. At the Central Bonus (nuclear facility), he worked as a chemist and supervisor of 'seguridad nuclear' overseeing procedural safety. Although he certainly had the scientific expertise to write histories of science, he was unable to raise the most important historical themes in his writings.

[24] Also, the political status of the island is very uncertain, and statehood is by no means the 'default' position of the issue either in the island or the U.S. Thus it would not be in the U.S. interest to maintain official records 'abroad' should that be the eventual outcome.

[25] Apparently its first name was more appropriate of the contents in the work—*Inventario Historico de Ingenieria e Industria de Puerto Rico*. See his "Agradecimiento". Luis F Pumarada O'Neil. *Breve Historia de las obras de Ingenieria de Puerto Rico* (San Juan, P.R.: Colegio de Ingenieros y Agrimensores de Puerto Rico, 1980).

[26] The *Obras de Ingeniería* is perhaps the only comprehensive 'history of technology.

[27] Juan A. Bonnet Jr. "El Desarrollo de las Ciencias Naturales y la Política Científica en Puerto Rico," *Revista del Ateneo Puertorriqueno* 3,7 (June-April 1993), 30-9; Victor de Leon Diaz. *La Administración de la ciencia y la technología en Puerto Rico: analysis exploratorio* (masters thesis, University of Puerto Rico, 1984) ; Hector Acosta Soto. *La planificación de una política científica y technológica para Puerto Rico* (masters thesis, University of Puerto Rico, 1992).

[28] Alluded to by Chilean historians such as Claude Gay in response to critiques of his work, wanting more 'laws' and 'patterns' in that history.

[29] Consider for example Adam Bede's *History of England* which is preciesly this—a series of names, dates, and description of events.

[30] Juan Bonnet Jr. and Jose R. Escabi Pérez, eds. *Ciencia y Política en Puerto Rico* (San Juan, P.R.: Ateneo Puertorriqueno, 1990), and *Ciencia y Technología en Puerto Rico* (San Juan, P.R.: Ateneo Puertorriqueno, 1988). There is some interpretation and not just solely a list of facts. Bonnet for example explains that

actual investment in science is. 05% (most nations usually invest about 2-3% of GNP), and also explains that U.S. finding for minorities has done much to improve Puerto Rican training. Nonetheless, these works cannot be considered to be genuine interpretation, but rather laying some of the fundamental legwork for such interpretations. The continual 'factual' approach, however, is certainly very predominant in medical articles. see Angel Lugo Mendez, "Comentarios sobre la tesis doctoral de Ramon Emeterio Betances." *Revista/Review Interamericana*.18, 3-4 (Fall-Winter 1988), 109-111; Jose C. Román de Jesus, "La Historia de las Ciencias Médicas en Puerto Rico," *Revista del Ateneo Puertorriqueño* 3,9 (Sept-Dec 1993), 152-160.; Juan P. Iterregui Pagán, "Antecedentes de la medicina hasta la llegada de Betances," *Revista/Review Interamericana* 18, 3-4 (Fall-Winter 1988), 77-88. This issue has a number of other articles that also reflect the same problems of 'factual repetition.'

[31] It should be noted that Rigau does not seem to be guided by themes already established by the historical profession. Despite the importance of the particular topics, he seems to be concerned primarily with professional intrusion into medicine—if not by Spanish representatives, then by religious officials. While the theme is innovative with regard to the U.S. discipline, well developed aspects of standard histories of science still need to be built up for the island's own history.

[32] That island libraries are generally of poor quality with regard to the scientific literature suggests that a synthetic study would be appropriately conducted in U.S. research institutions. Here, utilizing both Spanish and English sources, one would be able to construct basic historical infrastructure that one would not if one were working solely with the island's archival resources. It is an important historical vacuums. One also should not project the norms of U.S. history, where there are too many secondary/synthetic sources to the point of overcrowding and slight distortion, requires again the pursuit back to the primary source. The level of historical research of science in Puerto Rico is far less researched.

[33] When I was there in 1994, it was curious to note that almost no such books were being sold. Borders had not yet established its presence there.

[34] Quevedo., ii, 156-8.

[35] Bailey K. Ashford. *A Soldier in Science: The Autobiorgraphy of Bailey K. Ashford* (New York: William Morrow & Co., 1934).

[36] Although they might be intuitively aware of them.

[37] Rafael Rodriguez-Molina, "Del Esprue en Puerto Rico": Ayer Y Hoy…. Bailey K. Ashford, Hombre e Investigador" *Boletin de al Asociacion Medica de Puerto Rico* 56,2 (Feb. 1964),31-50; Ana E. Maldonaldo, "Hookworm Disease: Puerto Rico's Secret Killer" *Puerto Rico Health Sciences Journal* 12, 3 (Sept 1993), 191-196; William H Crosby, "The Hematology of Hookworm Disease, Contribution of Bailey K. Ashford" *Puerto Rico Health Sciences Journal* 4,3 (Dec 1985), 113-119.

[38] Ashford, op. cit. (31), chpt 1.; Hagedorn, Hermann, *Leonard Wood: A Biography,* vol 1. (New York: Harper and Brothers Pub., 1931).

[39] See Arana Soto, *Desafios*.

[40] The Bible is generally considered as an early version of a 'history', profoundly influencing western scholarship.

[41] I am here alluding to the Afro-american writer, not the television series!

[42] Aida Negron de Montilla, *Americanization in Puerto Rico and the Public-School System, 1900-1930* (Rio Piedras, San Juan: Editorial Edil, Inc, 1970), 96; Ian Court, *In-Service Training Problems in introducing a Foreign-based Science Curriculum into Puerto Rico* (masters thesis, University of Illinois, Urbana-Champaign, 1972), 71-6.

[43] An example would be that of Rafael Hernandez Colón who enacted a 'Spanish only' law in 1991, and was consequently awarded a medal by Spain for his defense of its culture. The law, however, had tremendous repercussions on administrative procedure, by significantly increasing the costs of transactions, and it was later repealed.

[44] Committee on the Scientific and Technological Base of Puerto Rico's Economy, Division of Engineering, National Research Council, *Science and Technology in Support of the Puerto Rican Economy* (Washington D.C.: National Academy of Sciences, 1967), 46.

[45] Court. , passim.

[46] Office for Opportunities in Science, American Association fort the Advancement of Science. *Puerto Ricans in Science and Biomedicine: a report of a conference* (Washington D.C.: AAAS, 1981), 41.

[47] Ibid., 48, 7.

[48] Warner was the Chairman of the NAS study, 45.

[49] Court is actually British, yet his question is a very 'American' issue to raise, very psychologically oriented. While he certainly does consider 'culture'; it is at a superficial level. His recommendation that the teachers write textbooks themselves, is a very British idea that would not necessarily resolve the problem with regard to cultural nuances—(something which can only be understood through a historical analysis). His is not an analysis of cultural history, but fall more within the domain of a static 'psychologism'. Like Newton's physics, it operates within a never changing framework.

[50] Court, op. cit. (40).

[51] AAAS, 45.

[52] Ibid., 40.

[53] Yet the failure to consider historical dynamics render the conclusions and suggestions by some policy analysts as unrealistic as the situations which they seek to remedy, even if we do not consider and include truly sensitive cultural analysis. For example, George Pytlinski recommended that an industrial research park be established in Puerto Rico, as it was in North Carolina. As in the latter, it would create a number of linkages not only scientifically but throughout the economy, and thus also helping to rejuvenate it. in Bonnet, Jr., 1990. A serious problem with this analysis is that it presumes the same bibliographic facilities in the island than in north Carolina; language problems would also seem to be an obstacle to such a project.

There is a similar problem with most local policy studies. They do not seem to emulate the 'scientific' spirit of the U.S. study. Rather than analyzing the state of science and its structure as it currently exists (i.e. dry-data statistics, number of students, number of schools, number of graduates…), they are mostly claims as to what should be done. As such, they reflect a more Spanish spirit than an north American one. One study curiously includes a statement of order by the (ironically) 'state' party governor Pedro Rosello (PNP, as opposed to commonwealth party, PDP). It reads more like a Spanish monarch's commandments.

[54] Elias R.Gutierrez, *Factor Proportions, Technology Transmission, and Unemployment in Puerto Rico* (Hato Rey, P.R.: Master Typesetting of P.R., 1977); James L. Dietz, *Economic History of Puerto Rico: Institutional Change and Capitalist Development* (Princton: Princeton University Press, 1986), chpt 1.

[55] Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (New York: Oxford University Press, 1988). The same might be said of Gwyne's work. see Robert N. Gwyne. *Industrialization and Urbanization in Latin America* (Baltimore: Johns Hopkins University Press, 1986).

[56] Eugenio Fernandez Méndez, *Historia Cultural de Puerto Rico, 1493-1968* (San Juan: Ediciones 'El Cemi', 1968); Jose Luis Gonzalez. *Puerto Rico: The Four Storeyed Country and other essays*. transl. Gerald Guinness. (Princeton: Marcus Wiener Publishing, Inc., 1993); George M. Foster, *Traditional Cultures and the Impact of Technological Change* (New York: Harper & Brothers, 1962); Henry Wells, *The Modernization of Puerto Rico: A Political Study of Changing Values and Institutions* (Cambridge, MA: Harvard University Press, 1969); Seymour Martin Lipsett. "Economic Development and the Business Elites," in Seymour Martin Lipsett and Aldo Solari., eds. *Elites in Latin America*. London: Oxford University Press, 1967.

[57] Clarke, who studied U.S./P.R. relations at the turn of the century also fails to include such an analysis. Although more nuanced in that it included more information on island actors, it was also very 'metropolis' centered. see Truman R. Clark, *Puerto Rico and the United States, 1917-1933* (Pittsburgh: University of Pittsburgh Press, 1975).

[58] As such, there is clear 'projection' of political arguments—that Puerto Rico could have been an autonomous nation had not the Spanish American war intervened—a projection which she either fails to notice or explicitly recognize. This is a standard Puerto Rican belief that perhaps should be questioned. as Cuba, she would have been unable to defend herself against foreign aggressors. prior t the war, the was effectively isolated from the world, not only as a result of Spanish colonial policies, but also from the us which did not seek to challenge this hegemony as it was to its own national interest in having a weak European nation controlling it.

[59] Joan D. Koss. "Religion and Science divinely related: A case history of Spiritism in Puerto Rico" *Caribbean Studies* 16,1 (April 1976), 22-43; Joan D. Koss-Ciolino, *Women as healers, Women as Patients: Mental Health Care and Traditional Healing in Puerto Rico* (Boulder, CO: Westview Press, 1992); Mario A. Nuñez Molina, "Therapeutic and Preventive Functions of Puerto Rican Espiritismo," *Homines* 13-14, 2-1 (Aug. 1989-1990); 267-76.

[60] For his fictional work, consult the following: *Ultimas Prosas y Demas Desatinos (Versos)* (San Juan: Editorial Mairena, 1983); *El Signo, El Ademan, El Gesto* (San Juan, P.R.: Coleccion Euterpe, 1986); *Primeros Versos* (San Juan, P.R.: 1981); *Maldita Luz, y Otras Divagaciones* (Barcelona: Artes Graivas Medicaneli, no date.); *Indescifrando (versos)* (San Juan, P.R.: Editorial Mairena, 1982); *Estampas Puertorriqueñas* (Barcelona: Artes Graficas Medinacelli, 1979); *Entelequias Enlatadas y otros escritos mas o menos satiricos en prosa y en verso* (Barcelona: Artes Gráficas Medinaceli, 1977); *Don Quijote en Santurce y otros relatos* (Barcelona: Artes Graficas Medinaceli, 1977); *La Camisa Volantona y otros cuentos politicos* (Burgos: Imprenta de Aldecon, 1969); *Aguas Desnudas y Otras Intemperies* (Barcelona: Artes Graficas Medinaceli, 1976).

We may superficially note two interesting things. First is that his publications during the 1970's were published in Spain (despite the fact that the fist page gives the impression that they were published in the island). In the 1980's there was a shift of the publishing center to local island agencies. Perhaps he was criticized for it, and by thus transferring to local industries, helped promote in some manner its economy. Another interesting thing to note is the lack of specialization in his writing. He was both a 'prolific' (more compiler with regard to history) writer of history and fiction, and in many ways is also typical of Latin American scholars of the nineteenth century, such as Chile's Jose V. Lastarria (positivist) who was a historian, fiction writer, and politician.

[61] Annette B. Ramirez de Arellano, "Columbia's Overseas Venture: The School of Tropical Medicine at the University of Puerto Rico," in *Medicine's Geographic Heritage* (Dec. 5,1989), 25-40; Baatz, Simon, "Imperial Science and Metropolitan Ambition: The Scienific Survey of Puerto Rico, 1913-1934," in *The Scientific Survey of Puerto Rico and the Virgin Islands: An Eighty-year reassessment of the Island's Natural History*. ed. Julio C. Figueroa Colon (New York: New York Academy of Sciences, 1996), 1-17.

[62] Ramirez de Arellano's work is based mainly on the archives at Columbia University, which took a very important role in the formation of such a school.

[63] Pablo Morales Otero, *Ensaladilla de Recuerdo* (San Juan: Biblioteca de Autores Puertorriquenos, 1966).

[64] There are other problems. In these works, the motivations underlying Columbia University decisions are never addressed. (Upon this removal, the island's government assumed this responsibility and focused its agenda upon the creation of doctors for the island rather than primary research.) The Puerto Rican government did not necessarily always act with consistency and trustworthiness. See Quevedo, vol. ii. In this respect may have lived up to the infamous Gov. Reily's criticism of islander politicians. See Clarke, passim. One very important issue with regard to levels of scientific expertise and its potential impact on Columbia University's decision to withdraw funding are never raised. One might say that such studies do a disservice to 'local' and 'foreign' actors, regardless of whom we might categorize in each.

[65] Glick's review essay in the CHLA points out that there are few autobiographies or personal information with regard to scientists in Latin America. this might seem to be due to the high level of public criticism that exists in the region. U.S. political culture, although perhaps not nowadays, reveal a much more willingness of 'honest public discussion'. Many southern American cultures view the home as the place of privacy, and contribute less to the general social welfare.

[66] Some of these factors would also be true of other Latin American regions.

[67] Because none really exist.

[68] In the latter, there is the 'mood' that the latest historical research is the best (a rather ironic proposition). This attitude in turn leads to the throwing away of valuable older material just because it is older, but this confuses the age and method of the research for the information presented (which might be highly valuable, historically speaking).

[69] While this may not be as bad as the burning and discard of old books, its effect is nonetheless the same. In both cases, ignorance as to value and content of material leads to the perception of insignificance, and hence ill-treatment.

3

State-formation and Emancipation in Cuba and St. Domingue: A Historiographical Comparison

Binational Comparison

In order to make appropriate historical comparisons, Hall advises us "to narrow the choice to colonies which were in every respect as similar as possible."[1] Following this criteria, the emancipation processes of St. Domingue in the later eighteenth century and Cuba in the nineteenth provide highly adequate examples, which Hall herself compares. In their respective time periods both countries were 'pearls of the Antilles', that is to say highly productive island monocultures of sugar based on slavery. There are other characteristics which render comparisons favorable. Yet to make a truly fair comparison, one has to analyze events which had similar impacts. That the Haitian emancipation process (revolution) led to independence and state-formation means that, to make a proper analysis, one has to compare it not only to Cuban emancipation, but to Cuban independence as well. Only when this is done can similar aspects be charted and compared; otherwise, elements relevant to the study are left out leaving a lopsided 'equation'.

Our approach is justified by its results. When emancipation processes on both island were both compared, they could not have been more different, in this sense providing more of a contrast than a comparison. The emancipation process in Haiti was led from below. The success leadership consisted primarily of slaves likely motivated by the ideals of the French Revolution which trickled down, although Fick disputes the claim, as well as by mulattos. Like the French Revolution it was violent, bloody, and left only dictators in its wake. One of the primary military tactics utilized by the slaves was that of destruction—by destroying plantations, sugar crops, cities, and the economy, invading armies would have nothing upon which to subsist. Similarly they relied upon a certain climatization—the

effects of yellow fever to European bodies was also employed as a military tactic. The rainy season was the scourge of Leclerc, Napoleon's invading general, and his armies. Contrasted to this, the emancipation process in Cuba was rational, peaceful, and controlled by the white leadership. It rational character is reflected in its gradual and step-by step controlled approach. The Moret law at first eliminated the elderly and the young from the slave category, although often retained in services. As slave labor was being transformed, immigrants were being imported to make up for the likely differences in available manpower. Slaves and mulattos had no say of the entire process except through the ineffective courts and juntas they were given within the preestablished system. Production continued at its normal pace. The two processes of emancipation could not have been more different—providing contrast rather than comparison

Yet when Cuban independence is brought into the picture, similarities are once again reintroduced into the comparison. Immediately we are drawn to the afro-Cuban element which leads the revolution and which employ simple destruction as one of its tactics—they burn down plantation and cities to get rid of the Spanish military and affect their supplies. The negative portrayal of the Cuban *independentista*, which so horrified American audiences who had made comparisons to their own Revolution, must have also been applicable to the Haitian slaves rebelling against their former masters—they were both ragged, wore poor clothing, and dirty due to the conditions and tactics of war. Yellow fever and tropical diseases also play a role; the United States wanted to reach an agreement before the beginning of the rainy season. Similarly, the role of foreign powers trying to maneuver to acquire rich colonial territories is reintroduced, something which had been absent from comparison to the Cuban emancipation process; England did play a role in getting Spain to emancipate, but it was never one of purposefully trying to acquire Cuba. With Cuban independence, we see the same appeals by foreign powers to acquiesce and play into indigenous actors. Just as England had tried to woo Toussaint Lourverture into reestablishing a colonial relation with her, which Toussaint wisely ignored, the United States wooed Gomez and Garcia into acquiescence by their acceptance of moneys and political positions. Immediately the irrational character of Haitian revolution is reintroduced into the Cuban scenario—we find the constantly changing policies of the metropolis in the picture. Just as France wavered in its commitment to abolition as a result of changing governments from the Directory to Napoleon's dictatorship, the United States wavered in its commitment, at first to aid Spain, to secure Cuban independence, and then to acquire Cuba for herself. The true

comparison between the two island processes of emancipation lies at the inclusion of Cuban independence.

The point being made here is that history does affect historiography. Histories of the St. Domingue emancipation acquire a highly static character, and a military flavor because emancipation processes there led to independence. The histories thus primarily describe how generals won battles, and how metropolitan nations used the political intrigues to their favor. Contrasted to this, Cuba's historiography is split into two—that of emancipation and that of independence. As a result, histories dealing with emancipation describe its rational economic character and is thus based on a wholly different set of evidence and principles of argument than those of Haiti. Scott and Fraginals thus analyze regional differences and economic factors that are only slightly touched upon by Haitian scholars such as Ott and Fick. In this sense, the character of the historical writing reflect the nature of the history—whereas Fick at times is a bit too detailed on the sadistic horrors of war, Scott relies on a more nuanced regional demographic study. When Cuban independence is incorporated, the similar set of premise is then reintroduced into the study—military battles, political treaties, and international pressure—as reflected in Pérez's study of Cuban independence.

It might be pointed out that what is perhaps missing from studies of emancipation processes in Haiti are more rational-economic analyses. For example, what is a slave society to do when, after its successful revolution, it wants to rejuvenate its economy. One of the most salient topics is the murder of Moyse, Toussaint's adopted nephew. After a successful rebellion yet before treaties with France had been established Toussaint, in order to rebuild the economy, set up an labor force which seemed to reestablish the slave social system. Workers were tied to the plantations but could not tend own crops, apparently to reintroduce sugar as an export crop. Moyse objected to this and Toussaint had him shot. From the point of view of the slaves, it did seem like Toussaint had reverted. Yet without the technology that had become available in Cuba, one wonders how the economy could have started back up again after its destruction.[2] This issue, along with the murder of Moyse, is not even mentioned by Steward, one of the early writers of the Haitian Revolution. Though Ott and Fick both address the issue and Fick expands it to a greater degree, more detailed studies could be made and incorporated. Would it have been possible to establish a 'tribal' system as existed in Africa without suffering military/political threats from foreign metropolitan nations? This seems unlikely given constant foreign intrusion. How then would it have been able to alleviate slavery and slave labor without affecting national security

and its consequent requisites (i.e. food supply and improved economy)? These important issues have not been addressed by scholars of Haitian emancipation.

If the criteria of our comparison is accepted, such as incorporating Cuban independence, then another issue arises is the characterization of the underclass fighting for their economic and political rights. Whereas Steward makes the mistake of portraying Haitian rebels as people seeking nation building, Pérez seems to make the same mistake of portraying 'afro-Cubans' as modern Americans in a category outside of earlier Latin American independence movements. Both seem to project back 'modern' notions to their social classes. In Haiti most of the workers, due to common 10% mortality rate at plantations and the need to constantly import them, were African of a tribal social origin. The idea that these sought out independence and a form of national identity is hard to believe given their origin. One might argue that state formation was only a unforeseen consequence of seeking freedom within a colonial context—once a colony has abolished the system of labor and its benefits, there is no longer any incentive by the metropolis to maintain the colony.

The "Afro-Cubans" also seem to have been no different from the other Spanish colonies seeking independence. The case is a bit different in that Spanish colonies were economically subjugated by their commercial ties to the peninsula (i.e. designated ports of commerce, and trading only with mainland) whereas Cuba was already freely trading with foreign nations such as the United States. It is rather ironic that many Cuban plantation owners sought annexation with what might be called the new metropolis; perhaps they believed that they would have greater representation given the 'republican' character of U.S. government. But then again, this is no different from seeking representation in the Spanish Cortez just as Creole planters from Haiti sought it in the National Assembly. While it may have been different, it seems to me that the principle they sought—the ability to control ones destiny and reality—was no different from that of the earlier 'libertadores' of Latin American nations.

Haitian Revolution: Internal Comparison

The most widely recognized account is that by C.L.R. James whose *The Black Jacobins: Toussaint L'ouverture and the San Domingo Revolution* is the book recommended both in the *Cambridge History of Latin America* and Skidmore and Smith's *Modern Latin America* (common textbook) above the others.[3] In fact, all other later authors (Ott and Fick) make some sort of comment regarding one or other of his interpretations. Tired of historical narratives where blacks are helpless victims, James wrote the account in an enthusiastic and captivating manner. The

cruelty and infamy of war are vividly shown through his pages. His coverage is wide in that he traces events in Saint Domingue along with those in France as well as France's international relations. The advantage of this view is that one gets a better picture of the motivations behind the actors—Napoleon does not invade St. Domingue at first because of actions in Egypt. Once defeated, he is able to turn more of his attention to the island. James has the ability to combine a number of international events and give the reader a good understanding of how these are interrelated. Contrasted to others, there is more of the individual in the narrative—we learn of the powerful friendship that formed between Levaux, one of the first French generals, and Toussaint who defected to him after his alliance with the Spanish. He portrays their bond with such tenderness that one would have thought them to be long lost brothers.

While good as an introduction to the subject, the book, however is too driven by its enthusiasm and Marxist dialectic thus often failing to have a proper scholarly tone of careful deliberation. James' categories are absolute and do not allow for any shading. "The slaves worked on the land, and, like revolutionary peasants everywhere, they aimed at the extermination of their oppressors."[4] "Slaves presenting themselves to their masters seeking refuge from the devastation of the countryside or merely because they were afraid or tired of revolution, were killed at sight."[5] He is so driven by the need to present slaves as willful rising classes that one cannot live alongside the other. Yet this was not true. From Fick's work we learn of a number of instances where both masters and slaves displayed an certain amount of human compassion towards the other—in one instance saving a planter and his family which Ott also mentions, to one where the master washes the feet of his slaves.[6]

The extent to which he idealizes the slave is that to which he debases the French. Of Barnave, who gave a speech before the French parliament about the realistic dangers of suddenly undoing the slave system, James unfairly writes, "Bourgeois hypocrisy is not seldom the truest wisdom…Barnave was honest but a fool."[7] Yet, Barnave was right in someway—undoing it would have had serious economic repercussion which needed to be considered by affected parties. Toussaint on the other hand is a hero despite of any treachery, or deceit he may have used to acquire power. "As a boy he was so frail and delicate that his parents had not expected him to live, and he was nicknamed 'Little Stick'. While still a child he determined to acquire not only knowledge but a strong body, and he strengthened himself by the severest exercises, so that by the time he was 12 he had surpassed all the boys of his age on the plantation in athletic feats. He could…jump on a horse at full speed."[8] "Before such ability, energy, and charm, Laveaux capit-

ulated completely"[9] Michael-Rolph Troullot is correct in his characterization of the literature as overly laudatory of its protagonists.[10]

James' book contrasts with a contemporary account, *Slavery and the French Revolutionists* (1788-1805) by Anna Julia Cooper.[11] Cooper, an African-American from North Carolina who finished her dissertation at La Sorbonne at the age of 66 in 1925 presents a much narrower scope of the revolution. Contrasted to the current historiography, the book, as the title suggests, focuses primarily on the political relation between Creole elites and the French government. It describes how the moves by colonial planters to obtain votes in France's National Assembly had unforeseen repercussions in the island. Portraying the island more as a province than a colony, Creole elites went to the assembly demanding votes. Not all were of the desire to seek this, such as the Massiac Club, tried to prevent this from occurring. Those who sought votes did so on the basis of both the white and black population. Little did they realize that, if that the number of delegates was based on the black population, this group in turn would be entitled to a vote as well.[12] How the vote would be limited was another matter. Mulattos were actually a very prosperous group in the island. There was also a group of mulatto leaders in Paris at the time seeking representation as well. One of their leaders, Oge, returned to begin a rebellion but was soon captured and executed. Having realized what they had done, these white elites retracted and instead sought out independence. There is description of the three civil commissions of a diplomatic nature sent to the island.

What is perhaps so ironic about the entire book is that, despite the fact that it was written by an Afro-American, the African voice itself is negligible. We never learn what exactly moved Africans to rebel, nor do we get a description of their military battles, victories, or progress. Unlike James, who goes into the economics and some of the international dimensions of the drama, Cooper remains of a very limited scope, principally political and philosophical, and thereby failing to explain much of the revolution. Her aim, though, is not to explain the revolution so much as to view the revolution through the eyes of France. Nonetheless, previous comments still apply. The presumption underscoring black behavior is based on a 'trickle-down' theory stemming from elite thought and belief, something Fick and Ott argues against. Her book at this early stage, however, provided building blocks of later histories.

In 1914 two histories came out dealing with the Haitian Revolution—one by T. G. Steward, *The Haitian Revolution, 1791-1804,* and another by T. L. Stoddard, *The French Revolution in San Domingo*.[13] It would have been useful to have reviewed Stoddard's book given that it is an account from the point of view of the

planter. Incidentally, it was missing from the library and nowhere to be found—likely the result of an offended library patron aroused by the racist content of the book.[14] Consequently, only discuss Steward will be discussed.

As has been stated before, Steward primarily looks at the revolution from the point of view of state-formation. It seems as if the United States was seized with an euphoria over revolution during the early twentieth century because Steward compares the Haitian revolution to that of the United States in much of the same favorable tone as the Cuban revolution was initially seen in 1898. "The Haitian revolution stands alone both in ancient and modern times." He is intent on illustrating the value of freedom in a democracy. "It shows us that swords precede plowshares, and that the spear goes before the pruning hook. It is only after these weapons of war have done their work that they may give place to the instruments of peaceful industry." Little would he know that social chaos would continue throughout twentieth century Haiti.[15]

One of the things that first strike the reader is the difference in the use of quotation. James had included lengthy segments from letters, but Steward goes to the extreme of including a much greater number of documents, including treaties, sometimes without any interpretation. This is common throughout the entire book and negatively affected the narrative flow of the book; some documents should better have been left in the appendix; then again, there is no appendix. Yet one of the advantages of this approach is that the reader is not subtly coerced into any one particular interpretation. For example, he takes up the issue of whether Toussaint did or did not participate in the first rebellion in the north on August 22, something later writes present as settled (he did not according to Fick), or gloss over (Ott). At times the vividness of the past is more clearly revealed; by comparing the letter to the reality, we get to see how Leclerc was purposefully deceiving Toussaint in their early encounter. The advantage of plentiful documentation in the narrative that other authors do not have is that he points to the evidence that conflicting interpretations are based; the reader is then given the ability to decide for themselves.

In early chapters he gives a much more detailed account of demographics of the island for example by explaining why the terms 'petit' and 'grand blancs' were used which other writers (i.e. Fick) skim over (petit blancs worked for grand blancs). Historical nuances thus get lost in later histories. He also discusses why the mulattos of the north played such a minor role in events there—they had been more divided, poor, and controlled by the dominant classes than in the south. Most later writers divide regions by their majorities, thus mulattos are usually only described in sections dealing with the south which was dominated by

Rigaud and his band. Contrasted to James, Steward does not pit black against white and describes the relative amount of racial harmony that existed when relatively equal number of blacks to whites. He also goes into more detail of battles, in particular those with the English. He eloquently presents British aims in their requests of Toussaint—to turn Haiti back into a slave colony just as Jamaica.

One thing Steward seems to overlook is that which Cooper gave so much importance to—the effect suffrage-seeking Creoles had upon blacks. Contrasted to these later writers, he focuses not on the blatant destruction of sugar cane, but rather on events within the cities. Whereas most later writers, even Cooper, discuss the significance of Toussaint's politically maneuver of sending Sonothax and Leveaux back to France as "St. Domingue's representatives" so that they might be out of the way, this issue is barely touched on by him—he does not seem to have understood its meaning. Another significance that he overlooks is that of the impact of the early release of information upon Leclrec's military expedition; if slaves had not known that Napoleon intended to reestablish slavery, Leclerc's mission would have been made that much easier. The fact that they found out spoils any chances he might have had for success. The historiography certainly has improved through the years.

Once again in discussing Napoleon's intentions on St. Domingue he refers to the locals as fighting to establish a republic, something which is very doubtful as previously noted. "He [Napoleon] had formed already the plan of empire; and those good, brave, and loyal republican soldiers like Dumas, who were the companions by whose aid his glory had been created, might not incline so readily to this new purpose…the men who had performed the impossible with him while infatuated with the idea of a republic might not willingly stand and see their idol smashed to pieces."[16] One wonders the extent with which Dumas, a mulatto, wanted to establish a republic; according to Fick, prosperous mulattos in the early stages had more in common with slave holders (mulattos in south were prosperous slave holders) than with blacks. His portrayal seems more of a wishful projection than a historical reality.

It seemed to me that Thomas O. Ott's book, *The Haitian Revolution, 1789-1804*, despite the fact that it is rated below James' is perhaps the most scholarly and balanced in tone, quality, and clarity; I would recommend it above all others.[17] "Even those who have made a study of that upheaval often viewed much of the conflict ideologically, varying from T. Lothrop Stoddard's white racism to C. L. R. James's Marxism. Thus one of the purpose of this book has been to bring the Haitian Revolution into clearer historical perspective."[18] Contrasted to the James' emotive tone, Ott's is succinct and purposeful. For example, the close rela-

tion between Toussaint and Levaux is barely touched upon, and when Toussaint sends him away, no mention is made of the possible bond between them. Similarly the hero-worship found in James is absent from Ott's piece. We also do not find an emotional description of the encounter between Toussaint and his two sons, who had been sent back by Napoleon as a means to persuade the old leader. Contrasted to James (and Steward, Fick), Ott describes military events with much greater brevity; this gives the reader a much clearer grasp of the narrative by not wallowing in insignificant detail. His use of footnote, something surprisingly absent in James (and typical of Steward), is accurate and skillful.

It seems to me that the distinguishing characteristic of Ott's book was its presentism, perhaps similar to Steward's 'republicanist' writing in his own era. By presentism I mean the clear influence of current events and concerns in the historical writing. The corruption and terror of the Duvalier government, Papa Doc and his son, for example, is indirectly addressed on page 133 where Ott discusses the corruption within the military who were carrying out Toussaint's Labor Reform. None of the other writers ever raised the issue of corruption, not even Fick whose book came out after Ott's. Similarly, throughout the book we notice here and there a concern for Haiti's needy relation towards the United States. In the previous page, Ott refers to Toussaint's opening of trade relations to the United States; again none of the other authors raise such an issue and primarily focus on the relation Haiti had with competing European powers as if the U.S. did not exist. The United States, as France and all other metropolitan nations, did not have clear and consistent policies—either toward slavery or their relations with Haiti. "After the end of the Quasi-War and the rise of Jefferson to the presidency, however, Toussaint found both his economic and political relations with America in sharp decline…Toussaint sarcastically asked if the change in administrations had destroyed all the American ships."[19]

The most recent work on the revolution is that of Carolyn Fick's *The Making of Haiti: The Saint Domingue Revolution from Below*.[20] As the title suggests, her aim is to understand the role popular mentality and movements played in the revolution. Contrasted to all other authors, Fick incorporates religious elements into her narrative, in particular the role of voodoo. We learn that a number of leaders had also been religious 'mystics' and priests of sorts who used voodoo to unify blacks in their cause. The meeting of August 14th, where different slaves agreed to revolt, was officiated by Boukman, one of the leaders who dies early in the rebellion, and by a female voodoo priestess. At this meeting, there is a sacrificial ceremony where Boukman also invokes particular deities. Fick quotes the speech, some of which goes as follows,

> The god of the white man calls him to commit crimes, our god asks only good works of us. But this god [Christian] who is so good orders revenge!…Throw away the image of the god of the whites who thirsts for our tears and listen to the voice of liberty which speaks in the hearts of all of us.[21]

Jean Francois, another slave leader, was also " a fervent voodoo adept and kept himself surrounded by houngus, from whom he frequently sought advice."[22] Previous leaders of failed revolutionary attempts such as Makandal, had also used voodoo to win and retain adherents. Voodoo was thus used in the insurrection as a source of personal power and to encourage acts of sacrifice and determination. Descriptions of slave fighting bands at times resemble those of the Japanese during World War II—fearless and highly willing to sacrifice their lives for battle. Slaves would at times shove their arms into cannons erroneously thinking that they were being protected by their talismans.

What do we make of Fick's claims to the role of voodoo? One wonders how great the effective 'protection' of such talismans lasted in the individual mind when confronted with the realities of battle: an arm would be blown off, thus demonstrating that the protection did not work. Fick does not mention the fact that Toussaint had also been a sort of medicine man aside from being a coachman. One of the first things he did was to suppress voodoo, according to Ott.[23] This very important fact is not addressed nor dealt with by Fick. Ott attributes this to his fervent Catholicism, yet one may wonder whether this voodoo posed a threat to his power, and thus showing it powerful role in war. Indeed, one of the most impressive things about the revolution is that, despite relatively poor communication and military hierarchy, it succeeded. Yet this success should be more attributed to rational military tactic than to irrational spiritual behavior. One should consider that military strategy was not made up of selfless acts of mindless sacrifice but rather concerted and carefully planned acts of guerrilla warfare. Voodoo may have contributed to the success of the rebellion, but as such, it was only one factor among others. Other factors included the tropical forest covering, yellow fever, and inter-European conflicts.

Fick's book is not recommended as a first reading. Perhaps somewhat like Rebecca Scott's study of emancipation Cuba, Fick divides Haiti into distinct geographical areas characterized by their demographics: north, where the richest plantation existed and where revolution was immediately the most successful, west, also dominated by slave leaders, and the south, dominated by mulattos. The problem with this structural arrangement is that it cuts into the narrative flow; these divisions are not placed within the chronology (as Scott) but outside of it. Ott's chronological division did not prohibit him from analyzing concurrent geo-

graphical events. Fick's on the other hand is very problematic because one is restricted within a certain area without knowing what is happening at another place at the same time until that section. Thus as we progress from section to section, the narrative shifts back and forth in time thereby loosing the reader. This would not be a problem if such shifts occurred within a given location; that they move from place to place makes it harder to organize events as they occur. It is only recommended after the narrative has already been mastered

Cuban Emancipation and Independence

While our binational comparison drew interesting results, an internal comparison within Cuba remains somewhat problematic because, as with the original problem, there are not that many points to compare. The process of Cuban independence was very different from that of Cuban emancipation—the first was military, violent, and, in the end, controlled from abroad whereas the second was non-violent, legislative, and internally mediated by existing powerholders. Ultimately there were some similarities—foreign countries played an influential role in both processes—Great Britain in the first, the United States in the second. It is perhaps a characteristic of our modern era that foreign nations will often have some say on what goes on within the internal dynamics of a country. Unlike China and Japan that could close themselves off from the international world and exist within their closed borders in past centuries, our modern nations are "open" to each other. Modern telecommunications, international division of labor, and transportation systems are a few of the factors that have brought each nation into 'intimate' contact with one another, regardless of whether the desire of all parties involved has been there or not.

Manuel Moreno Fraginals's *The Sugarmill: The Socioeconomic Complex of Sugar in Cuba* (*El Ingenio*) is perhaps the most renknown and relevant.[24] Contrasted to his comparative piece in the *Cambridge History of Latin America*, his book, much like Scott's, is an internal study of the economic and technological system of sugar production in Cuba. It describes the technological changes the system went through and the impact these changes had in the Cuban nation. Fraginal's approach, which might be called 'ecological' in that it analyzes interdependent relations between technology and society-ecology, was rather advanced for its time (1960's) within a 'history of technology' framework. Arago, a plantation owner who wrote extensively on the sugar process in Cuba, and who later came to reject slavery, is a voice heard throughout the entire book.

The changes were numerous. Previous 'trapiches' existed much like the southern plantations—isolated units producing relatively low quantities of sugar.

There were many different varieties of sugar taken from the multi-colored cone, although before its growth, most of the sugar was of a higher quality because of labor's 'craftlike' nature. With the opening of markets and greater competition, such as English beet farmers, Cuban planters were forced to gradually modernize. They traveled abroad and imported a number of technicians, some fleeing from Haiti. At first metal elements were added to wooden machines to improve efficiency and duration. Another was the use of the "Jamaican train" which utilized one energy source rather than many different ones to boil down the sugar 'liquid' in different bowls. These changes however were more of a quantitative than qualitative nature. Changes such as the introduction of the steam engine, vacuum panning, and centrifugal separation revolutionized the sugar production process—as one was introduced another section of the process would become a 'bottleneck' in that of being the slowest part of production. These slow areas were then under pressure to be made more efficient and change. As a result of this higher production of sugar, transportation and ecological systems were affected—no longer animal packing would do. Roads were paved, and railroads were built. Similarly, the greater use of firewood in this process eventually destroyed Cuba's forests; the use of old sugar cane fiber was only employed as threats to energy reserve (forests) emerged, much like the process in Jamaica. These technological changes had a disastrous effect on the labor force—previous labor relations and conditions were more merciful than the rate imposed by advanced machinery. Cuba was no more 'humane' than other nations where sugar existed—slaves here too died at annual rates of about 10%.

This is an excellent work and hard to critique. Nonetheless some of the points that could be made are the following. Fraginals does not see the different technological changes as a whole but rather attributes more importance to some than others. For example, he perceives the vacuum pan as more important qualitatively than the steam engine because steam engine did not have any immediate significant effects on production. Yet obviously, the efficiency of the ingenio would have been impossible without the steam engine—had the vacuum pan been introduced first, the bottle neck would have occurred at an earlier stage of the manufacturing process (i.e. grinding down of sugar cane).

Another problem with Fraginals's book is that he argues that the technological changes in the sugar mill led to the use of a more skilled labor force for the processing of sugar—that the black slave was too ignorant to be maintained as part of the labor process. This seems to be one of the basis for his argument of technology's impact on slavery. Yet one may question these claims. Certainly a technologically competent labor force was needed to maintain and upkeep the

machinery when it broke down, something the slave certainly could not have done. It is more doubtful however that a more technically competent labor force had to be imported in order to run it—the slave in the 'trapiche' had a number of functions some of which were highly skilled. There is no reason why the slave could not be taught this new process as well.

Another book, a little bit more directly related to emancipation is *Spain and the Abolition of Slavery in Cuba, 1817-1886* by Arthur F Corwin.[25] Pushing the study of emancipation to an earlier date than Scott, Corwin studies the foreign pressure Spain constantly faced to abolish slavery. This makes much sense for, as a colony, Cuba was under the control of Spain and had little say in events up there. Spain had actually signed a treaty with England in 1817 stating that she (Spain) would take steps to control slave trade and eventually emancipate slaves.[26] England herself spent a great deal of money trying to check slave ships. One of the biggest difficulties was the amount of coast and ocean that needed to be covered as well as the fact that many of these slave ships would 'hide' under other national flags, such as the U.S. who did not want England in what she considered her waters. Spain, in one way or another, would prolong the enactment of her treaties, yet after 1833, Britain grew more restless and active in her opposition perhaps partly for economic reasons as Spanish observers noted.[27]

By the time of the series of emancipation laws in 1860's and later, Spain was a declining empire who now perceived international reputation and image as crucial; aggressive and expanding nations are not as worried about reputation as declining ones. One of the motives behind these laws was the fear that the United States would annex Cuba if she did not do so; little did Spain know. This pressure is reflected in Moret's insistence to the governor-general of Cuba that he make the laws public. One reason or another would be used to excuse the publication, which in turn would infuriate Moret fearing the repercussions of the international image. (Cubans had no say whatsoever on these laws.) It took around 6 months before laws were finally made public. In these issues Spain was actually allied with England rather than the U.S.—due to pressure of the south; the U.S. opposed abolitionist movements. Ironically, planters in Cuba allied themselves with U.S. northern counterparts rather than southerners (planters) because the latter were actually competitors and northerners represented available markets.

It is a fascinating issue that whereas the issue of colonial representation in the metropolis helped spark off slave rebellion in Haiti, it had no visible effect on the Cuban slave. That Creole planters went to Spain demanding representation did not have labor repercussions at first seems unbelievable. There are a number of reasons to explain this—emancipation processes were already under way, the atti-

tude towards slavery did not alternate in Spain contrasted to that of France which changed with each respective government, and the ratio of 'white' to 'black' was much more even; the number of mulattos was also much greater. Another explanation might be was that reform delegates requested representation and abolition as well.[28]

Corwin's book is a highly valuable one to read alongside Scott's. Scott's internal narrative gives a number of false illusions. Though slave labor was substituted by immigration during the emancipation period (1860-1890), labor immigration had been attempted since the beginning of the century. As has been noted before, though emancipation occurred by internal legislative procedures, these procedures were subject to much international pressure. Whereas Scott leaves us a bit in the dark about the nature of Ultramar, Corwin greatly clarifies its nature and origins. Similarly, Cuba's hesitant stance toward abolition is better explained by the comparison to Puerto Rico. Puerto Ricans were vigorous abolitionists—men such as Baldorioty went to Spain and loudly made themselves heard in the Cortes. Yet since sugar was such a small industry (non-industrialized), race relations were much better and this little island could afford to take such a stance. Cuba's economic dependency on sugar, and consequently slavery, placed her in a different ideological spectrum.

Finally, we arrive at the cornerstone that made the binational analysis possible—*Cuba Between Empires, 1878-1902* by Louis A Pérez, Jr.[29] Focusing primarily on military and political aspects, Pérez describes Cuba's transition from Spain's outright colony to her (Cuba's) illusive independence at the hands of the United States. Her independence was illusive in that it was not 'won' by independentistas but rather the U.S. military (which looked down upon the Cuban liberator), negotiated by U.S. diplomats without any consultation of Cuban leaders, and whose government and constitution were controlled and shaped by the U.S. as a result of Platt 'agreement'.

It might seem like the United States all along had a purposeful policy of imperialism, but it fact her policy was a result of competing elements. At first the U.S. wanted to aid Spain in a resolution of the rebellion, suggesting that Spain, whose army was faltering as a result of poor supplies, pay, clothing, make peace with Cuban rebels before the coming of the rainy season in summer. However, there was a difference between McKinley's approach in the executive, an indecisive 'wait and see approach', to that of Congress and the U.S. public mentality that equated Cuban revolution to her own and wanted to wage war in order to make Cuba independent. Forced by Congress to intercede, McKinley acted on behalf of 'Cuba's interest'. Spain was thus taken aback when the U.S. reversed her diplo-

matic policy from one of assistance to one of competition. A surprising element as well is that Moret (Moret Law) was one of the persons involved with U.S. negotiations—his attempts to keep the U.S. away from her territories where ultimately overwhelmed by economic and political factors.

One of the points made that Pérez brings out is that the United States military, which was so condescending of the Cuban revolutionaries, were victorious as a result of the ground paved by these very revolutionaries. Marti himself seemed to believe that 'fortune was the accident of design', as George Will so eloquently states; that is to say, organization was more important to overall victory than any amount of will or voice one displayed. Whereas the battles of the Ten Years War were cut by a line that divided east and west, containing the war in the east, the revolt for independence had successfully attacked at a number of points throughout the island, thus severely weakening the Spanish military and the Cuban economy. Yellow fever and other tropical diseases were taking their toll; there were not enough hospital facilities to treat these patients. Also, many of these soldiers were young and relatively untrained peninsulares. This military, on the level of will, had become greatly demoralized—not only because of battles, but because of the fact that Spain was conceding much to the autonomists and separatists. Why wage a war if those whom you were fighting against were being recognized as the legitimate party? Physically, militarily, and ideologically the battle did not make sense. Such was the weakening of the Spanish military that Cuban revolutionaries expected victory any time soon. Thus, the quick victory was not due so much to 'American ingenuity' but rather to conditions which had been gradually established by the Cuban insurrectionists. The American army ended up taking recognition for a victory they did not really win.

The advantages of the book is its microhistory. Fraginal's article gave the impression that Cuba, after the process of emancipation emerged as a leading producer of sugar. One of the points not brought out sufficiently is that there was a tremendous depression in Cuba after the pact of Zanjon which ended the Ten Year's War. Another is that after the war for independence, the economy had been totally destroyed—there was a overabundance of soldiers with no jobs to go to, nor any capital with which to develop businesses or farms. They were a floating labor force that began looting and stealing, that suffered more in peace than during war. That Fraginals's article gives such a broad sweep in his 'macrohistory' gives the impression that there were no significant dips in the economy. The reader's understanding of Fraginal's article is thus affected by his knowledge—a comment used to describe a few years could be interpreted in many different ways. Such is the danger of 'metahistories.'

ENDNOTES

[1] Gwendolyn Midlo Hall*, Social Control in Slave Plantation Societieis: A Comparison of Saint Domingue and Cuba* (Baltimore: Johns Hopkins University Press, 1971), chpt. 1.

[2] Cuba succeeded in part because of U.S. loans and 'reciprocity'. One may question whether the technology was available given that its was at this time that Britain was undergoing its Industrial Revolution.

[3] C. L. R. James, *The Black Jacobins: Toussaint Louverture and the San Domingo Revolution* (London: Allison & Busby, 1980).

[4] Ibid., 85.

[5] Ibid., 95.

[6] Needless to say that they do kill him, but nonetheless that ambiguously gray area of human compassion did exist by the master in this instance.

[7] Ibid., 80.

[8] Ibid., 92.

[9] Ibid., 162.

[10] Michel-Rolph Trouillot, "From Planter's Journals to Academia: The Haitian Revolution as Unthinkable History," *Journal of Caribbean History* 25,1 (1991), 85-99.

[11] Anna Julia Cooper, *Slavery and the French Revolutionists (1788-1805),* transl. Frances Richardson Keller (Queenston: Edwin Mellen Press, 1988).

[12] Mirabeau, member of the Friends of Blacks wrote, "I demand to know by what right 23,000 whites have excluded from their original assemblies an almost equal number of free men of color, men who are landholders and taxpayers like themselves? I demand to know how the twenty whites who are here can be said to represent the men of color from whom they have received no authority." Cooper, 63.

[13] T. G. Steward, *The Haitian Revolution, 1791-1804* (New York: Thomas Crowell,1914); T. Lothrop Stoddard, *The French Revolution in San Domingo* (New York: Houghton Mifflin, 1914).

[14] Wilson Library, University of Minnesota, Twin Cities Campus, 1995.

[15] Ibid., iii, vi.

[16] Ibid., 125.

[17] Thomas O. Ott, *The Haitian Revolution, 1789-1804* (Knoxville: University of Tennessee Press, 1972).

[18] Ibid., 204.

[19] Ibid., 132.

[20] Carolyn E. Fick, *The Making of Haiti: the Saint Domingue Revolution from Below.* (Knoxville: The University of Tennessee Press, 1990).

[21] Ibid., 93.

[22] Ibid., 113.

[23] Ott., 128.

[24] Manuel Moreno Fraginals, *The Sugarmill: The Socioeconomic Complex of Sugar in Cuba*. transl. Cedric Belfrage. (New York: Monthly Review Press, 1976).

[25] A. F. Corwin, *Spain and the Abolition of Slavery in Cuba, 1817-1886 (*Austin: The University of Texas Press, 1967).

[26] England had abolished slavery in 1807, but did not do so in colonies until 1833.

[27] England did not want Spain to gain the trade she (England) had lost.

[28] Ibid., 190.

[29] Louis A. Pérez Jr., *Cuba Between Empires, 1878-1902* (Pittsburgh: The University of Pittsburgh Press, 1983).

PART II

PERIPHERY-METROPOLIS RELATIONS

4

Toward an Indirect Colonial Encounter: Robert Jackson and the Failed British Occupation of St. Domingue, 1793-1798

There is a point in human affairs beyond which prosperity cannot advance; and, it is not in the nature of things, that prosperity remain long stationary.

—Robert Jackson

The British Invasion of St. Domingue between 1793 and 1798 coincided with, but did not surpass, the slave-led Haitian Revolution of 1791 to 1804. Both the Haitians and the British fought the French. From the respective view of each actor, military offense constituted part of a defensive strategy to protect or expand one's way of life. Those of African ancestry wished to regain the freedoms they had lost. The British wished to prevent the spread of slave revolts and the loss of their Jamaican sugar colony; it was falsely presumed the Caribbean island would easily fall into British control. (The French, on the other hand, wanted to undo the aspirations motivated by their own Revolution and the Declaration of the Rights of Man from 1789.) Slavery was a social system that placed the self-interests of each group squarely at odds with each other; there was little room for legitimate compromise or for the concert of interests. Consequently, while the British military effort was an attempt to maintain the social bases of their emerging colonial empire, the Haitian effort was an attempt to undo it. Theirs was an uneasy "alliance".[1]

Robert Jackson was a part of Britain's Invasion. Traveling to the island in 1795 with the Third Regiment on Foot, he served as surgeon and 'healer'.[2] As a medical man, Jackson's role was crucial to the success of the British. Most soldiers died not from combat wounds which ripped human flesh and organs apart but

rather from unnoticeable tiny pricks upon their skin. Of the 100,000 man death toll by the failed end in 1798, 95% had died from the ravages of diseases such as yellow fever.[3] The Spanish called this disease by a prominent and often panic-forming characteristic: "vomito negro."[4] Insightful and innovative, Jackson wanted not only to treat and cure the sick, but to prevent their ills by finding the causes of their sickness. Although he continued to search long after this incident, he never found the cause of that which so inhibited European colonial expansion and security, nor could he have.

Limitations of technology and scientific methodology placed a ceiling upon that which he could know. The impact of yellow fever on the liver and kidneys are not visible to the naked eye as these occur on the cellular level. Visible changes such as a slight alteration in color and size are not so striking as to indicate their importance; other more prominent lesions can easily mislead the unaided viewer.[5] One shouldn't forget that yellow fever is a virus that could not have been detected with a microscope had Jackson even bothered (and known how) to use one. Despite great leaps of scientific discovery, the structure and functions of organs were things still greatly unknown.

Given this 'failure' both military and medical, to what extent and in what manner can it be said that Jackson was an agent of empire?[6] Since he appears to have rarely treated slaves given that there is no mention of these patients in his work, unlike many of his missionary and secular counterparts in Africa, what was the exact nature of his colonial relation to these slaves?[8] How did his role differ from that of other practitioners in colonial Africa which have been studied this quarter; do any differences or similarities elucidate the nature of European medicine in Africa?

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Before addressing these issues, two brief points should be made.

This story is obviously not about the colonial process in Africa but rather about the colonization of Africans. Whereas the impact of European missionaries, doctors, and bureaucracies was gradual, diversified, and often unnoticed by those of the "Dark Continent", its impact was immediate, perceptible, and transformative for those who were sequestered to become slaves in the Caribbean. The European construction of their social reality was an irrevocable departure from a home that could never be recaptured. Though the Haitian Revolution was an ultimate success in breaking away from French imperial domination, it is perhaps no wonder that it was a failure from a social point of view. These human islands were isolated not only

geographically, but socially as well from their African points of origins. Unable to bridge the gap to other communities sharing similar world views and social premises (had this been attempted), the Revolution was a failure in either reestablishing the African indigenous social life as well as in adapting to a capitalist economic system whose premises and assumptions were initially foreign and dehumanizing. The colonial legacy sadly remains alive throughout most of modern Haiti, as witnessed in its constant poverty and social chaos, despite the courageous attempt to throw it overboard nearly two hundred years ago.

Another brief point. It cannot be said that European physicians readily accepted the premise and outcome of colonialism nor that these were blind agents of imperialism. Roughly similar to T.O. Biedelman's critique over the lumping of missionaries into an indiscriminate whole, to refer to all physicians as agents would be to take a too stereotypical view of them.[9] Some chose not to participate, not necessarily because they opposed colonialism (it is in question whether these actors were also aware of the historical process which surrounded them), but rather because it was impractical and too much of a burden. Sheridan Delepine, Prof. MacFadyean, and Sims Woodhead, though asked by the British Colonial Office to travel to South Africa in 1902 to help control a 'highly fatal cattle disease' that afflicted Rhodesia and that could have spread into Natal, turned down such opportunities as these conflicted with well-established practices. It seems that either young and unestablished doctors or very well-known researchers who could charge exorbitant fees were the ones most willing to travel and sacrifice life and limb.[10] One should also be careful, however, with equating 'doctors' from these different periods as their social status and function varied greatly between 1796 and 1902.[11]

Inversely, others who did become a part of the enterprise, were concerned about the greater effects colonialism would have upon the social fabric of the British. It was implied, both by Sir Hans Sloane, a physician who traveled to Jamaica in 1687, and Jackson, that the processes of colonialism might feminize the male Londoner. Sloane writes that, contrasted to Negroes, Indians, and Mahumetans,

> The Northern Nations, Goths and Vandals, who, by their Numbers and Strength overcame most Parts of the World, ended not their Victories till by coming over the Alps they tasted and drank the wines, whence they flop'd their Conquests, became Effeminate and Fruitful.[12]

Similarly, Jackson writes,

> But the Romans having overrun the world, and plundered the wealthy, became rich and in the common language of mankind, poor in reality, as dependent; being rich, they became luxurious and sensual; being sensual, they became effeminate, enervated and cowardly…the authority of the nation became contemptible, for the ancient virtue was supplanted by sensuality and vice.[13]

Though both citations do not directly refer to the British, one cannot but wonder how the example of previous expansive groups are being presented as a model for problems which have arisen with the creation of empire. Both 'doctors', perhaps like native African healers and their concern with social conduct, complained of the immoralities of wealth and wine and of the possible consequences.[14] That economic success might undermine the moral foundations of that success was of significant concern to them, especially when one considers that Sloane wrote for a Royal audience and that Jackson alludes to the issue of morality throughout the text. The benefits of imperialism were not to be accepted apriori.

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From a modern point of view, the medical world of eighteenth century Europe was beset with problems. If native African medicine was nascent, that of the eighteenth century might be called toddler-like—it was beginning to take its first modern steps as illustrated in Jackson's work. A wide range of symptoms, such as "erruptions of a scabby or leprous kind": symptoms which are now identified with specific diseases but were then defined under the broad term 'fever'.[15] Although the concept was starting to differentiate itself into more discrete entities as that of 'yellow fever', it was generally used to refer to 'unnatural' changes in the vascular system.[16]

A primary difficulty was distinguishing which symptoms pertained to which entities; a wide diversity of symptoms could be associated with 'fever'. Jackson mentions that only recent medical experiences in the American and Haitian Revolutions had given him the confidence to make an association linking fever to dysentery and leg ulcers respectively.[17] The same was true of internal 'symptoms.' According to his dissections, "the seat of the chronic disease [yellow fever] is principally confined to the tract of the colon and rectum. The structure of the coats of those parts is changed; they are thickened in substance; the veins are large and distended; the general color is grey…" That the natural seat was the artificial one

as well was a conclusion modern physicians would not concur in, though they would be in accord with his materialist-empirical approach.[18]

The problems of isolating and identifying disease entities were intimately connected with the ability of attributing symptoms, internal and external, appropriate to these. A disease is defined by its symptoms; pathology and classification go hand in hand. If the internal symptoms were wrongly attributed to another entity whose external symptoms actually corresponded with a different set of internal lesions, the viewer would undoubtedly form inappropriate conclusions about the disease's pathology. For example, if one hypothetically attributes yellow skin (external) to tubercle in the lungs (internal), one would in fact be wrongly mistaking yellow fever for tuberculosis. A simpler and more fundamental problem existed in this period, however. What range of external symptoms were to be associated and linked together were open questions to the 'medical researchers' of the day. What 'yellow fever' was, regardless of how it affected the internal body, was up for grabs.

The great diversity of actual diseases, aspects of the body to observe, and symptoms whose similarity were indistinguishable in the early stages of a 'fever' thus made the definition and pathological understanding of disease a very difficult task. It is perhaps no wonder that, in a dispute with French physicians over the most appropriate method of cure, Jackson resigns himself to the fact that

> whether we dilute [French approach], deplete, purge off abounding bile, or stimulate the nervous energies to higher action [British approach], we proceed to a certain point, at which we remain bewildered. An event may perhaps take place, but we have no controul over it;—we know not with certainty what we seek; we consequently interfere, and leave the business in the middle…[19]

These difficulties affected Jackson's analysis of his medical experiences in St. Domingue, analyses and descriptions recorded in *An Outline of the History and Cure of Fever* (1798). Perhaps the most significant point of contention addressed in the book was the belief, "commonly maintained by military men, that European soldiers are not capable of undergoing the fatigues of field service in the tropical climates of the West Indies."[20] This seeming inability to adapt to new environments was common throughout the British tropical empire and brought to the fore a national self-assessment regarding the creation and maintenance of empire.[21] Was the frame of man was too rigid, and thus too tender, to be exerted outside its place of origin?

How the question was answered had direct implications for British imperialism. One could broadly view the issue in the following manner, slightly different

in the manner Harrison portrays it. If medical authorities were to negatively conclude that man and his ill-health were wholly determined by his environment, the colonial enterprise would have been significantly undermined. Positive affirmations regarding the "biological independence" (health) of man, on the other hand, were at the same time reaffirmations of colonialism.

It is perhaps no wonder then that Jackson, as a recruit of the British army, provided the answers that he did: European soldiers were to a great extent independent of environmental limitations and could thereby function in foreign territories. Those external limitations that did exist could be suitably controlled with the aid of medical advisors and the strategic locations of regimental hospitals.[22] Jackson's writings thus constituted a part of the broader medical reaction to these issues and played a significant role in the social justifications of national activities abroad.[23] Understanding his thought also clarifies the meaning and impact of colonialism upon the colonizer.

Though he informs us of a different point of view prior to his military experience, it is likely that a relationship to a certain Lieutenant—Colonel Gammel reoriented his perspective.[24] We do not learn much of Gammel except that "the benevolence and affectionate care, which [Gammel]…on every occasion bestowed on the concerns of the soldier, impressed at the time, and will ever continue to impress a sentiment of gratitude on the heart of the author, who is in his official capacity, had daily opportunities of observing his conduct."[25] Lt. Col. Gammel, believing he had achieved some insight on the issue, passed it down to Jackson, who then used it as a hypothesis for testing and exploration. The praise of certain 'military authority' (most likely referring to Gammel) is a point commonly found in passages pertaining to such lessons.[26]

The lesson handed down was the following: there was an inverse correlation between the level of physical activity to the prevalence and severity of fever. An increase in one would be followed by a decrease in the other. Jackson makes this lesson his own,

> It was uniformly observed, that troops were healthy during the activity of a campaign, that diseases multiplied in quarters or in stationary encampments; further that men marched through unhealthy districts for months with impunity, that the residence in one place, for a fortnight, was followed by the appearance of disease. It thus appears, that there is something in activity of mind, and exertion of body, which renders the frame less liable to the impressions of morbid causes—which even perhaps removes those causes when actually received.[27]

There were a number of examples used to support the theory. In one 1796 case at Cape Francois, captured soldiers who were put to hard labor contrasted sharply to stationary British troops; "instead of languid motion of the limbs, a shallow countenance…the motions of the limbs were active and energetic…[and] the eye lively and sparkling."[28] Areas such as Irois which were highly subject to yellow fever were relieved when military activities commenced.[29] Cures were more likely to succeed and become permanent if "supported by a strict observance of regimen, and by habits of exercise in pure air."[30] A "convalescent [gained] more in one day, by the simple act of walking, making clean, and preparing for service, than by swallowing bark and drinking Madeira, for three weeks in a hospital;" relapses also were more common and severe to those who lacked physical activity.[31] The closer the treatment was to military activity (i.e. movement of troops from one area to another), the more successful it would be.[32]

This principle of activity attained so much importance throughout Jackson's study that it came to guide and affect every aspect of his medical analysis. It was not only a matter of statistical correlation, but rather, it became the criteria used to define states of health and disease. Jackson divided the three forms of yellow fever not only according to their symptoms but also according to the amount of physical activity exerted by that group. The first form, whose description is most accurate of the disease, was most common to athletic types, the second to men of inactivity; the third used an environmental criteria.[33] It is interesting to note that because a new criteria was used, men of rather diverse social classes were grouped together—prisoners and aristocrats, men of inactivity ; Negroes and soldiers, men of activity.[34]

Jackson's conceptual etiology was also formed around this theme. "The cause of an endemic, in the same manner as the cause of contagious fever, seems to manifest itself after two general modes of operation, viz. 1. by suspending, impending, or impairing the energy of the moving fibre; 2. by irritating or exciting to inordinate and irregular action."[35] The primary agent of disease, Irritability, acted by affecting the 'moving fibre of the vascular system.' [36] The concept of health is also formed on this 'active' principle. "But, as the life of an animal has been observed to consist in action and cessation from action, so health is observed to consist in this action and rest being uniform, regular, and alternate."[37] Despite the fact that adjectives such as inaction are used, the whole analysis revolves around the theme of 'action,' 'activity,' 'movement,' 'exercise'.

Jackson's response—that military activity actually strengthened the European soldier—thus ironically ended up being a denial of the fact in question and reasserted the will and determination for conquest and colonization. These influences

are so strong that they also contaminate and spread into his construction and analysis of health and disease, a study which was already inclined to be philosophical given the inability to perceive and affect the minute mechanisms of biological phenomena. It might be said that they even helped shift his view away from a materialist perspective to a philosophical one as they provided strong motivations and conceptual cues. If briefly considered, however, to claim that disease affects the activity of man becomes a rather commonsensical tautology. His views regarding treatment are the exact opposite of what is now known today. Despite the fact that the exact pathogenesis of the virus is still unknown, for example how it affected liver and kidney tissues, the most successful treatments include plenty of bed rest and 'inactivity.'[38]

It is curious to point out that whereas the military context and military officers had a clear influence on Jackson's medical cognition, the organizational relationship between medicine and the military were rather weak. Jackson complained that the medical department was but a minor branch which received less esteem and support than even bookkeepers and those who "issued provisions."[39] Another point of contention in the book was that this branch should be strengthened as it was crucial to success in battle and of "real concern to a nation."[40] "It becomes the sacred duty of a physician, to expose the foundations of these causes [of contagious fever]; as it then will be the duty of higher authorities, to adopt measures, founded upon principles of science, to prevent a renewal of their operation."[41] Similarly, when he writes about "statesmen, governors and leaders of armies, who are supposed to possess the general principles of science, and who are expected to embrace, in their arrangements, the interests and concerns of the nation at large…," in one rhetorical swoop he equates medicine to the interests of the nation—a connection which seems to have not been all too clear to authorities of any kind.[42] When it comes to governmental short-sightedness, the past and the present do not altogether seem that different.

It cannot be said, however, that Jackson's thought constituted a complete rupture from that of his predecessors nor that his experiences in the West Indies are to be understood in a wholly different context from that of his European origins. Inevitably perhaps, Jackson brought the past with him wherever he went.

The contagious principle, which arose out of inactivity and which invisibly spread throughout the troops, coexisted along with its philosophical binary—the vegetative principle. Contrasted to the first, this second principle emanated from the earth and was thereby non-contagious, varying in incidence with respect to climactic season and geographical location. It was to be found highly common in warm climates near bodies of water such as rivers, swamps, and seas, and were

mostly present in autumn. Its presence and mode of work was visible and clear. He explained that the 'nutrients' (our term) abundantly found in such areas became excessive in periods where plants had reached their full growth, and affected the human body when exposed to it. There was some relationship between the two causes—men located in cold areas are often restricted in movement, and thus were likely to be affected by both, an endemic fever turning into an epidemic one.[43] If for scientific was well as for political reasons, Jackson believed that the environment did influence the health of the human body.

As the text is read, one gets the clear impression that Jackson used and combined evidence from his European experiences with his Caribbean ones to understand the miasmatic theory of disease. When he joined the regiment in 1793, it was not to St. Domingue where he was sent (and where military activities were beginning), but rather to Holland where the British were fighting the French as well (and had been doing so for quite some time). His first chapter vividly describes the favorable conditions of disease which are so similar to those of the West Indies.

> The Netherlands, the scene of the campaign under view, is a level country, abounding in water…the ground of encampment was a plowed field, or meadow often covered with water; the rains were frequent during a great part of November…[dysentery] appears frequently in the field, where men lie upon wet ground or wet straw, where they are distressed in spirit, confined and cramped in their views.[44]

Similarly, it was only in places such as Irois and Saint Marc, flat and swampy, where disease was so common and endemic.

> Irois, a bottom or plain…nearly surrounded in wet weather, by impracticable swamps…rains are frequent…"; "has been, and still is one of the most unhealthy situations in St. Domingo…some part of the swamp has actually been filled up or drained; but the ravage of the disease is still great during the wet season…may, in fact, be considered as the grave of the British.[45]

Previous geographic areas are compared to newly encountered ones to further clarify the theory. The new landscape, while broadening the available field of experience, narrowed down the suitable range of theory.

It was in this manner which Jackson develops a mental map of the incidence of disease throughout the island, a map which provided further justification for the advisorial role of 'doctors' toward the military authorities above them. As one

moved away from endemic coastal zones toward the mountainous regions, the prevalence of disease declined. Each mountain range closer to the center, and further away from the sea, became progressively safer. Finally, the central peak was a womb of security, a magical Eden protecting Europeans against all that was external and potentially threatening.

> Post Raymond, about five miles from du Centre, situated at the summit of the central ridge of mountains, commands a prospect of the sea on both sides of the island. In point of health, Raymond is not inferior to the most healthy situations in Europe; sickness of any form has scarcely been seen, and even sore legs, so common at all the other inferior posts, are unknown: accidents heal speedily; at other places a small scratch often festers…[46]

Jackson used these medical demographics to secure a position for the authority of medical advice. If certain areas were more dangerous than others, doctors at hand could help an officer determine where to best establish temporary and permanent garrisons so that "the advantages and disadvantages of the situation be fairly and fully estimated, and stated to the ruling power."[47] The health of soldiers was coequal to their military success. Therefore, the doctor played just as significant role in the planing of war as the commander and general, a claim he proposed rather apologetically. Until such 'colonial arrangements' were changed, yellow fever would continue to ravage the troops as they had since the discovery of these islands.[48]

Yet the authority of the 'doctor' was not merely a matter of the distribution and allocation of power, but rather a clear necessity for the well-being of Europeans involved. From this latter point of view, the lack of medical power meant the ill-health of the patient. This is very clear with regard to the quarantine of contagious cases. Despite the prevailing ignorance concerning the causality of disease, be it the result of climate or non-activity, contagion was a fact that had to be contended with, and controlled. Once it caught, it spread like wild-fire.

> [F]rom whatever cause the neglect might proceed, the effect was the same; two thirds of the ships…soon became infected; sickness prevailed to considerable extent in the fleet, and even some men died, on board of transports, before there was an opportunity to move them to the hospital on shore…" ; "more than half of the crew of the ship Bangalore…are already dead";"[r]egiments often suffer severely…[49]

The obvious fact that the surgeon could not always cure disease meant that prevention, as a useful and functional tool, took on much greater significance than it now holds.[50] Its importance pervaded Jackson's medical ethics and extended itself into his bleeding practices (which constituted one of his methods of cure).

Jackson realized that human agency declined as the disease progressed and thus apologetically believed that drastic action in the early stages of the disease was essential to the patient's final outcome; "in such cases, the means, whatever they are, require to be prosecuted with a determined boldness…the conscience of the author does not accuse him of acting rashly…violent measures…are essential."[51] As such, it was recommended that the doctor bleed twenty to thirty ounces, roughly the amount one gives when one donates blood today, to effect visible changes; more if necessary.[52] This apologetic extremism was thus the result of the need to make use of the very few opportunities available to the physician as well as of his binary philosophical modeling.[53] The doctor had an ethical duty to act whenever he could in order to prevent, if not diminish, the fever's growth,

> …but as it is improper to leave any thing to the chance of events, where certainty can be attained, such additional means ought always to be employed, as leave little doubt of ensuring the accomplishment of the object.[54]

Similarly, the isolation of contagion was an important tool available to the eighteenth century doctor for it prevented far greater dangers than the immediate inconveniences associated with quarantine. When doctors did not strictly adhere to observable warnings, either out of pity, laziness, or the vagaries of the weather, the contagion spread.[55] Avoiding the disease altogether would be of even greater benefit than intensively attacking its early stages. Decisive action and the authority to impose controls went hand in hand.

The observation of the conditions under which it spread was also imbued with far greater significance had its purpose been restricted to the understanding of causality. Once these were known, preventing or ameliorating such conditions would have an enormous impact in the control of a potential epidemic. Starting from the pain of experience rather than the hopefulness of ignorance, its consequences were already known too well and needed not be extrapolated from 'initial conditions.' (It is rather fortunate that Jackson himself never succumbed to yellow fever. The same cannot be said for other assistants and doctors who accompanied him, a vagary all too typical in the colonial study of infectious dis-

ease.[56]) Empiricism was thus further encouraged in the European medical research of the day.

Jackson observed that there were a number of factors related to contagious conditions—as such these could be labeled 'environmental' and 'biological' or 'external' and 'internal.' He noticed that contagious was rather prevalent in confined areas such as small houses, hospitals, and ships. "Under confinement between decks, the disease seemed to retain its full power of contagion; under exposure to the air on deck, this power was evidently weakened."[57] This observation on the journey to St. Domingue was consistent with those in Holland,

> A disease, originally of moderate symptoms, became concentrated in force, and rapid in course in this hot-bed of contagion. The fact is simple and will explain itself. A granary, or malt-house…low roofed and imperfectly ventilated, every niche of it occupied by a sick man's cradel, could not well fail, under the best care and management, of becoming a source of pestilence. Such it in fact became; the mortality of the disease being aggravated beyond its natural character, and the virulence of the contagion extending to the nurses and attendants…[58]

The same was said of hospitals on the island. It should be noted that the lack to pure air, an experience unknown to the soldier in march, was considered to be an allied factor in the illness of man—military service is again idealized into a conceptual model and used for a comparison to the imperfect experience of yellow fever.

For these reasons, Jackson had another medical suggestion—the establishment of regimental hospitals. The problem with general hospitals was not only the fact that these exacerbated the disease, but also that they were so far away from the field of combat, so that the time the soldier was transported to the hospital, he was too far gone to be treated.[59] These suggestions take on more weight if we consider Jackson's view on the relative effectiveness of immediate and drastic treatment.

There were other more 'internal' factors related to contagious conditions, factors which were closely related to broader national circumstances. For whatever reason, be it that the British army was fighting a two front war or that it had been participating in military activities for quite some time, England could not conscript enough men to fill its military needs. As a result, the military started relying on independent companies run by subalterns (officers of wealth and influence) which could obtain men at faster rates, yet whose quality, in terms both of health and service, Jackson viewed as substandard. "…[J]ails, workhouses, and manufac-

turing towns,—the great sources of recruiting, were laid open…The introduction of disease and vice; for to the incorporation of recruits from independent companies is traced the origin of contageous fever."[60]

He noticed that different nationalities, or ethnic groups, recruited were subject to varying degrees of disease, relationships whose causes were partly environmental, partly 'moral (i.e. behavioral). Whereas the Irish have a high prevalence of disease from causes "similar…which produced such ravages in the continent…[i.e.] accumulation in narrow space," the Germans for some reason or other were quite healthy as a whole.[61] "The Germans, it must be observed, are well recruited with respect to health; and they seem, on what cause it may depend, is uncertain, to have less disposition in their habits to generate contagion, when confined in narrow space, than English soldiers…"[62]

Yet his association concerning the presence of disease within certain groups was not only categorized along ethnic bases. He also noticed, as had been written before, that those from hospitals were highly subject to carry the contagious disease. The doctor had to assure himself that any recruits not only did not suffer the disease, "but that they have not had connexion with sources of contagion." Their place of origin was not so important as to the prevalence there found. "[T]hese ought perhaps in no instance, where contagious disease exists…be allowed to mix with their comarades."[63]

Given the severity of the disease, the potential consequences of an epidemic, and the limited tools and approaches available within eighteenth century medicine, the doctor had to impose a quarantine on those new recruits to assure himself that they did not spread the disease under the crucial circumstance of war. Otherwise, not only the individual and his regiment would be affected, but the nation as well.

> Regiments often suffer severely from the incautious manner of incorporating recruits…Under such circumstances, the most scrupulous exactness is necessary, and wherever suspicion exists, though no actual disease may appear, the recruit ought to undergo a most rigid quarantine. It will be proper…that he be stripped naked, the clothes being destroyed or purified, that the hair be cut short, the head and body completely washed, that he be clothes anew, and not permitted to join his comrades, for three weeks to a month.[64]

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The historical context of colonialism, and perhaps the present one of academia (with its pressures to 'publish or perish'), skews the study of 'doctors' in the European tropical empire.[65] Knowing the racism that shaped much of the relationship between the European and the strange 'Other' provides a certain temptation to frame all historical writing of the era within this overarching theme.[66] Facing the pressure of churning out page after page in order to secure lifelong security without honestly assessing one's public claims pushes to an extreme the meaning and purpose of historical interpretation. It also debases the value of this interpretation. Though each generation has the right to ask their own questions, they also have the responsibility as keepers of the past to ascertain the validity of their statements to the fullest of their ability. While slowing down the production of historical material, these approaches raise its quality and help insure that a public need not form a 'false consciousness' as to their historical identity.

The problem of 'environmental influence' need not have only been resolved by an affirmation of the racial distinctness, and thus biological autonomy, of man as portrayed by Harrison.[67] Regardless of how odd they might appear, there were other potential solutions to this problem.[68] Although Jackson strongly despised 'Negroes,' his solution and reaction to these issues were not framed in a context relative to other racial groups but rather in a context altogether independent of them. It was strictly British. Race was never used as a medical factor of analysis. He never compared his group to the Non-Western 'Other,' be it out of a lack of philosophical exploration regarding the implications of his racial beliefs or out of the practical needs which so focused his thought. That his perspective was so skewed toward the 'activity' of the British soldier meant that he would isolate the body not only from its environment, but from its race as well.

Despite Harrison's claim that European doctors recommended the emulation of indigenous customs but not of African slaves, Jackson was quite willing to entertain their practices just as long as they provided some relief from the disease.[69] Health, not race, established the framework of his thought.

> Washing or bathing, for a length of time after the operation of stool, is perfectly safe, and has effects more extremely beneficial than is imagined. Negroes, reduced to the last stages of dysentary, often sit in a running stream, or in a tub of cold water for an hour altogether; they find benefit from it; it has been tried and has been found to afford similar benefit to Europeans, in untractable states of the disease…[70]

The image of the African as beast is clearly inapplicable.[71]

Similarly, but in a rather ironic way, European medical practices in foreign locales cannot be viewed independently of their European context, be it geographical or intellectual. For however much it was used to control a particular group or mold a person's worldview, religious belief, and personal identity, the use of quarantine in Africa must always be viewed within the relief it provided to an age where cure, despite the accumulating knowledge of the body, remained a hopeful yet distant reality.[72] Prevention was always a more suitable medical treatment, and it continues to be so.[73]

The classification of disease groups, while attaining a stained character in its African context, must also be viewed as a European tendency applied to the self, to all selves.[74] While such classifications could clearly be used by the state for ulterior purposes (as modern insurance agencies will have in identifying 'unhealthy' or 'terminally ill' patients using genetic material), in other historical contexts such identities were by no means concrete nor restricted solely to a person's ethnic background. The ability to isolate contingent characteristics pertaining to groups with high incidences of disease was of great value in controlling disease—identifying these conditions implied the hypothetical treatment for tens of thousands of potential victims. While such ethnic categories thus helped the understanding of disease, the understanding of disease was not solely confined to them. Other non-ethnic factors, such as living conditions (i.e. hospitals), were also considered.

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For all that might be written in his defense, however, Robert Jackson remains an agent of empire and a man of his time. The universal qualities of his story are circumscribed by its conditions. Jackson truly believed that the British were fighting a war in the aim of self-defense and the cause of freedom. While criticizing the mercantilist soldiers of the independent companies for their greed on one hand and praising the German recruits for their pastoral habits in the other, Jackson failed to incorporate the black Haitian slave into his scheme. Had he integrated any awareness of their circumstance, he would have realized that all of the virtuous qualities he attributed to British volunteers and rural Germans were exact descriptions of their African counterparts.

> A soldier, who volunteers the defense of the rights and liberties of his country, necessarily possesses a spirit of virtue and independence, a generous love of

> mankind, and attachment to his native soil…is an object of highest veneration.[75]

> The poor, the pastoral and semi-barbarous nations seem, at all periods, to have been conquerors of the rich, the commercial, the manufacturing, the polished, and refined. With this fact in view, the rulers of nations ought to select their soldiers, from among that part of the community, which most resembles this description.[76]

Jackson, like many historians, remained blinded by racial and military boundaries dividing human reality—boundaries which are socially constructed.

It is perhaps no wonder then that he also failed to predict the failure of the invasion before it ended, according to the criteria of his insights. Again, had he made these connections, he would have ironically forestalled more activity and saved the lives of countless others, white and black. The benefit and purpose of the invasion was being questioned by 1796 in the House of Commons. Any opposition would have placed more weight favoring the removal of British troops. The death toll in that same year, the approximate year when Jackson was writing his book, stood only at 20,000.[77]

Ultimately, Robert Jackson was an agent of empire principally because he allowed the needs of empire to influence his judgment and frame his conceptions. The pressures of military activity and the perceived need to succeed were so great, that he optimistically proved theories that were untrue. More seriously, however, he idealized this activity and used it as a norm by which to compare and assess all other experiences, both physical and conceptual. Disease and health were both conceptual variants of 'action'—one the irritability of such fibres, the other a regular and periodic rotation. Similarly, the sensual experience of march and battle were used as counterpoints to that of disease. Differences between the military's health and diseased's ill-health were turned into causal factors of illness; the restoration of missing elements would help cure the patient.

Our conclusion is a qualified one however.

The methodological and technological limitations he confronted meant that he could not have but been influenced by the greater social reality. Without qualitatively altering techniques or technologies, Jackson could never have understood the cause of disease no matter how hard he tried and however much effort he put into it. "The cause of fever…is a matter, the intimate properties of which we have not yet discovered, and which in all probability we never will discover."[78] Any clue, be it military or not, that could be used to form some pattern of disease coherence was therefore considered. Numerology, the significance of seven as

common phenomenon, and astrology, whether diseases appear with the moon, which are now are naturally rejected as irrational and nonscientific were tried on at least one occasion.[80] Nonetheless, he remained true to his one faith and principle: "[that] the laws of health are uniform and regular,—even disease obeys a rule."[81] That most cherished epistemology, empiricism, was thus itself subject to the greater needs for coherence and structure in the eighteenth century.

It should also be remembered, however, that Jackson did more harm than good by using his bleeding and purging practices. Prevention and quarantine were the only available means at his disposal. The cognitive autonomy of medicine as well as its status in society (and the military) were realities of the future, not of his own day.

ENDNOTES

[1] For a number of accounts see the following: Anna Julia Cooper, *Slavery and the French Revolutionists, 1788-1805*, trans. Frances Richardson Keller (Queenstown: Edwin Mellen Press, 1988); Carolyn E. Fick. *The Making of Haiti: The Saint Domingue Revolution from Below* (Knoxville: The University of Tennessee Press, 1990); C.L.R James, *The Black Jacobins: Toussaint Louverture and the San Domingo Revolution* (London: Allison & Busby, 1980); Thomas O. Ott, *The Haitian Revolution, 1789-1804* (Knoxville: University of Tennessee Press, 1972).

[2] Robert Jackson, *An outline of the history and cure of fever…(*Edinburgh: Printed for Mundell & Son, and for T.N. Longman, and Murray & Highley, London, 1798), 27, v.

[3] Ott, 93; Geggus, 50. Though Geggus is using different numers, the general theme is true. Disease greatly accounted for the French defeat as well.

[4] George K Strode, ed., *Yellow Fever*. (New York: McGraw-Hill Book Co, Inc., 1951), 141.

[5] Ibid., 145.

[6] Despite its Haitian failure, Jamaica nonetheless continued long afterwards under British control. Despite its Haitian failure, Jamaica nonetheless continued long afterwards under British control.

[7] van Heyningen, E.B. "Agents of Empire: The Medical Profession in the Cape Colony, 1880-1910" *Medical History* 33 (1989), 450-471; Paul Stuart Landau.

The Real of the Word: Language, Gender, and Christianity in a Southern African Kingdom (Portsmouth: Heinemann) 1995; T.O.Ranger, "Godly Medicine: The Ambiguities of Medical Mission in Southeastern Tanzania, 1900-1945" In Steven Feierman and John Janzen, eds. *The Social Basis of Health and Healing in Africa*. Berkeley, 1992:256-84.; Megan Vaughan. *Curing their Ills: Colonial Power and African Illness*. (Stanford: Stanford University Press) 1991. Similar arguments in David Arnold. "Public Health and Public Power: Medicine and Hegemony in Colonial India." In Marks and Engels, eds., *Contesting Colonial Hegemony: State and Society in Africa and India. London, 1994, 131-151.*

[8] van Heyningen, E.B. "Agents of Empire: The Medical Profession in the Cape Colony, 1880-1910" *Medical History* 33 (1989), 450-471; Paul Stuart Landau. *The Real of the Word: Language, Gender, and Christianity in a Southern African Kingdom* (Portsmouth: Heinemann) 1995; T.O.Ranger, "Godly Medicine: The Ambiguities of Medical Mission in Southeastern Tanzania, 1900-1945" In Steven Feierman and John Janzen, eds. *The Social Basis of Health and Healing in Africa*. Berkeley, 1992:256-84.; Megan Vaughan. *Curing their Ills: Colonial Power and African Illness*. (Stanford: Stanford University Press) 1991. Similar arguments in David Arnold. "Public Health and Public Power: Medicine and Hegemony in Colonial India." In Marks and Engels, eds., *Contesting Colonial Hegemony: State and Society in Africa and India. London, 1994, 131-151.*

[9] T.O. Beidelman. "Social Theory and the Study of Christian Missions in Africa." *Africa*, 44 (1974), 235-49. T.O. Beidelman. "Social Theory and the Study of Christian Missions in Africa." *Africa*, 44 (1974),235-49.

[10] Von Deborah Dwork, "Koch and the Colonial Office: 1902-1904, The Second South Africa Expedition," *NTM* 20, 1 (1983), 67-68. Whereas David Bruce, a young and more inexperience man was willing to work for about 3,500 pounds per year, Robert Koch was charging about 10,000. Whereas David Bruce, a young and more inexperience man was willing to work for about 3,500 pounds per year, Robert Koch was charging about 10,000. Ibid., 67-68, 70.

[11] There was a three tier level: apothecaries (druggists), surgeons, and physicians in the late eighteenth century which did not exist by the early twentieth century. Lester S King, *The Medical World of the Eighteenth Century* (Chicago: University of Chicago Press, 1958), chpt. 1.

[12] Sloane, Sir Hans, *Voyage to Madeira, Barbadoes, and Jamaica: With the Natural History of Jamaica,* vol. 1, (London: B.M., 1707), xxvii-iii.

[13] Jackson, 346.

[14] J. D. Y. Peel, "The Pastor and the Babalawo: The Interaction of Religions in Nineteenth-Century Yorubaland," *Africa* 60, 3 (1990), 341, 344, 348, passim. The distinction between religion/magic and science/medicine are not that clear in native Africa, thus Peel's article on religion applies. Notice for example the reaction by the Tswana in the Comaroff article ("Medicine, Colonialism, and the Black Body"). They asked concoctions not only for health to promote conception but for religious functions such as to insure hunting and for new abilities such as reading. (P. 227). Curiously, however, the distinction between medicine and religion in the eighteenth century are not that clear either, although in a different manner. Jackson imbues the soldier with missionary qualities of self-denial; "…he does not deserve the name of soldier, till he as much excels in self-denial…the man who bounds his desires…seldom meets with hardship."(P. 379) In the first pages he writes, "the chief view here is directed to improvement of the moral virtues of man" (referring to heroism, P. xiii). As such, he was acting somewhat like priests of Peele's article, who wanted to bestow archetypes and legitimacy to the group's actions.

[15] Jackson, p.6.

[16] King, chpt 5.

[17] Jackson, p.323.

[18] Ibid., 302.

[19] Ibid., 297-8.

[20] Ibid., 75.

[21] Mark Harrison, "'The Tender Frame of Man': Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860," *Bulletin of the History of Medicine* 70 (1996), 68-93.

[22] His answers will be explained through the paper.

[23] Most eighteenth century contemporaries were also optimistic about the malleability of man to the new environment. Harrison, 70.

[24] Jackson, v-viii

[25] Ibid.,39.

[26] Ibid.,383.

[27] Ibid.,362.

[28] Ibid.,381.

[29] Ibid.,382.

[30] Ibid.,315.

[31] Ibid.,339.

[32] Notice that no counter examples were looked at: when one needs to form a theory, justification immediately outweighs falsification.

[28] Ibid., 179-180, 191.

[34] On page 328 Jackson also incorporates the two. Both Africans and European soldiers suffered from ulcers on legs as these sores "appear frequently among classes of men moved to a new climate…who live temperately and soberly—(in common language poorly)….[and who] lead a life of activity."

[35] Ibid., 178.

[36] Ibid., 158,161,308.

[37] Ibid., 246.

[38] J. Claude Bennet and Fred Plum, eds., *Cecil Textbook of Medicine* 1799-1800 (Philadelphia: W. B. Saunder's Co. 1996).

[39] Jackson, 391.

[40] Ibid.,389.

[41] Ibid.,49.

[42] Ibid.,100.

[43] Ibid.,102-112.

[44] Ibid.,20,14,32.

[45] Ibid., 56, 86. These similarities contradict Harrison's claim that Jackson stressed the distinctness of tropical environments (or tropical maladies for that matter). Although it was an issue explored, he mostly argued against it. (Harrison, p 71).

[46] Ibid., 90. The idea of dividing healthy and unhealthy locals was common across both eighteenth and nineteenth centuries; medical approaches cannot always be divided along chronological units.

[47] Ibid., 101.

[48] Ibid., 263.

[49] Ibid., 28-29, 78, 373.

[50] Ibid., 78.

[45] Ibid., 259, 265. Where he refers to his conscience, he is trying to defend his use of bleeding, something challenged by many of his British colleagues.

[46] Ibid., 265.

[47] Jackson used opposites quite a number of times, for example making the distinction between a 'fever formed,' and a 'fever forming.'

[48] Ibid.,265.

[49] Ibid., 20.

[56] The idea of 'heroic' medicine may sometimes not be too far-fetched and should not be carelessly dismissed; many a researcher died while doing bacteriological fieldwork in the colonies. See for example accounts in Paul DeKruif's *Microbe Hunters*. Researchers often had to make many personal sacrifices for the sake of their research. The question might be raised, however, as to whether they knew of rewards, or whether the rewards were unclear.

[57] Jackson, 44.

[58] Ibid., 11.

[59] Ibid., 388-392.

[60] Ibid., 45-6.

[61] Ibid., 35.

[62] Ibid., 38.

[63] Ibid., 334.

[64] Ibid., 373.

[65] These questions were raised in discussion, and thus being addressed.

[66] Making and applying overarching definitions at the exclusion of the individual is astonishingly similar to the mental processes underlying racism (excluding the individual from one's conception of human reality). This obviously is not to mean that historical interpretation should be avoided altogether.

[67] Harrison, passim.

[68] Unlike many of his contemporaries, however, Jackson attributed the potential success of the European health to the malleability of action rather than race! While these used an environmental determinism, claiming that the frame of man was so malleable that it would adjust to any environment (something later doctors opposed), Jackson viewed health as contingent to man's behavior (something altogether different as he viewed these issues not in terms of innate properties of the body). As his later peers of the nineteenth century, Jackson reaffirmed the biological autonomy of man, but on a basis other than race. Yet again, this behavior was not tied to any particular cultural forms (i.e. imitating Indian food customs) but was viewed more broadly (in a binary manner—action, inaction). Jackson's thought was not so nuanced or 'sophisticated'.

It was as if he was saying that the will to act at the same time enabled man to survive—perhaps the reaffirmation of a deeply ingrained cultural ideal, a la John Wayne. Anyone insane enough to endure long and solitary trips will know that this is not such a subjective cultural belief but rather a 'fact of life'. (There are few

options other than self-reliance in the 'wilderness.') Living in a society, a mutual dependency of individuals (producing things that they could not otherwise produce by themselves), these 'lessons' (?) are often forgotten in the 'public consciousness.'

[69] Harrison., 77.

[70] Jackson., 322. The same could be said for Hans Sloane who also looked into African slave healing practices.

[71] Even if so, it did not prevent the European from imitating him, if we consider Edward Long.

[72] Megan Vaughan, *Curing their Ills: Colonial Power and African Illness* (Stanford: Stanford University Press, 1991), chpts. 3,4.

[73] One might ask, however, how these uses of quarantine attain such a different meaning by patient and doctor when applied to members outside of one's group, the definition of group shifting with time and being highly relative to the historical moment. One might also question how the uses of quarantine shift historically and geographically, and why.

[74] Ibid., 4.

[75] Jackson, 344.

[76] Ibid., 349.

[77] Ott, 86.

[78] Jackson., 331-333.

[79] Ibid., 159, 304. Some he rejected or said that there was not enough evidence (moon). He believed that the severity of the disease could be related to the 'internal ryhtms' of the body, yet didn't really incorporate these ideas into his theories.

[80] Ibid., 254.

5

On the Colonial Encounter of Medical Systems and the Image of Africa: Sir Hans Sloane, Edward Long, and Slaves in British Jamaica

It has also been said that with few exceptions, when an innovation is first introduced, its advantages over established traditions are not always very obvious.... At their first appearance, innovations are less valuable for their actual advantages than for their potential of future developments and this second quality is always very difficult to assess.

—C.M. Cippolla

When two very different communities come into contact, how will each perceive the other, and why will they form the particular images they do? More importantly, how do the differences which constitute a group's world view—its science, technology, and medicine—affect the image formed of the "Other"? Although the European expansion during the early Colonial period presents excellent historical case studies to address these questions, they have only recently been studied. Michael Adas' *Machines as the Measure of Men* is a pioneering work in this respect. He traces the way in which science and technology affected Western views of Non-Westerners from the fifteenth century to the present. Unfortunately, when Adas does discuss the Colonial encounter between the British and Africans on a material level (observations regarding technological sophistication), his discussion of their cognitive encounter with respect to medicine (and science) is given only a cursory remark.[1]

In the current historical literature analyzing the role of medicine in British-African relations, the predominant theme is to look at the way medicine provided justifications for the repressive control of the African. The earliest of such studies,

Philip Curtin's *Image of Africa*, for example discusses the high European mortality in tropical Africa and the consequent postulation that slaves were better workers in such climates. The most recent, such as Megan Vaughan's *Curing their Ills*, discusses the way in which leprosy, syphilis, and other diseases served as rationales for taking control of African communities (in particular, she focuses on the Foucaultian definition of the African body). Mark Harrison similarly frames his article which studies the role of acclimatization in the formation of racialist ideas: rationales for the African's enslavement. One feature of these and other similar works is that medicine is placed aposteriori to a particular understanding of the African rather than in the initial creation of that image; the emphasis is on colonial policy and behavior rather than colonial cognition.[2]

We may also note that the general characterization of medicine in these works is a rather negative one. It seems that the European racist treatment of Africans during the slave epoch is being smothered across the surrounding periods despite the fact that Western medical practitioners (referred to as 'biomedicine' in the non-medical literature) in the twentieth century certainly did seem to be acting with the African's interest in mind. Vaughan, for example, criticizes Western educational films on syphilis for their moralistic tone and characterization of Africans as ignorant. In one film, two brothers acquire syphilis. While one goes to a Western hospital and is cured, the other goes to a traditional practitioner and gets worse. Her critique of the film seems a bit trivial when compared to the aim trying to be achieved: the successful treatment of syphilis. Never is the efficacy of native African treatment for this disease examined.[3] The emphasis on abusive power is so pervasive throughout Vaughan's book, that any use of power is assumed to be abusive without analyzing the truth claims underlying such policies or their beneficial impact—the same could be said for most of the historical literature.[4] If the West 'hegemonized' Africa, then scholars of African history are certainly homogenizing Western practitioners.[5]

Perhaps the problem arises from the context of this encounter, which is "imperial", and which often leads many writers to take one side or another in the colonial debate instead of analyzing the issues with detachment.[6] As such, they sometimes represent the worst of insider or outsider knowledge described by Robert Merton—either a lack of sensitivity to the values involved, or a bias which inhibits the presentation of objective insights.[7] In their attacks on the West, such works are more polemical than scholarly. Ironically, that many of these works analyze the imperial encounter when the superiority of Western medicine was clear and distinct, they immediately place the group's cognitive system they seek

to attack (European) above the one they defend (African). They fail to either be aware of or to incorporate cognitive changes of Western knowledge systems.

It is certainly the case, however, that during the Colonial period Africans came to be perceived as an inferior group,[8] and the question remains why this was so. Curtin's explanation for slavery with respect to medicine is not based on a perceived mental inferiority but rather on the physical superiority of the Africans—two very different issues given that the first is a judgment of human value while the other of human efficiency. That Africans should be environmentally suited to the tropics certainly would not have made them inferior; if anything it would have placed the Europeans on the lower end of the scale. Those histories that look into racial anatomical studies still do not really explain European racism because inferiority is the operating presumption for such studies; craniometry is the symptom rather than the originating cause of such ideas.[9] Adas's book is helpful in that the observed technological differences (plows, housing, boats, mining) would have given Colonial Europeans immediately visible manifestations of intellectual ability which would later have been 'proven' in the anatomical studies of the races (if we assume that technological levels reflect intelligence). But what role did the clearest manifestation of mental ability—the cognitive world—play in this debate? As stated before, we mostly draw a blank in Adas's book and in the existing literature. The full range of factors affecting the 'image of Africa' have not been fully explored.

This particular topic—the encounter between European and African medical systems of thought—has seldom been scrutinized. Titles suggestive of the topic, such as Richard Sheridan's *Doctors and Slaves* or Ronald Numbers' *Medicine in the New World*, mostly bypass this issue. Although Sheridan has a chapter which describes the two medical cultures existing side by side in the West Indies, it is not an analysis of their cognitive interaction, but rather of their therapeutic one. Numbers' edited book has more to do with the relationship of the colonies to the Old world than to the New.[10] Other works which do purposefully explore the interaction between these different systems focus not on the perception of the other's cognition but jump ahead to the changes created by this interaction or try to justify the native medicine's reasoning.[11] Even the Comaroffs' *Of Revelation and Revolution*, which sought to understand changes in the consciousness of the South African native by studying both cultures alongside the other, was too general and did not ask the specific questions we are posing.[12]

It is not that these kinds of questions—the cognitive interaction of different systems of thought—have not been studied in the history of medicine, but rather that the subject is new to the field. A survey of the recent literature reveal but a

handful. The work that comes closest to the aim pursued in this paper is that by Louise White; that her time period is in our century, however, makes it obsolete for our purposes.[13] What is perhaps important to emphasize is that while there has been a growth in the studies of foreign medical systems, the encounter between different systems has seldom been the central topic of scrutiny.

The aim of this paper is to help fill the historiographical gap by analyzing the interaction between British and African medical systems in Jamaica in the seventeenth and eighteenth centuries. Focusing on the period prior to the nineteenth century has two advantages. The first is that one is able to study racism when it was not a pervasive social belief. The second advantage is that this was a time when the differences between the two medical systems were not as great as they would be later. Situating it as we do, there is hence less of a cognitive bias affecting this encounter—socially and medically speaking. This fact can hopefully give us a more genuine understanding of how Europeans came to understand bodies of knowledge different from their own and yield insights into the formation of racist images. It is also hoped that the negative context of colonialism which 'brought' these two groups together can be lightened to get a better understanding of how such an encounter would have occurred otherwise. This is not to say, however, that its influence can be erased.

The past encounter, and our view of it from the present, is a unilateral one in that most of the information available is of European rather than African origin. What the members of the subordinate group thought can sometimes be glimpsed by side comments of European writers, but there is not enough available evidence to build a grounded picture. However, the lack of evidence and testimony from the colonial period need not mean that the African's voice remains a silent and passive one. African medical practices show a highly continuous historical development—a case that will be argued in the paper—and hence the body of African medical knowledge can be incorporated to overcome any significant biases of European observers. The historical object of European assessment, African medicine, can be reconstructed so that we may see what Europeans 'saw' as well.

Only two men will be studied in detail—Sir Hans Sloane and Edward Long. Both were highly influential in their respective periods, and have played a significant role in the British/European understanding of the "Other." Their contribution, however, could not have been more antithetical. Hans Sloane was a leading member of the Scientific Revolution and is best remembered as the founding father of the British Museum—an institution dedicated to the preservation the world's cultures. Edward Long, on the other hand, played an important role in narrowing Western understanding of the African. His racist polemics gave sup-

port and justification to the Atlantic slave system. Both men, however, came into close contact with African slave medicines during their stay in Jamaica, and formed many of their ideas of the African from it.

This paper will study the social and intellectual influences affecting both men's cognition of African medical knowledge. To what degree was their understanding affected by the disparities of medical knowledge that existed between the two groups? Were they reacting to a genuine understanding of this exotic medicine or to an image of their own self?

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Personally, Sir Hans Sloane did not go to Jamaica in 1687 to encounter the "Other" but rather to encounter nature; officially, his purpose for being there was to attend to the island's new lieutenant governor, Christopher Monck, as a physician.[14] Monck had actually been sick prior to departure[15] and had asked his own physician in London, Peter Barwick, to suggest another for the post. When Barwick then turned to Sloane to recommend a candidate, Sloane was elated. Here was an opportunity to travel to the new world and encounter new species of plants and animals. The recent acquisition of Jamaica by the British in 1655 was analogous to the 'terra incognita' of New Spain—both were rich mines to be explored, if not physically by a conquistador, then intellectually by a natural historian. In either case, rewards were the likely outcome.

At a time in world history when a man could lay claim to many specializations without intellectual and professional reprobation, Sloane had acquired an expertise in both natural history and medicine. That discoveries in the first provided cures for the second meant a creative dialogue between the two; Sloane's botanical expertise would make such a trip valuable and fruitful. It was to his mentors in both fields, John Ray and Thomas Sydenham respectively, that he turned to for advice about this question. At the age of twenty seven, should he or shouldn't he go? Sydenham was against it, probably because it would have distracted his protégé from bedside clinical studies, which he believed would lead to a genuine improvement of medicine. Ray, on the other hand, responded with a definitive yes.

> We expect great things from you, no less than the resolving of all our doubts about the names we meet with plants in that part of America, as the Dildoe, Mammee, Mangrove…You may also please to observe whether there be any species of plants common to Africa and Europe…I wish your voyage

> had…[preceded] the publication of my history, that I might have been satisfied and informed by you of these and a thousand other particulars…as your inquisitions and observations would have observed it withal.[16]

Sloane thus decided to go. While in Jamaica, he seems to have recorded everything he saw, like a man writing down everything happening to him in an endless stream of consciousness: promiferous trees, herbs with monopetalous flowers, limpets, eartilagineous fishes, testaceous animals, topography, agriculture, earthquakes, diseases, domestic animals, plantations—and slaves. So valuable is the experience that nothing could be allowed to be ignored from view, regardless of what it was. Scientifically and anthropologically this is where the merit of Sloane's *Voyage to Madeira, Barbadoes, and Jamaica: With the Natural History of Jamaica* (1707, 1729) lies.[17] His was the first careful and systematic description of the life on the island. This rigorous approach was anachronistic given that most contemporary accounts usually described only the rare and fantastic in America. The dawn of scientists like Darwin and Wallace would emerge only much later in the nineteenth century.[18]

Though it is certainly the case that Ray had more of an influence on Sloane, not only in deciding this trip but throughout the rest of his professional life, Sydenham unconsciously imbued onto him the pervasive medical philosophy of his era: humoralism. Despite the fact that Sydenham wanted to revolutionize medicine by rejecting all theories and basing his conclusions solely on empirical research, neither he nor his protégé ever abandoned what today seems to be a most false viewpoint.[19] It was from this body of knowledge, and not Ray's taxonomic propensity, that Sloane would come to see and understand African medicine.

Some historians including Gavin de Beer argue that Sloane may have abandoned the idea of humors.[20] Certainly by the time of Sloane's voyages, new evidence, and the reasoned elaboration of this evidence, had raised questions about humoralism. That blood circulated, as Harvey proved years before, raised troubling questions about causal role of humors with respect to disease. If humors could not accumulate, but rather circulated (at least some of them) throughout the body, then how could we continue to believe that they caused disease which was then defined as an imbalance of the humors?[21] The recent use of the Peruvian Bark, and its specific effectiveness, also raised similar questions about the mechanism of disease.[22] The structure of European physical-pathological modeling had by this time come into question, and speculative rationalists like Thomas Willis, Sydenham's intellectual nemesis, were fully aware of it.[23] That Sydenham, how-

ever, never realized the philosophical implications of this physical discovery—Harvey isn't even mentioned throughout the corpus of his writings[24]—meant that he would never come to question or overturn humoralism. What was true of the master, in this case, was true of the protégé as well.

Sloane, like Sydenham, did actively promote and use the Peruvian bark even though there was much theoretical opposition to it. He even went to far as to obtain rather large amounts to have a ready supply for his patients.[25] Yet despite his predominant use of the bark, he did not reject humoral theory. Rather, he was thoroughly imbued with its tenets and continued to use the emetic-like therapeutics which stemmed from these; he could not see the theoretical contradiction. Sloane dismisses the one most African of treatments—the plastering of the body with clay—because it prevented the flow of humors from the body and more than likely worsened the disease. "…but as it [use of clay] must of necessity stop the insensible transpiration, so it rarely misses to add a Cough to the Patient's Malady."[26] In an age where patronage was essential to professional and monetary success, Sloane's treatment of his one most important patient, the Duke of Abermarle (governor Monck), and his family reveal much about his most valued medical framework. On January 1688, all "were taken ill of continual Fevers." His humoral treatment worked.

> I immediately order'd bleeding…[and vomiting]…these two Remedies timely given, would check it presently in the very bud, the Vomit working usually well, and the bleeding giving immediate ease…. By this Regimen, none committed to my care miscarried, but those who would not observe Rules, or were treated after another manner, usually were in danger.[27]

Events such as these reinforced the validity of their theoretical framework, not only in the physician's mind, but in that of his patients as well. Whereas most Creoles and inhabitants of the island had been hesitant to believe and follow his aid, after this success, they trustingly and actively sought it.[28] For the rest of his life, Sloane remained a humoralist.

A perusal of his writings in the Royal Society's *Philosophical Transactions* reinforce this view. In his description of the Jamaican Pepper tree's fruit, he points to its ability in "promoting [the] digestion of meat, attenuating tough Humors, moderately heating", and so on.[29] The wild Cinnamon tree was thought to "consume the immoderate humidities of the stomach." [30] Towards the end of his life, when several children fell ill after eating some seeds that looked like "Philberts", Sloane "ordered them all to be bled, blister'd in several Places, and afterwards purged with a Medicine…which operated both by vomit and stool: And by this

Method they perfectly recovered." [31] There is no indication that he seriously questioned or rejected the basic tenets and therapies of humoral theory.

The European expansion into the tropical world and the consequent rise of mortality in this new environment did present a sort of Kuhnian crises to humoral theory. The prevalence of disease[32] raised questions about the European medical treatment and the conceptual framework of this treatment. Sloane was acutely aware of these problems. "I was told that the Diseases of this place were all different from what they were in Europe, and to be treated in a different Method. This made me very uneasie, lest by ignorance I should kill instead of curing…"[33] Yet, again, because no significant changes in the efficacy of this medicine were perceived, few questions were raised about its underlying concepts. "[I used] with the utmost caution the Remedies and Methods I had known effectual in Europe, which in a very little time, I found to have great success on the Diseases there…any person who has seen many sick people, will find the same Diseases here as in Europe, and the same method of Cure."[34] Therapeutic success, broadly defined as it was in this era, in turn reinforced the validity of its theoretical framework despite inimical circumstances. It was then with a humoral 'lens' that Sloane perceived African medicine.

At first sight, it would seem that the medical systems of Sloane and of the slaves he encountered were world's apart—his own conclusion would seem to hint at this view. He informs us that, "I have heard a great deal of their great Feats in curing several Diseases, but could never find them any way reasonable, nor successful in any way." [35] Though he tried to understand African medicine, it made no sense to him—cognitively and therapeutically. We might make a similar argument for the other non-Western medicines he explored throughout his life. For example, of the Chinese medical tools he obtained, Sloane concluded that "…on the tryals I have seen of it, though I may believe it innocent, yet I am not sure tis infallible."[36]

If we historically survey sub-Saharan medicine, we do find that the core beliefs, as well as the methodological approach underlying these beliefs, were radically different from the European. Since neither Jamaican slaves nor West Africans left many records, one has to rely on the writings of other Europeans to build up a clearer image of the African medicine Sloane encountered—not only those from that time period but from those extending into the present. This methodology might at first seem to be skewed not only because the European observer may have distorted that which he was observing, but also because of the likelihood that this African medicine underwent changes between the sixteenth and the twentieth centuries. Fortunately, if the different 'jigsaw' pieces of African

intellectual history are placed together, we find a line of continuity between the past and the present which also assures us of the validity of European observations (regardless of each individual's motivations and distortions). Hence, a history of African medicine can be uncovered from these observations.[37]

In approximately this same time, the 1660's, Olfert Dapper in a Dutch expedition traveled to the Loango coast in the Lower Congo-Zaire area (West Africa) and reported about its medical beliefs and practices.[38] Here we find therapies similar to those Sloane observed, such as the use of white clay called "kaoilin." We obtain an image of the African practitioner more akin to their popularization in movies such as the "Lion King" than to a more strictly European seventeenth century medical practice. The "lemba," used to preserve the health of the king, was a satchel with small dice-like objects—small calabashes, dry shells, iron bits, and bones. In the ritual, these would be mixed with water and "tikula" (a red spice) to then be sprinkled (only the water) on the king. In one practice, the "boessi-batta", the priest would 'purify' foreign objects in a ritual whereby he removed items from his lion-skin sack as the merchant removed trade goods from his own bags, both men moving in exact sinc with the other. The beneficial qualities of an object would be 'transferred' onto the person by some form of contact or parallelism. This same unverbalized theoretical construct, which might be called 'analogical thinking', underlies the use of talismans; the "imba" was a bracelet with a shell on it and supposedly prevented its wearer from injury in battle.[39]

Thomas Winterbottom, writing about the groups in Sierra Leone and the surrounding area in the 1790's, describes the same epistemology—

> A similar practice obtains among the inhabitants of Guiana, where the peii, priest, and physician, pretends to extract the cause of the disorder by sucking the part which has been the most affected, and the pulls out of his mouth either fish bones, thorns, snakes teeth, or some such substances which he has before concealed in it, but which he affirms came from the seat of the disease…[40]

Also, it was believed by the Timmannees and the Bulloms that if one could obtain the part of a person who had been successful in life, such as a piece of hair, nail, or bone, one would similarly obtain the fortune of that person; "hence it was deemed necessary that the body of the late Mr. James Cleveland…who had been a successful trader…should be buried in secret manner, lest the natives should have converted it into greegrees."[41] Talismans were perceived to be so powerful that they would protect a person from being killed in shark infested waters.

It is highly interesting to point out that in these years, these same beliefs were being used in the Haitian slave revolution to solidify the cohesiveness of the rebellion and as a stimulus for self-sacrificial acts.[42] "Armed" with talismans, slaves believed they were invincible against anything, to the extent of sticking their arms into canons to prevent these from exploding. Leaders such as Boukman and Jean Francois, and in previous rebellions like the one led by Makandal, relied on the elementary forms of African medicine (what we would now call religion—voodoo) to protect themselves in their quest for freedom. Curiously, rebelling slaves succeeded more as a result of their biology than their epistemology—sickle cells and 'acclimatization' protected them from tropical diseases, such as yellow fever and malaria, which wiped out the armies Napoleon had sent to quelch the rebellion.[43]

The use of 'analogical thinking', as an explanatory framework for medical therapies continues in the twentieth century. Surveys conducted among Yoruba healers in the 1960's revealed the use of plantains and herbs with springy flowery stems for the cure of impotence.[44] Of his experiences in the 1920's and 1930's, George Harley reported that the Mano people in Liberia treated convulsions by rubbing the charred intestines of a squirrel on a person's forehead; convulsions were called 'squirrels' because of the resembling jerky movements between the two. Migraines were treated by mixing spider web with clay and also rubbing it on the forehead—just as the spider runs away on the web, so would the migraine.[45] Such thinking underlay not only therapies for ill health but also behaviors for success and well-being. As Winterbottom showed in 1800, it was believed that acquiring an object would infuse one with that object's spirit—carrying a fallen leaf would give a soldier "light fleetness" in battle. If one placed a piece of one's hair in a food item, he whom consumed it would be favorably predisposed toward that person.[46]

The diagnostic tools of the current medical practitioner in Kilungo, Kenya are made up of the calabash, seeds, pebbles, and a 'magic bow' (the last for a trance). The procedure is to place the dice-like objects into the calabash, shake it, throw them onto an animal cloth, study their pattern, and then make a prognosis about the patient's malady.[47] When a little three year old girl, Malaika, could not be cured with 'biomedicine's' tetracycline capsules in 1977, her parents took her to a diviner who 'found' out that she had been made ill by her family's breach of taboo (she actually had bilharziasis).[48] It should perhaps be noted that the continued presence of traditional medicine is due to the inaccessibility of 'biomedicine'; there is too much of a demand and not enough of a supply.[49] These beliefs and

practices—prognostic pebbles and analogical talismans—also predominate in Spanish Afro-Caribbean religions such as Santeria.[50]

What we find is a medicine whose primary tenets included: 1) theory that explained disease as the result of social causes—breaches of taboo, witchcraft, and the like, 2) a methodological epistemology based on analogy, 3) and therapy based on talismans and rituals which also operated on the rationale of allegory. As in European medicine, the entire structure of this medicine was very cohesive—either one of the three factors listed above (belief, epistemology, and cure) reinforced the validity of another. The pervasive use of allegory made this medicine quite a 'literary art.'

African and European medicine thus did seem to stand worlds apart in the late seventeenth century. They shared different illness models—one humoral, the other social—, different terms—'lemba' as opposed to 'phlegm', and different cures—talismans versus phlebotomy. How could they have possibly shared any similarities? From our own modern point of view, we too would have agreed with Sloane in his own conclusion of African medicine. We can now show, with our understanding of alkaloids and cellular pathology, that these African remedies are mostly therapeutically null; most of them were of little biological benefit in curing the human body. Such is the case of most indigenous medicines which are optimistically estimated by some as about 25% effective.[51]

On closer inspection, however, the differences between the two break down. Sloane, who did not have modern techniques, technologies, or bodies of knowledge, could not have appropriately assessed the true efficacy of African medicine. Similarly, that the true internal mechanisms of the body could not have been known because these essential prerequisites did not exist meant that 'analogical thinking' about superficial aspects of the body constituted the basic epistemologies of both medicines. Pracelsus, who had preached a doctrine of 'sympathies' (analogical thinking), was very influential throughout Europe. In seventeenth-century England it was believed that yellow plants (saffron) will cure yellow diseases (jaundice), and that lung shaped leaves could be used to cure lung problems. If a cake, made out of a patient's urine, was fed to a dog, the disease would be transferred from the patient to the dog. Similarly, by moving a person between the branches of a tree, and then mending these branches, the person would be cured as the branches grew together. Fissell, a historian of early modern European medicine, herself has commented on the similarities between this medicine and that of modern Africa.[52]

Examples like these were very common throughout the medicine of early modern Europe, at both popular and 'elite' levels (a distinction that is very diffi-

culty made at this period) up to the nineteenth century. The empiricist school to which Sloane and Sydenham belonged, competed with that of the speculative rationalists who seemed to believe that inspiration was a surer method of medical progress than careful observation. These rationalists as such were not that different from traditional African practitioners. For example, Stahl believed in a mystical 'anima', Hoffman in an ether-like brain fluid, Brown and Rush in the principle of 'excitability', and Huxam in nervous fevers.[53] Despite the diversity of their backgrounds in time and place, their ideas of illness all shared a common speculative character.[54] In Germany, where the Paracelsian tradition was pervasive, retained this epistemology and its consequent ontology long after other parts of Europe had moved away from these.

One might also point out that the underlying logic of humoralism, common to both empiricists and rationalists, is in essence analogical as well—the phlegm of a cold is associated with this illness (and as its cause) without a 'direct' knowledge of the relationship between the two just as a bone talisman was associated with the qualities of a successful person (and as its cause). In both systems there was no clear distinction between cause and effect as one was misunderstood for the other. Even into the eighteenth century, the popular medicines of Hanheman's homeopathy in Paris were based on 'analogical thinking' as well. The effect of a drug produced when taken during periods of health indicated its effect during periods of illness. Consequently, coffee, which produced headaches if taken in large doses, was seen as a cure for headaches.[55] It would be unrealistic, however, to have expected either European or African to have operated outside this epistemology. Both were equally ineffective.

It is then surprising that Sloane should have failed to comment on these similarities, or that two cultures could exist right beside one another yet so completely fail to understand each other. In his two year encounter, he observed the following,

> Their Physic consists for the most part in Cupping with Calabashes on the pain'd place…Another general Remedy in almost every Disease, is mixing Clay and Water, and plastering over either some part, or all of the Body in the Warm Sun…They use very few Decoctions of Herbs, no Distillations, nor Infusions, but usually take the Herbs in substance…the Negroes use very much bleeding in the Nose with a Lancelet for the Head-ach…Bathing is very much used by them.[56]

Perhaps the most striking characteristics of his observations is the fact that he never inquires into the reasoning underlying their medical practices but rather

only into the practices themselves. Had Sloane done otherwise, he would have obviously seen the pervasive similarities between the two medicines. Sloane is not interested in what they think, but rather in what they do. Why?

The 'strangeness' of his cognitive behavior is exacerbated when one considers that during his stay, Sloane actually developed a strong ethnographic interest towards all aspects of African culture—including their beliefs. Sloane for example did obtain information about other aspects of their belief systems; many killed themselves because they believed that in their death, their souls would travel back home to Africa.[57] The *Voyage* is replete with information regarding slave music (he records a song-tune and lyrics), diet, dances, manner of catching fish, sexual relations, and many other features of their life and community.[58] It is very clear that he had a cultural interest in the African, something which was afterwards generalized more broadly into an interest for the non-Westerner. It was an interest which ultimately found its outlet with the creation of the British Museum in his will. The question remains. We might ask of him, why did he not inquire into or report about their medical beliefs since he was a physician? Countless other doctors since him, Harley for example, did investigate these precisely because their medicine were so different from his own.[59]

If we turn back to England and analyze the different medicines that competed with one another, the answer becomes obvious—Empiricism. The epistemological problems with precisely such 'analogical' medicine had led medical reformers such as Sydenham to take an active empiricist stance toward the natural world. It was a rejection of all theories, confusing and contradicting, in favor of an approach that aimed more to describe the world and how it worked. The Scientific Revolution flowered in part from this Baconian 'agenda'—from Locke in psychology to Newton in physics ('hypothesis non fingo'). It thus is in Europe's 'rejection' of African medicine that we uncover at the same time its own reaction to the epistemological traditions that had stagnated European intellectual development. As with much of human behavior, treatment of the 'Other' was not so much based on the 'intrinsic merit' of his international counterpart, but rather greatly affected by domestic philosophical agendas. In encountering the other, Sloane reacted to an image of his own self.

Sloane failed to inquire into African medical beliefs because he was so imbued with the empiricist revolution of his era. Pedagogical influences prior to the journey shaped the framing of his 'field observations' on the island. When Sloane writes

> …the knowledge of Natural-History, being Observations of Matters of Fact, is more certain than most Others, and in my slender Opinion, less subject to Mistakes than Reasonsings, Hypotheses, and Deductions…[60]

he echoed almost verbatim Sydenham's agenda for medical progress. Sydenham for example believed that,

> …however much hypotheses based upon the speculations of philosophy may be wholly futile—and futile they will be until [cows jump over the moon]…—hypotheses directly derived from the facts themselves, and arising from those observations only which are suggested by practical and natural phenomena, are stable and permanent…[thereby make those hypotheses true and genuine].[61]

It was not that Sloane was reacting to the fallacies of African medical beliefs, because he never inquired or reported them, but rather bases his reaction on the apparent fallacy of their therapeutics. In other words, Sloane did not assess the quality of African thought, but merely the efficacy of its treatment—in strong distinction to Edward Long as we will later see. Hence racialism never becomes an issue. Nor did it need to, because Sloane was focused on improving the state of medicine by inquiring into non-Western medicines and not in explaining qualitative differences which did not yet exist between these medicines (Western and non-Western). Obviously, he did not need to explain something that did not yet exist.

What is perhaps most ironic and unfortunate, however, is that Sloane did not extend this approach from his analysis of African therapeutics to his own study of European medicine. He does describe in the *Voyage* the methods he used to treat his Jamaican patients.[62] Yet throughout this section, he never looks at the efficacy of his treatments apart from the humoral theories which underlay it—humoralism was too integrated into reality to be considered as a mere theory. The failures of his therapeutics are always excused away, such as by not following instructions, a process which also occurred in African medicine. "My Medicines had the better operation, because people…submitted to taking the Remedies in the order they were prescribed without changing the Medicines [and] altering the Method…."[63] Harley showed that African doctors also explained away the failure of their own cures on the basis that the patient had not directly followed instructions. Responsibility could thus be easily transferred from the physician to the patient with such rationalizations, excuses Sydenham certainly would not have accepted.[64]

Did Sloane ever try to study these beliefs even though he didn't write about them? I would say that he was certainly tempted, and a look at his journals might answer this question. We might realistically say that Sloane had two contradictory goals, one medical and the other anthropological, operating next to each other. The first was an empirical methodology strongly imbued into him from his previous medical training, and the other was an ethnographic fascination that had just emerged while he was on the island. Studying African medicine to gain insights into the human body or to acquired potential cures, in other words to improve the state of medicine, meant to Sloane studying this medicine empirically by avoiding all of their etiologic hypotheses. Yet this approach also prevented any attempts to understand African medicine as an end in-and-of-itself, i.e. as an exotic belief system, given that all such theories would have been excluded from study. While Sloane's empiricism thus favored medical progress, it hindered cultural encounters.

Perhaps it was these contradictory and unfulfilled demands that provided such a strong stimulus for his life-long ethnographic pursuit. As alluded to earlier, even though he never returned to the island or to any other exotic local, he collected ethnographic material of non-Western cultures for the rest of his life, often purchasing these at great expense.[65] In 1702 he bought Charlton's collection, in 1710 Plunket's, 1711 Herman's, 1717 Kaempfer's, and in 1718 Petiver's.[66] Not only that, but his intention was that this aim be pursued even after his death, as with the establishment in his will for an institution that would continue his wishes indefinitely. Very few things have that kind of an impact on individuals. Though he had gone to Jamaica as a physician, he certainly returned to England as an anthropologist.

There were other reasons, aside from scientific influences, which also account for Sloane's cognitive behavior. These were both psychological and sociological. He seems to have suffered from low intellectual self esteem. "These matters of Fact being certainly laid down, may perhaps afford some Hints for the more clear Reasonings and Deductions of better Heads."[67] This self-deprecatory attitude in the *Voyages* echoed throughout his writings and actions. It was not just a matter of philosophical principle, but of psychological influence. Sloane just perceived of himself as a collector, not as a theoretician—a psychology, however, most likely affected by the empiricist philosophies. The only experiment he ever presented to the public was a rather unoriginal one toward the end of his life in 1733. In it, he made a dog run into a rattlesnake to show that snakes seize their victims, not by staring them in the eye nor from demonic powers, but from their poisonous bite.[68] Perhaps I misjudge the meaning and significance of his experiment. None-

theless, as far as I can tell, it was the only public display of theorizing that Sloane committed in his entire life.

On a sociological level, any physician's behavior toward African slave medicine might be accounted for by the very different doctor-patient relations that existed in Europe from those found in Jamaican slave communities. In Europe, not only did the doctors and patients mostly shared the same medical framework, but physicians were in a very weak position as professionals. Physicians had to deal and cope with their patient's wishes, ideas, and own stubborn treatments. To convince or cajole, the physician had to either couch his explanations in his patient's terms, or use their views in his explanations; otherwise, he stood to loose both the dying patient and his source of income.[69] In other words, the physician's weakness strengthened the need for communication with his patient.

In the colonial setting of a slave plantation, however, the situation was reversed. Physicians neither shared the same medical framework nor the same status as their slave patients; the power relations between the two had been 'turned on its head'. In a colony, the true patient was the white colonist. Physicians neither had to accommodate to, nor accept their African patient's self perception and explanation of illness. The physician stood 'on top' and could impose any interpretation (misinterpret) however he so desired; there were no checks and balances of power, neither physical nor intellectual. The physician's colonial power mitigated against true communication with the African slave and the 'resolution' of their cognitive differences.

It would be entirely ill-conceived if one were to assume that Sloane was only affected by European issues, agendas, and conflicts, and yet that African indigenous medicines themselves had no impact or role in his own treatment of them. The role of medical ideas in this encounter resided not only in the European side, but in the African as well. In other words, to claim that the only thing he could see in the African was his own self is ludicrous.

If Sloane did inquire into African medical beliefs, we may reasonably postulate that the superficial differences between the two medicines were too great and most likely discouraged further inquiry into these beliefs—an aspect largely irrelevant of the Foucaultian power relations that existed between master and slave. Patients—European and African—were not alike, and the differences in a patient's terminology and expectations affected the doctor-patient relations in the two regions. Consider the following. In Europe, the physician could rely to a large extent on the patient's own self awareness and explanation. Both (European patient and European physician) could agree that a humoral excess (yellow bile) was the cause of fever, though they might have disagreed on which particular

humor (black bile) in the given situation. Whatever the friction between the two individuals, they shared the same humoral framework from which to diagnose and prescribe treatment.

In Jamaica and other colonial areas, however, the slave patients would not have been able to communicate, much less argue with, the physicians treating them. For example, while the slave patient may have called for charred squirrels as treatment, the physician may have sought lungwort. Or perhaps, while the slave attempted to explain his illness by referring to his family or dead relatives, the physician looked for signs of yellow bile. What is important to consider not that they would have disagreed on the humors causing the disease, but rather that they would have entirely disagreed on the principles of analysis (that humors caused disease to begin with). The African-European cognitive frameworks were so different from each other that they lacked parallel terms of discussion and hence prevented any sort of communication between the two. Theoretical differences affected not only each group's perceptions, but their behaviors and relationships as well.[70]

The differences that did exist prevented the discussion of shared experiences and views, a discussion which otherwise might have unified the common bonds between European and African medical systems. The differences of terminology, explanation, and medical procedures were too great for this 'communion'. There were no clear and visible common links to bridge these increasingly diverging epistemologies. In that chaos we call history, these first innocent encounters started on the step to observed diversity between these systems rather than their observed commonalty. It would be a cognitive path that would become further exacerbated, one continuing to diverge from the another, with consequent encounters. The differences reinforced the beliefs which reinforced the differences which reinforced…Racism seems to have been the likeliest outcome of a 'bad' perceptual 'start' compounded by increasingly diverging scientific-technological levels between the two societies. Edward Long is perhaps the best example of this.

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When we turn to the author of *The history of Jamaica: General Survey of the ancient and modern state of the Island.*[71] in the late eighteenth century, we have to embark on a different analysis given that the intellectual and social realms are radically different. Although Edward Long discusses African medicine and makes judgments of this medicine as Sloane did, Long neither had the medical training

nor the recognition Sloane possessed. If assessing Sloane's stance on humoralism was important in understanding his perspective of African medicine, such an issue becomes a moot one with Long given that he could neither raise significant questions about medicine nor could he directly participate in the internal developments of the field. In other words, to understand Long we have to stand outside the content of medicine though we are situated right next to it. He should not be viewed as a spokesman for Western medicine but rather as a layman who utilized medical ideas as one of many tools in his arsenal for bondage polemics. However, we can assume certain similarities, if our analysis of African medical progress is correct, in that the African medicine Long observed was basically the same as that which Sloane described a century earlier (and which we may observe today).

Differences also exist with regard to the social context. The Jamaican society, his professional position in the community, his economic and emotional ties, and his racial attitudes could not have been more different from Sloane's. Towards the end of the eighteenth century Jamaica had become a significant sugar producing colony—an economy that had radically transformed the demographic and social structure of the island throughout the century. Whereas Sloane had been a visiting physician during a period of two years and attached to a temporary figure, Long stayed for more than a decade, came from a property owning family, and held prominent positions even after his departure from the island. If Sloane was a detached observer, Long was a vehement racialist who used any shred of evidence to support his views.

Hence medical ideas played a very different function, not only with respect to the conclusions formed from these ideas, but more importantly in the way these were used to arrive at the differing conclusions. While Sloane makes no comment trying to link perceived African medical failures to their intellectual ability and potential, Long is quick to do so. Also, whereas Sloane never discusses the ideas or reasoning underlying African therapeutics, Long studies these and oddly seems to be highly perceptive and insightful in his comments. The differences between these two approaches are the more curious given that despite the many changes which had occurred in Western medicine between these two centuries, it cannot be said that they were of a revolutionary kind. While the seventeenth and eighteenth stand close together medically speaking, the eighteenth and the nineteenth stood far apart.

The aim here is to understand not only the broader social context and power struggles which medical ideas were being made a part of, but also to analyze how medical ideas could have been brought into these arguments in the first place.

What were the underlying assumptions with regard to scientific progress that allowed a person such as Long to link a community's medical ideas to the aggregate intellectual ability of that community? To understand Long's assessment of African thought processes, we have to assess Long's thought processes as well.

> In general, they [Negroes] are void of genius, and seem almost incapable of making any progress in civility or science. They have no plan or system of morality among them. Their barbarity to their children debases their nature even below that of brutes…They are represented by all authors as the vilest of the human kind, to which they have little more pretension or resemblance than what arises from their exterior form."[72]

To state that he was a racist was to understate the character of his thought. Whereas Sloane is generally a detached individual aiming to describe nature and improve Western medicine, in Long we find such a strong racial polemic that tries to take any opportunity it can to degrade sub-Saharan culture and race. His racism is of such intensity, that he goes to great lengths to 'prove' that Negroes were of a different species from Whites.[73] It was with thinkers like Long that the racialist agenda is born and pushed to its farthest extremes, and has already been studied.[74] Oddly, he does not appear in Hannaford's survey.

If we place ourselves in Long's place, it is perhaps easy to see why he chose to abide by these false viewpoints. Simply put, he was part of an elite in a highly stratified community that stood to loose their wealth, property, and lives had the lower social segments which this elite stood on chose to rebel and overturn slavery. Racialist claims such as Long's functioned as political justifications for the status quo; if believed by all those in the system, it would also serve as a more efficient psychological means of control than by direct physical coercion. He defended Jamaica's planter class by claiming for it humane slave treatment and by accusing the abolitionists of self-interested motivations.[75]

It is not the aim of this paper to analyze the weakness of this planter class and whether slave rebellions could have succeeded during the 1760's, the period of Long's stay (and thereby contributing to his views). There had been such a rebellion in 1761. It may have influenced Long's thinking as he recognized that the size and strength of the slave population had increased and that such rebellions would have been impossible to prevent by merely 'watching them.'[76] He certainly is quite concerned, however, and writes about the histories of rebellions and the changing demographics of the island, but oddly finds these aspects reassuring. Of the 165,214 black servants in the mid 1760's, about two-thirds were women, children, or invalids. That Negroes were "habituated from infancy to a uniform

system of servitude and allegiance…adds much to the security of the lesser number which holds them in subordination."[77] It would then seem that Long felt quite secure in his sugar kingdom.

Yet the Haitian revolution thirty years later indicates that such slave revolts in these small island communities had a much higher probability rate of success than on the continents where population distributions were less skewed. The long distances from their homeland and the relatively slow travel gave these communities a very isolated character. Without an immediately available military of sufficient size, planters would have to wait some time for reinforcements. Though Long did not know this, the different biological traits of Africans enhanced their resistance to endemic tropical diseases visa-vie the Europeans.[78] Regardless of what Long might have said with respect to the number of women and children in the total Negro population, a ratio of five African men to one European male still placed planters at a considerable disadvantage.[79]

Ironically, it was the very success of plantation economies that established their weakness and instability in a physical sense. The greater production of sugar certainly meant more money per individual British landlord, but it also meant a relatively higher percentage of slaves as well. Obviously as the production of sugar increased, so did the African labor force needed for its production. In 1658, three years after its acquisition where the Spanish had survived mainly by hunting previously domestic animals and later through self-subsistence agriculture, the European/African ratio stood at four to one (4,500 whites to 1,400 blacks). In 1673, more or less the time of Sloane's stay when sugar production was just beginning to take hold, the demographic ratio still remained fairly even at one to one (8,564 whites and 9,504 blacks). Yet by 1722, when sugar production had greatly increased, the demographic ratio significantly reversed itself and stood at one to six (7,100 whites and 45,000 blacks); in 1739 it would further decrease at one to ten (10,080 whites to 99,239 blacks). The concurrent growth rate of black slaves relative to sugar production is demonstrated by comparing figures for this last year (1739) and 1774, five years after Long's departure—as one doubled (33,155 to 78,304 hogshead) so did the other (99,2390 to around 200,000). Throughout these years the number of whites, however, grew only from ten to eighteen thousand.[80] What these figures clearly indicate is as the plantation system grew, the demographic ratios would be exponentially exacerbated and hence severely weakening the power base of the planter class. Long's optimism was only wishful thinking.

Had Long been a member of a group other than the elite, it might be possible that perhaps these circumstances might have had less of an effect on his beliefs

concerning racial inferiority.[81] Yet Long, though born in England, was an member of the Creole elite and shared their views. His father had actually been a landholder in Longville, Jamaica—a name which might give us an indication of his family's influence. Arriving in his twenties, just as Sloane had, the younger Long became private secretary to Sir Henry Moore, the island's lieutenant general. Later he became judge of vice-admiralty, a position he retained twenty-eight years after his departure in 1969. The Long family had intimate connections with other members of the British elite; Long's sister had actually married his employer (Moore). Long, in turn, married a certain Mary Ballard, 'sole heiress of the Beckford estate.' [82] Regardless of where one might stand with regard to social constructivism in science, it is clear that there was a strong 'social constructivism' with regard to race. That these rebellions did have a direct repercussion on his well-being greatly affected his belief structure. Goveia points out that while a large majority of Creole writers wavered with respect to imperial ties to Britain, their defense of slavery was fairly consistent. Slavery had a greater impact on the society of Jamaica than did imperial relations.[83]

These social factors do much to explain the racist attitudes of Edward Long for he can certainly be considered a racist. "And such is the mirror of almost all these conjunctions of white and black! Two tinctures which nature has dissociated, like oil and vinegar."[84] Yet it is perhaps all too easy to demonize him for it just as he often did to Africans. To take such a stance, however, would be to do injustice to our subject matter and to greatly project modern norms of justice and humane behavior into his world. Long's racism is not as consistent or vehement as a few selections from his writings might indicate, and thus must be tempered by mentioning the broader range of his emotional character before we go on to analyze his scientific expectations. He neither demonizes the African race and science as one might suppose, nor does he glorify the West and its achievements without indicating their many flaws and imperfections.

In his discussion of domestics, he attacks white British servants while praising their Negro counterparts. "[I]n Britain there is no one class of people more insolent and unmanageable…their willful waste, idleness, profligacy, ingratitude of disposition, and ill behavior in general are universally…complained of…. The Negroes…are more orderly, and obedient…than may be expected from ordinary white domestics."[85] What is perhaps surprising about his attacks on white domestics is that they sound just like his attacks on slaves. When drawing similarities between the 'Aegytpians' and Negroes, he criticizes both for similar traits, "The Negroes seem to conform nearest in character to the Aegyptians…They were a people without taste, without genius, or discernment; who had only ideas of

grandeur ill understood: knavish, crafty, soft, lazy, cowardly, and servile…"[86] In both instances, traits which are disliked are used to characterize groups as inferior (the first case is done so regardless of race.), notice that certain criticisms are common: inefficiency, laziness, dishonesty, and stupidity.

When one analyzes his arguments against the mixture of the two races, it is important to note that his complaints and worries are not based on the biological consequences but rather on the potential loss of European culture that might result from such unions. The problems with these liaisons are postulated at both the organizational and behavioral levels of a society. That a majority of transplanted Europeans chose promiscuity and licentiousness over marriage meant to Long a dissolution of society given that it was upon this institution that society rested.[87] When men did not know who their legitimate children were, an inheritance could be infinitely fought over. Though he does not draw the following conclusion, it is easy to see that such a social structure would have a highly negative effect on the acquisition and growth of wealth as more resources would be spent on the resolution of these highly uncertain (and probably irreconcilable) claims than it would otherwise. It was a very inefficient generational transfer of economic power. "For this reason, the begetting an illegitimate child is reputed a violation of the social contract."[88]

At a behavioral level Long complains about the influence of either the Negro mother or domestic on the child. The problem with these behaviors stemmed from their lack of frugality, and (we might now say) modernity. In regions where these mixed breeds grew up without European influences, the results were short of disastrous—

> We may see, in some of these places, a very fine young woman awkwardly dangling her arms with the air of a Negroe-servant, lolling almost the whole day upon beds or fetters, her head muffled up with two or three handkerchiefs, her dress loose, and without stays. At noon we find her employed in gobbling pepper-pot, seated on the floor…. In the afternoon she takes her siesta as usual.[89]

As one can observe, Long's complaints about racial mixture really have nothing to do with racialism or the potential loss of intelligence (one would reasonably postulate), but rather are based on their potential negative social consequences. If we concede that industrialization and modernization presuppose a specific set of values (efficiency, frugality, attention to detail) and social structures (marriage, legitimate children, education) in order to be successful, then the protection of these were of enormous importance to a man who came from that

society yet resided in a multicultural community. Jamaica, as Long fearfully observed, was a cultural melting pot whereby the vast majority of its members did not share the same beliefs. That Africans were from a different economic and social structure obviously meant that their values, expectations, and assumptions directly collided with those of the British who brought them in the first place.[90] Should the cultural influence have grown from Africa to England rather than the other way around, we might postulate that this cultural encounter would have had a negative influence on the structure of British society and the Industrial Revolution it helped engender. If this influence is what Long feared, then racism can be seen as an attempt to preserved cherished social customs, institutions, and perhaps unknowingly a revolutionary production process.

If from these two examples—Long's criticism of white domestics and his cultural arguments against multicultural liaisons—questions should be raised concerning the absolutism of his racism, we can turn to a third, medicine, which again brings into question oversimplified characterizations of his thought.

Long may have denied the validity of any African science, but he also was quick to note that Western medicine had yet to be awarded any special standing. Though he is apologetic in his comments, he is nonetheless honest and forthright with respect to Western medicine's own deficiencies—a critical approach surprisingly absent in Sloane.

> …it may be necessary, perhaps, that I should make some apology for having trespassed thus far upon the province of physicians…. yet it cannot be denied but much still remains to be said: for the science of physic, like other human activities, is far too complex in its nature, and admits too comprehensive a variety of observations and experience, to derive more than a partial, progressive improvement from the practice of many physicians, even applying their thoughts to it incessantly during their lives. After a series of ages, it is perceived still very short of perfection…[91]

Perhaps what is even more surprising, in light of the common derogatory tone throughout the work, is that at times he even favors African medical practices over those of Europe (and in the process sounds very much like current holistic healers),

> The chief medicaments among the Negroes are lime juice, cardamons, the roots, branches, leaves, bark, and gums of trees, and about thirty different herbs. The latter have been experimented in many cases wonderfully powerful, and have subdued diseases incident to their climate, which have foiled the art of the European surgeons at the factories.[92]

There are obviously conflicting viewpoints, if not attitudes, throughout the text. If there is no African science and Africans are devoid of genius or inventiveness, how can it be that some features of 'their' science are better than 'ours'? If the 'science of physic' is as difficult to advance as Long recognizes, why should one culture's science be accorded higher distinction over another's? When Long's statements are compared to one another, they raise some questions with regard to the superiority of one science over another and the corespondent intelligence behind these sciences.

Why should Long then have argued that Negroes had no sciences and hence were of a species more akin to animals than man? To answer this we have to turn again to what he has to say with respect to medicine. While social factors play the necessary causes underlying Long's racism, it is in the intellectual realm where we find the sufficient causes for racialism's existence. It is only in the unverbalized assumptions of his comments that, when properly answered, give legitimate grounding to racialism in its eighteenth century context.

> Brutes [animals] are botanists by instinct; whether man in his rude state possesses any similar instinct we are uninformed, but probably is in the affirmative…*the Negroes generally apply them [herbs] at random, without any regard to the particular symptoms of the disease; concerning which, or the operation of their materia medica, they have formed no theory*…[description of a monkey's treatment of a wound]…From what source did these monkies derive their chirurgical skill and knowledge? From the same, no doubt, whence the Negroes received theirs—the hands of their Creator; who has impartially provided all animals with means conducive to their preservation.[93] [my italics]

In this particular passage, Long relied upon his observations of the thought processes of African slaves to justify his linkage between them and animals while inversely disassociating them from Europeans and (more broadly speaking) humans. Contrasted to European humans who definitively have very 'concrete' mental models which lead to the purposeful analysis of herbs, the inferior species do not have such models. Consequently, they apply different treatments haphazardly, 'unconsciously', and inefficiently. While the survival of man is the result of his willful and purposeful (hence conscious) behavior, the survival of other species is mitigated by forces outside their control (i.e. God or the unconscious instinct for survival). There are three important issues with respect to scientific innovation: random behavior, the establishment of correlation, and hypothesis formation (models).

In sharp contrast to Sloane, who believed that scientific progress was not mediated by hypothesis (either in formulation or testing) but rather by the accumulation of data, Long was what might be called a rationalist. While valuing hypotheses and theories in the understanding of nature, Long is also guiding himself by a particular model of what scientific progress entails—the usage of models. Whereas Sloane held a model-free conception of scientific progress and was thus was highly relativistic at an ideational level, Long's model-within-a-model allows him to establish an ideal by which other sciences could be judged and categorized. While judgment is entirely bypassed in one, they form the core of the other. Models, according to Long, are not only necessary for scientific progress and to define science, but they are the distinguishing marks of what being a human was. No models meant no science and hence no human.

Had Long encountered and studied Sloane's thought processes like he studied those of slaves, he too may have come to the conclusion that Sloane himself was of an inferior species given that there is practically no model testing throughout the corpus of Sloane's writing. As has been mentioned before, the *Voyages* manifests a very priority-free approach toward data gathering—everything is taken in regardless of what their connections might be and thus making it very analogous to random assessment of herbs by Africans. Though it might certainly be said that Sloane did operate within existing medical models which greatly narrowed down the range of his therapeutics (prioritizing through humoralism), in the strictest sense of the word, Sloane's strong empiricism dictated against model building and testing. It is in this manner that Long projects his rationalism onto the African race, something of questionable merit given that all strict European empiricists would also be regarded as subhuman as well. It is this hazy rationalism which allows him to ground racialism in what appeared to many to be convincing evidence of African intellectual inferiority.

Long is entirely unaware of the wide range of data and cognitive modeling which may exist. He invalidly uses the absence of correlation between visible clinical symptoms and anatomical changes in the African doctor's analysis as a basis of intellectual censure. Yet there is practically an infinite range of set associations that the mind can make, and can easily be 'distracted' in making the most 'appropriate' proximate associations.[94] One cannot tell before hand which are the two objects that, out of a multitude of perceived and ignored objects, will have the proper association or connection. These can only be learned through manipulation, experience, experiment, time, and whatnot. We, for example, may notice that it took several thousands of years before "Europeans" began to study the correlation between clinical symptoms to anatomical changes. Even when autopsies

are performed, as the African in fact did long before the European, there may be a different set or kind of correlation that are just as 'incorrect' (i.e. studying a tumor as a sign of another's animosity instead of analyzing it as an indication of biological changes). We cannot assume that what is now commonplace and 'commonsense' knowledge or 'method' (the study of a particular set of correlations between a particular set of objects) was just as immediately self-evident to past thinkers as it is to us—an important and pervasive theme in the history of science.

Certainly the African did seek to make correlations by tracing the similarities between one set of phenomena and another. As Robin Horton points out, this is a universal feature of all thought which gives a certain general commonality to scientific and 'prescientific' thought.[95] As we have seen, the African medicine man (or thinker) did make correlations between different aspects of the natural world, and not just to the 'supernatural' world as G.E.R. Lloyd would have us believe of all prescientific thinking.[96] Observing the similarities between human convulsions and a squirrel's behavior, the African explained and treated the former in terms of the latter. Again, as was so common to Europe in the seventeenth century, he attempted to transfer highly valued properties or characteristics from one object to another. The taking of a successful person's hair as a talisman to obtain that person's success was no different from the European's use of red wine, which looks like blood, to treat anemia, a deficiency of blood. Broadly speaking, the analogical thought processes between the two groups was the same. That the African did not make the same exact set of associations as his European counterpart were not fault of his intelligence to blame, but rather the result of the particular models being utilized. The intellect was just as inferior, or superior, in one group as it was in the other.

Random behavior actually seems to have been even more important for the African than the European.[97] In Long's implicit European herbal researcher, his research behavior was systematic because he knew the category of things in which to look for cures—i.e. botanical species along a strictly confined line (i.e. herbs). However, when the range of potential cures is much wider, as in the African case that could include any botanical species, animal skins, minerals, dead ancestors, or gods, this systematic analysis becomes rather impractical and impossible because there are simply too many things to analyze. (We can only be systematic about sets which can be analyzed within a reasonable amount of time.) Under such circumstances, random attempts become much more efficient than systematic analysis in that the former will cover a wider range of subsets at a much faster rate and hence be more likely to reach 'discovery' than the systematic procedure

which would only move to another subset after it has finished the one it is currently operating in. Since the criteria of 'cure' is rather open, this random methodology works rather efficiently within the limitations of its operating paradigm. It gives the medical practitioner greater creative leeway in methodology and interpretation (and also, from a sociological level, greater power).

We may note that random 'medical research' was also very common to many indigenous medical practitioners. Goonatilake describes the 'discovery' process of the Pinatubo Negritos of the Philippines, who constantly are trying new things without any seemingly 'rational' process (i.e. no theories being tested), as Long had commented of African slaves.[98] The Chinese were also similarly accused in 1770's for not having testable theories, "for failing to probe beyond specific findings to underlying principles and for disregarding the necessity of 'exactitude' in observation and investigation."[99]

One assumption underlying Long's and other European's judgments, of course, is that of the Baconian paradigm—knowledge is power. Or, we should say, the false assumption (the overgeneralization of this paradigm) was that only by conscious and cognitive processes could humans gain control and manipulation over the world, and hence improve their overall material well-being: i.e., that power strictly equated only to knowledge and nothing else (i.e. only knowledge is power). The historical fact, however, is that a treatment might be of biological value (i.e. that it can cure) regardless of the flawed supernatural explanations behind it. E. L. Cerroni-Long pointed out that the skin of the African clawed frog used in tribal medicine contains magainias, a powerful antibiotic.[100] The truth is that a lack of knowledge (knowledge defined as conscious information), is not necessarily a lack of power (i.e. random and not fully conscious behavior, historically speaking, is also power). In other words, a lack of knowledge did not necessarily prevent one from making a 'discovery' of therapeutic value, although certainly it would have prevented either our conscious realization of having discovered something new, or a conscious awareness as to the 'true' source and cause of that discovery.

There is another false assumption Long makes with respect to scientific progress—

> It is astounding, that, although they [Africans] have been acquainted with Europeans, and their manufactures, for so many hundred years, they have, in all this series of time, manifested so little taste for the arts, or a genius either inventive or imitative. Among so great a number of provinces on this extensive continent, and among so many millions of people, we have heard but of one

> or two insignificant tribes, who comprehend any thing of mechanic arts, or manufacture…

Long assumed that in the process of cultural contact, Africans would be able to revolutionize their cognitive structures through borrowing or cultural diffusion. That such a diffusion, with respect to industry or medicine, hadn't occurred was to him valid evidence for their mental inferiority. We might observe that the same rationalist underpinnings of his first critique are also in operation here. That science progressed through hypothesis innovation and testing meant an emphasis on genius as the functioning agent at the expense of the more elaborate and everyday infrastructures supporting this innovation—previous intellectual tradition, modes of communication and preservation of knowledge, technology, available data, social structure, and so on. That African tribal-agricultural communities were entirely different in many aspects from the newly emerging industrial Britain was not perceived and hence unrecognized by Long. He presumes a homogeneity of culture and society; for him, transfers should always occur regardless of whether the receiving community have corespondent infrastructures (intellectual, social, and technological) receptive to these innovations.

Yet such a process of cultural exchange and diffusion had a greater likelihood of occurring during Sloane's time than in Long's. As we have seen, the medical epistemologies of seventeenth century Britain and Africa were remarkably similar. Had visiting physicians been able to overlook the most apparent differences in terminology and therapeutics, a true process of cultural exchange would likely have occurred. Whether this exchange would have been one of 'scientific ideas' (is humoralism a science?), or what the particular direction of this exchange might have been are irrelevant issues altogether. However, that British medicine was undergoing a process of modification since that time meant that as the nineteenth century approached, it became increasingly harder for such an exchange to take place. The aspects of British medicine which were congruent to African medicine, and which hence could serve as bridges connecting the two, were quickly vanishing in this period.

Certainly by the beginning of the nineteenth century the analogical epistemology underlying humoral medicine had been overturned throughout much of Europe. This was partly because the bodily mechanisms which had previously been impervious to observation, and hence forced an initial reliance on analogy as a source of explanation, had become scrutinizable. Rather than construct nature through the postulation of humoral flows, practitioners were beginning to identify different aspects of this mechanism and their corespondent interactions.

Morgagni's comprehensive work of 1761 sought to trace illness to internal bodily changes rather than external stool compositions. The identification of oxygen in 1774/5 provided evidence for another cog in life's machine. Though certainly this 'mechanization' of biology and medicine was not fully developed until the first half of the century,[101] by 1800 the rejection of the analogical epistemology underlying humoralism had become public and formal. As John Pereira then wrote in his *Modes of Ascertaining the effects of medicine*, the use of red wine to treat anemia could not longer be justified on the basis of its sensual similarity to blood.[102] The cognitive bridge to the 'Antients' and Africa had thus been severed. Though we haven't quite reached it, with Edward Long in the 1770's, Europe is at the edge of this medical conceptual revolution—a revolution that to this day still hasn't occurred in much of African medicine.

That Long should be so influenced by particular conceptions of scientific progress which placed so much emphasis on genius are not fault of his own. The history of science would not become a profession until the 1940's, and even then these illusory conceptions were in their nascent stages and very pervasive.[103] Pierre Duhem, one of the most influential innovators of the field during the late nineteenth century, eloquently attacked this prevailing view,

> The history of sciences is falsified by two prejudices which are so much alike that one might conflate them into one only. It is commonly thought that progress in science is made by a succession of sudden and unexpected discoveries and thus, so one believes, is the work of men of genius who have no precursors at all……Great discoveries are almost always the fruit of slow and complex preparation, which is pursued in the course of the centuries. The doctrines which are propounded by the most powerful thinkers result from a multitude of efforts which are accumulated by a crowd of obscure workers…A too simplistic history leads us to admire them [geniuses] as colossi born through spontaneous generation—incomprehensible and monstrous in their isolation.[104]

This skewed self-awareness of what the nature of the scientific development then taking place in Europe thus goes very far in explaining European attitudes towards Africans as much as the disparities of scientific levels do. If one believes that scientific innovation is solely the result of genius, then in those regions which manifest so little indication of scientific progress comparable to the West, one would come to the conclusion that they are also 'preceded' by a lack of genius. The two views—one a historiographical tradition and the other a political justification—thus went hand in hand. Although men would disassociate inferiority

from a right to enslave as Lincoln, Jefferson, and Franklin did, they would still believe in the innate inferiority of the African.[105] This century's research in the history of science has proven this monocausal view of scientific progress to be wrong and incomplete. Obviously, we then need not concur in its consequent racialist conclusion.

These simple yet false European assumptions, however, have been of a tremendous consequence in the colonial history of Western and African relations and made the 'black race' coequal with stupidity—an idea that has yet to be laid to rest. These assumptions helped give meaning, loaded with the weight of historical inequities and countless sufferings, to the word 'race.'[106]

Yet why was African medicine so stagnant? It is hard to say, and it is a question that has yet to have been seriously researched. Unfortunately for the African, the difficulties he faced were so numerous and complex (we may from the future now validly assert with the certainty of our own successful knowledge) at the time of the colonial encounter, that, unlike the European, the simple accumulation of experience-observations or the 'realignment' of cognition would not have been sufficient to lead it to appropriate model building. A Sydenham in Africa would have been of entirely no consequence to medical revolution or innovation there—Sydenham's innovations were only appropriate in a seventeenth century European context. Pervasive 'problems' in his community and environment beset the African. Like many a car problem, one difficulty compounded another. The African needed an ocular technology that would expand his senses, yet to do so he needed glass and iron making as well (he did have the latter). He needed precision, yet for this he needed an arithmetic, a math, which in turn required a written literature as mathematics is primarily visual in nature.[107] He needed a recorded history to transfer detailed knowledge from one generation to the next, yet these again precluded a paper, or perhaps the printing press. African communities tended to be very small and hence to have a very low degree of labor division.[108] There were so many technological, cognitive and social obstacles the African 'doctor' needed to overcome, that it would have only been with a God-given miracle, a Greek deus-ex machina, for him to have been able to overcome these to validly and fairly 'compete' or 'collaborate' with the European. This was as true of military encounters as it was of medical ones. The resources which so many moderns take for granted, both man-made and natural, were simply not at the African's disposal; without them, further cognitive medical developments of African systems were nearly impossible.[109]

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How then did the cognitive encounter of the different medical systems affect the European image of the African? It is hard to say given that the outcome was different from what would be expected. In Adas's *Machine as the Measure of Men*, we have very clear and distinguishing levels of technological sophistication between the two communities. Compared to European ships, stone fortresses, and iron weaponry, African technologies—canoes, branched huts, and small utensils—paled in comparison. The differences between the two societies gave ample evidence for racist conclusions about the inferiority of one visa vie the superiority of the other. Advanced western technology provided the means and the justification for the colonial process.[110] We should repeat, however, that these racist arguments as based on technological achievements assume a very oversimplified and incorrect model of what constitutes human 'progress'.

Yet when we turn to the contrasting levels of medicine, they are much more ambiguous and harder to define. It is practically impossible to say that European humoral medicine was significantly better—in terms of efficacy of treatment and even cognitive structure—than African medicine. That their epistemologies were so similar meant that the two could more appropriately be classed together than apart. Though certainly there were rather significant innovations in European medicine in the seventeenth and eighteenth centuries (say Morgagni, Harvey, etc.), European medicine as a whole was rather pluralistic and the quality of this medicine varied from region to region and from school to school. While the term "African medicine" might be a misnomer in the sense that there were many different practices, the term "European medicine" is even more so given that there were qualitative cognitive differences between the different schools that significantly separated one from another. The general therapeutic ineffectiveness of all schools, however, meant that no single one could claim special status from the others.

It would then be hard to argue that Europeans had solid 'medical' evidence pointing to their own intellectual superiority, hence making the role of medicine in the racist image much harder to identify. This is especially so when one considers that of the few truly effective medicines in the European pharmacopoeia at the time, the Peruvian Bark, had been borrowed from the indigenous Indians of South America. Similarly, a very large number of doctors who encountered African medicine inquired into African indigenous herbal therapeutics as Sloane and Long did in Jamaica. Harley lists a few.[111] Though it might certainly said that the

African etiology had a greater number of irrelevant elements (i.e. human intention) to pathological understanding, their therapies were actively sought out by European practitioners seeking to improve their own cures. Hence to claim that medicine played a significant role in the construction of a negative image of the African is to make a dubious claim.

It would also be to skip over the particular cognitive interactions between the two systems. Of this particular question, much more research needs to be made to get a better understanding of how 'doctors' from each region understood the other's medicines. This paper should only be seen as a preliminary inquiry into the topic. It cannot be said that Sloane really was able to understand African medicine. The same thing could be said of Long, but for other reasons. While Sloane's empiricism stimulated a relatively unbiased inquiry into African medicine, it also meant that large portions—the theoretical—would be excluded from analysis. With Long, the situation was different. Though he did inquire into the fullest range of African medicine—both theoretical and therapeutic aspects—the social pressures and perhaps his own character led him to distort this evidence in favor of his racist arguments. While this fact might be taken as historical evidence for medicine's role, the problem remains in that Long is not a representative of medicine, but rather is using what he knows of it to his own purposes. As such, we need to differentiate between the body of medical knowledge (accessible to anyone), and the practitioners and scientists who promote this knowledge (whose participation is restricted). Arguments regarding the particular effects of medicine on the image of Africa remain highly problematic and uncertain.

It should be mentioned that Western assessments of the "Other's" medical beliefs and practices would have generally been invalid prior to the nineteenth century, to add to the complexity of the situation. Sir Hans Sloane and Edward Long simply could not have assessed the validity of another medicine given that they did not know the causes of illness nor the physiology of the body. That humoral medicine was based on analogies because the body's mechanism was 'invisible' to man made such analysis the expression of opinion rather than a knowledge of knowledge. Sloane and Long knew of humors, not of alkaloids. Ironically, it is precisely when significant cognitive differences between the two medicines appear in the nineteenth century that a true assessment of Non-Western medicines could take place. It is under such a differential context that the interactions of the two medicines can be beneficial and remain within the medical realm rather than the social one.

We might also note that Sloane was not treating African medicine with any condescension, but rather as a sort of equal to Western medicine. That he should

be 'projecting' so many European issues is an indication of this. Applying a European 'philosophy' that had itself derived from the conflicts amongst rival European medical groups to African medicine meant placing it on the same epistemological playing field. His reaction to African medicine was no different than if it had been the medicine of the speculative rationalist school. Curiously, his behavior also meant incorporating this Non-Western medicine into the body of Western medicine's historical development. Sloane would 'borrow' what was useful (herbs) and 'reject' what was not (ideas) just as he or anyone else would have of any other European group. With slavery, Africans were caught in the complex web of European conflicts and in the process became part of that web itself.

One feature that could perhaps be studied from this encounter of medicines, with respect to the development of medicine per se rather than the image of Africa, is the incorporation of African herbals into the Western pharmacopoeia. Though it is probably the case that Africans did not directly contribute to the evolving Western medical cognition, at a material level, this might certainly be the case with respect to these herbals. A researcher might proceed by going to the writings of such Europeans to see if the plants collected or written about were in fact later used by Europeans.[112] As such, one would be analyzing a particular set of African contributions to modernity that may have gone unrecognized.

ENDNOTES

[1] Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989), 32-42, 108-22, 133-53. Adas writes about European views of other regions, China and India, as well.

[2] The statement is less true of Harrison than the others. Philip D.Curtin, *The Image of Africa: British Ideas and Action, 178-1850* (Madison: University of Wisconsin Press, 1964); Mark Harrison, "'The Tender Frame of Man': Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860," *Bulletin for the History of Medicine* 70 (1990), 68-93; Megan Vaughan, *Curing their Ills: Colonial Power and African Illness* (Stanford: Stanford University Press, 1991); Carol Summers, "Intimate Colonialism: The Imperial production of Reproduction in Uganda, 1907-1925," *SIGNS* 16, no. 41 (1991), 789-793.

[3] Vaughan, chpt 8. The negative features of her book are a highly unfortunate given that it is genuinely a pioneering one as Adas's in the sense that she is trying

to explore the way in which medicine played a role in the European 'construction of the African'. Her biases, however, greatly skew and diminish the value of the work.

[4] The comment is true of both African history and history of science. For samples in the first sub-discipline see David Arnold, "Medicine and Colonialism, " in *Companion Encyclopedia of the History of Medicine,* ed., W.E. Bynum and Roy Porter (London: Routledge,1993); David Arnold, "Public Health and Public Power: Medicine and Hegemony in Colonial India, " in *Contesting Colonial Hegemony: state and society in Africa and India*, ed. Dagmar Engels and Shula Marks. (London: I.B. Tauris, 1994); E.B. van Heyningen, "Agents of Empire: The Medical Profession in the Cape Colony, 1880-1910," *Medical History* 33 (1989), 450-471; Jean and John Comaroff, "Medicine, Colonialism, and the Black Body," in *Ethnography and the Historical Imagination* (Boulder: Westview Press, 1992), 215-233; Maryinez Lyons, "The power to heal: African medical auxiliaries in colonial Belgian Congo and Uganda," in Engels and Marks, 202-223; Gwyn Prins, "But what was the disease? The Present state of health and healing in African studies," *Past and Present* 124 (Aug. 1989), 157-179.

For samples in the second see Lucille Brockway, *Science and Colonial Expansion: The Role of the Britsh Botanic Gardens* (New York: Academic Press, 1979); Calestous Juma, *The Gene Hunters: Biotechnology and the Scramble for Seeds* (Princeton: Princeton Universty Press, 1989); Roy Macleod, "Passages to Imperial Science: From Empire to Commonwealth," *Journal of World History* 4 (1993), 117-150; Robert A. Stafford, "Geological Surveys, Mineral Discoveries, and British Expansion, 1835-1871," *Journal of Imperial and Commonwealth History* 12, 3 (1984), 5-32; Michael Worboys, "The Imperial Institute: the State and the Development of the Natural Resources of the Colonial Empire, 1887-1923," in *Imperialism and the Natural World*, ed. John M. MacKenzie (Manchester: Manchester University Press, 1990), 164-186.

[5] This point was also made by Don Bates in a conference on medicine in Africa, yet was misunderstood by the African reviewer who portrayed Bates as attacking the 'monolithic' image of Western medicine. Bates, however, was only stating that Western Medicine did not always have a commonly agreed upon set of principles, and that it also had many competing practitioners—thus making it a highly pluralistic system as Africa. The two groups—historians of Africa and historians of medicine—are talking past each other rather than to one another. J.M. Janzen and Steven Feierman, ed., "Introduction: The Social History of Disease

and Medicine in Africa," *Social Science and Medicine,* special issue, 13B, no. 4 (1979), 239-356.

[6] Arnold, "Medicine and Colonialism"; Arnold, ed., *Imperial Medicine*; Roy Macleod and Milton Lewis, ed., *Disease, Medicine, and Empire: Perspectives on Western Medicine and the Experience of European Expansion* (London: Routledge Publ., 1988); Pat Shipman, *The Evolution of Racism: Human Differences and the Use and Abuse of Science* (New York: Simon and Schuster, 1994); Kenneth F. Kiple, *The Caribbean Slave: A Biological History* (Cambridge: Cambridge University Press, 1984). The level of polemicism varies in these works, but even when not pervasive, they still exist. Kiple, for example writes that "In truth the slaves would probably have been better off with their own practitioners, for white medicine in the West Indies was, to put it charitably, of low quality…there was no education or 'proof of qualification." (p. 154) To make such points is to seriously distort the nature of Western medicine at the time as any 'proof of qualification' would have been of no consequence whatsoever to the quality of the medicine practiced on the slave. Even the most advanced practitioners were limited by the 'highest' state of knowledge then, which is rather low by our current standards. Both slave and master shared a common ignorance.

[7] Robert K. Merton, "Insiders and Outsiders: A Chapter in the Sociology of Knowledge," *The American Journal of Sociology* 78, no.1 (July 1972), 9-47.

[8] Katherine George, "The Civilized West Looks at Primitive Africa: 1400-1800: A Study in Ethnocentrism" *Isis* 49 (1958), 62-72; Jack Goody, *The domestication of the savage mind* (Cambridge: Cambridge University Press, 1977), chpt 6; Ivan Hannaford, *Race: The History of an Idea in the West* (Baltimore: Johns Hopkins University Press, 1996); and Nancy Stepan, *The Idea of Race in Science, Great Britain, 1800-1960* (London: MacMillan Press,1982).

[9] Stephen Jay Gould, *The Mismeasure of Man* (New York: W.W. Norton Co., 1981); Stepan, chpt. 2; Comaroff, 1992, 216-222.

[10] Richard B. Sheridan, *Doctors and Slaves: A medical and demographic history of slavery in the British West Indies, 1680-1834* (Cambridge: Camridge University Press, 1985); Ronald L. Numbers, ed., *Medicine in the New World: New Spain, New France, and New England* (Knoxville: University of Tennessee Press, 1987). One should consider that when it comes to the existence of pluralistic systems, there could not have been a greater number of medicines than in the Colonial

Caribbean. This is the case not just because there were two different systems present—generally speaking the British and the African—but more importantly because individual slaves and physicians reflected a great diversity of different schools. Slaves in a particular plantation came from many different groups in Africa, and British medicine consisted of many different schools and paradigms.

[11] Janzen and Feireman; T. Adeoye Lambo, "Traditional African Cultures and Western Medicine," in *Medicine and Culture*, ed. F.N.L. Poynter (London: Wellcome Institute of the History of Medicine, 1969), 201-210; Pierre Huard, "Western Medicine and Afro-Asian Ethnic Medicine," in Poynter, 211-237. The authors recognize problems with the existing literature of the time that are still present. First is that the focus was primarily on Western medicine, while African medicine was barely touched upon. Another point is that the study of 'pluralistic medical systems' (regions where there were a number of different medicines) was a 'nearly untouched topic of research'. One of the issues they go on to study is the interaction between African and non-African (Western and Islamic) medical systems. The problem with the essays in the special issue (which were the basis for a book by the same editors), however, is that they focused on 1) contemporary Africa, 2) institutional changes and 3) changes in African systems as affected more by social factors such as changes in "life conditions" (i.e. politics and famine) rather than cognitive factors. As may be noticed, while the general purpose is the same (the interaction of pluralistic systems), their approach from that intended in this paper vastly differs in that cognition and perception play a minor role in their studies. Needless to say that, with respect to the formation of the Western image of Africa, the focus on the twentieth century in these studies makes them irrelevant given that the colonial image had already been formed.

[12] Jean and John Comaroff, *Of Revelation and Revolution: Christianity, Colonialism, and Consciousness in South Africa,* vol 1. (Chicago: University of Chicago Press, 1991). That they studied general features of both cultures rather than specific points of contact gave the book an unfavorable reception; the second volume of the book was never written. The problem with the criticisms, I think, is the failure to recognize the value of the book's aim and intention. The sixth chapter, "Conversion and Conversation", which comes after discussions of the individual characteristics of each culture, is the most suggestive. In it, we notice how differently each worldview was, and how this led to different perceptions and behaviors. The topics discussed, however, were the politics of space, water, and language—not medical worldviews. While a very suggestive discussion between

Livingstone and an African rainman is included, its was not adequately explored. (P. 210-211).

[13] Pooman Bala, *Imperialism and Medicine in Bengal* (Newsbury Park, Califronia: Sage Publishers, 1992); Charles Leslie and Allan Young, ed., *Paths to Asian Medical Knowledge,* Comparative Studies of Health Systems and Medical Care (Berkeley: University of California Press,1992); Marcos Cueto, ed., *Saberes andinos: ciencia y technologia en Bolivia, Ecuador y Peru* (Lima: Instituto de Estudios Peruanos, 1995); Bernard R. Ortiz de Montellano, *Aztec Medicine, Health, and Nutrition* (New Brunswick: Rutgers University Press, 1990). Luise White, "'They Could Make Their Victims Dulls': Genders and Genres, Fantasies and Cures in Colonial Southern Uganda," *American Historical Review* 100, 5 (1995), 1379-1402.

[14] For biographical information on Sloane see G.R. De Beer, *Sir Hans Sloane and the British Museum* (London: Oxford University, 1953); John Brooks, *Sir Hans Sloane: The Great Collector and his Circle* (London: Batchworth Press, 1954); Arthur MacGregor, ed*., Sir Hans Sloane: Collector, Scientist, Antiquary, Founding Father of the British Museum* (London: British Museum Press, 1944); and British Museum, "Sir Hans Sloane" *British Museum Quarterly* 18 (1953), 1-26.

[15] Brooks, 76.

[16] Ibid., 50. The following of this advice is clear when read at a majority of his entries in the *Philosophical Transactions*.

[17] Hans Sloane, *A Voyage to Madeira, Barbadoes, and Jamaica: With the Natural History of Jamaica* (London, B M, 1707, 1729). All Sloane citations come from the first volume.

[18] Brooks, chpt 5.

[19] To learn about Sydenham and his role in the history of medicine see Joseph Frank Payne, *Thomas Sydenham*. (London: T Fisher Unwin, 1900), chpt. 14; Kenneth Dewhurst, *Dr. Thomas Sydenham (1624-1689), His Life and Original Writings* (Berkeley: University of California Press, 1966), 60-67; Knud Faber, *Nosography in Modern Internal Medicine* (New York: Pual B. Hoeber Inc, 1923), chpt 1; L. J. Rather, "Pathology at Mid-Century: A Reassesment of Thomas Willis and Thomas Sydenham," in *Medicine in Seventeenth Century England,* ed. Allen G. Debus (Berkeley: University of Califronia Press, 1974); Andrew Cun-

ningham, "Thomas Sydenham: epidemics, experiments, and the 'Good Old Cause'," in *The Medical Revolution of the Seventeenth Century*, ed., Roger French, and Andrew Wear (Cambirdge: Cambridge University Press, 1989); Sir George Newman, *Thomas Sydenham: Reformer of English Medicine* (London: British Periodicals Ltd, 1924).

[20] Gavin De Beer, "Sir Hans Sloane," DSB, 458. He writes that Sloane may have abandoned the idea of humors because "[humoral theory] could not explain the fact, made evident by experiment that quinine reduced fever." It seems that DeBeer is overgeneralizing Sloane's empiricism into a formal rejection of humoralism. See also De Beer, *Sir Hans Sloane*, 71.

[21] Audrey B Davis, "Some Implications of the Circulation Theory for Disease Theory and Treatment in the seventeenth Century," *Journal of the History of Medicine and Allied Sciences* 26 (1971), 28-39.

[22] Ibid., 34.

[23] Thomas Willis expressed an increasingly pervasive opinion among the medical elite when he wrote in 1684, "The Mass of Blood, by the Opinion of the Antients was thought to consist of four Humors…yet in our Age it began to be a little susptected…For in truth Blood is an only humor; not one thing about the Viscera…nor is it moved at one time by Phlegm, and another time by Choler." Ibid., 48.

[24] Rather, 75.

[25] MacGregor, 15.

[26] Sloane, *Voyage*, liv.

[27] Ibid., xcvi.

[28] Ibid.

[29] Hans Sloane, "A description of the Pimienta or Jamaican Peppertree…," *Philosophical Transactions* 16 (1686-1692), 463-464.

[30] Hans Sloane, "A description of the cortex winteranus…," *Philosophical Transactions* 16 (1686-1692), 467.

[31] Hans Sloane, "Symptoms on eating the seed of henbane…," *Philosophical Transactions* 38 (1733-1734), 99-101. Sloane's comments throughout the *Transactions* mostly describe botanical specimens or clarify what exactly the name was of the object being dealt with. Sloane does not really discuss his medical cases, which makes this article unusual. I couldn't tell whether he was writing it or merely relaying the information of another; I think that it was his. In either case, he neither edits out the humoral treatment nor make any negative comment with respect to it. The lack of theoretical emphasis of the *Transactions* when Sloane became an editor annoyed some.

[32] Curtin, *Image of Africa*, chpts. 3, 7; Harrison, passim; Daniel R. Headrick. *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981), chpt. 3; Philip Curtin, *Death by Migration: Europe's Encounter with the Tropical World in the Nineteenth Century* (Cambridge: Camridge University Press, 1989).

[33] Sloane, *Voyage*, xc.

[34] Ibid.

[35] Ibid., liv-lv.

[36] Hans Sloane, "A further account of the Contents of the China Cabinet…," *Philosohpical Transactions* 20 (1698), 461-2.

[37] We need not project either Western historical frameworks or the same standards of evidence onto non-Western scientific histories. Whereas we need much factual evidence for Western science, precisely because it changed so quickly (discontinuous), that African science was so 'unrevolutionary' (continuous) means that the criteria of evidence can be loosened and stretched out across broader periods of time. Paradoxically, it is this 'stagnation' which can be so historically beneficial to African studies.

[38] J.M. Janzen, "Ideologies and Institutions in Precolonial Western Equatorial African Therapeutics," in *The Social Basis of Health and Healing in Africa,* eds., Steven Feierman and John M. Janzen (Berkeley: University of California Press, 1992), 196-8.

[39] Ibid., 198-201.

[40] Thomas Winterbottom, *An Account of the Native Africans in the Nieghbourhood of Sierra Leone To Which is Added An Account of the Present State of Medicine among them.* 2 vols. (London: Frank Cass and Company Limited, 1803) reprint (New York: Barnes and Noble, 1969), 1: 252.

[41] Ibid., 255.

[42] Carolyn E. Fick, *The Making of Haiti: the Saint Domingue Revolution from Below* (Knoxville: The University of Tennessee Press, 1990). Fick's book focuses greatly in describing the predominant role these beliefs played in the revolution.

[43] C.L. R. James, *The Black Jacobins: Toussaint Lourverture and the San Domingo Revolution* (London: Allison & Busby, 1980). As described by James, Leclerc's expedition to Haiti, despite the initial optimism and pomposity, was an abysmal failure, vividly described in James. British expeditions followed a similar path. See David Patrick Geggus, *Slavery, war, and revolution: the British occupation of Saint Domingue, 1793-1798* (Oxford: Clarendon Press, 1982) and David Patrick Geggus, "Yellow Fever in the 1790's: The British Army in Occupied Saint Domingue," *Medical History* 23 (1979), 23-58. While Leclerc's expedition lost 25,000 of 35,000 men in nine months, death rates for the British averaged about 75% per annum. Ibid., 49-50.

[44] Una MaClean, "Choice treatment among the Yoruba*," in Culture and Curing: Anthropological Perspectives on Traditional Medical Beliefs and Practices,* ed., Peter Moreley and Roy Wallis (Pittsburgh: University of Pittburgh Press, 1978), 162.

[45] George Way Harley, *Native African Medicine; with special reference to its practice in the Mano tribe of Liberia,* 2d ed. (London: Frank Cass and Company, 1970), chpt 6.

[46] Ibid., chpt 2.

[47] Charles M. Good, *Ethnomedical Systems in Africa: Patterns of Traditional Medicine in Rural and Urban Kenya*, (New York: The Guilford Press, 1987), chpt. 5.

[48] Christopher Davis-Roberts, "Kutambuwa Ugonjuwa: Concepts of Illness and Transformation among the Tabwa of Zaire," in Fierman, 1992, 376-392. The use of the word "biomedicine" by some medical anthropologists to represent Western as opposed to African medicine is rather odd, and seems to continue the old prejudices that they are trying to avoid. It somewhat implies that it is more

biological than the other, yet in fact, both are just as 'biological'. Each group formed views of biological phenomena with the tools (conceptual and material) at their disposal; one is not necessarily any less 'biological' than the other. That Western medicine can know biological mechanisms makes it more 'empirical' than African medicine which did not have access to nor could explore these mechanisms yet had to account for them in some manner.

[49] Good, *Ethnomedical Systems*, 29. Nancy Gonzalez's reaction following the Browner article points out that 'natives' rapidly become aware of the benefits of 'biomedicine'. In other words, that a 'meaning-centered' approach (such as that found in Byron Good's book) should neither attack the 'rationality' of Western Medicine nor idealize local traditions into rigid and static compartments. This approach itself was a reaction to doctors in the field who too quickly dismissed local practices without a thorough investigation; their ethnocentric attitudes led them to unjustifiably force individuals away from local traditions.

[50] Dale Bisnauth, *History of Religions in the Caribbean* (Trenton, NJ: Africa World Press, Inc., 1996), chpt. 4. Interestingly, one of his main points is to show the continuity of African religion, which we here refer to as medicine. Janzen makes a similar argument in other works.

[51] Susantha Goonatilake, "Modern Science and the Periphery: The Characteristics of Dependent Knowledge," in *The "Racial" Economy of Science: Toward a Democratic Future*, ed. Sandra Harding (Bloomington: Indiana University Press, 1993), 266.

[52] Mary E. Fissell, *Patients, Power, and the Poor in Eighteenth Century Bristol* (Cambridge: Cambridge University Press, 1991), 1, 20-1; M. Weatherall, *In Search of a Cure: A History of Pharmaceutical Discovery* (Oxford University Press, 1990), 19.

[53] Guy Williams, *The Age of Agony: The Art of Healing, 1700-1800* (Chicago: Academy Chicago Publishers, 1975), chpt 1; Lester S King, *The Medical World of the eighteenth Century* (Chicago: University of Chicago Press, 1958), chpt. 6.

[54] Empiricism had not yet revolutionized medical theory in the seventeenth and eighteenth centuries; it would continue to march slowly forward. Yet even at a time when there existed the underlying chemical concepts, there was the propensity to overgeneralize. For example, when first discovered, alkaloids were used as

placebos for all sorts of diseases. Erwin H. Acherknecht, *A Short History of Medicine*, (Baltimore: Johns Hopkins University Press, 1982), chpt 13.

[55] Lester S. King, *The Medical World of the eighteenth Century* (Chicago: University of Chicago Press, 1958), chpt. 6.

[56] Sloane. *Voyage*, liii-liv. It seems to me that this "Jamaican" medicine was accurately described by Sloane rather than saying that he distorted its aspects. That slaves did not know one another, they had to recreate their culture by either remembering African traditions and borrowing European ones from their masters, which we see in this quote. For mixture of slaves see Marvin Harris, *Patterns of Race in the Americas*, (New York: Walker and Co., 1964), chpt 4. That bleeding is seldom recorded by other Europeans means that it was not a African practice but rather a borrowing of British therapeutics.

[57] Ibid., xlviii. His concept of religion is restricted to that of a Judeo-Christian monotheism; without a belief in God, there was no religion.

[58] Ibid., xii, xviii-xx, xxxi, xlvii-L, Lvi.

[59] Harley, op. cit. (46).

[60] Sloane, *Voyage*, b.

[61] Thomas Sydenham, *The Works of Thomas Sydenham*, trans. R. G. Lantham. col. 2. (London: Sydenham Society, 1848), 173.

[62] Sloane, *Voyage*, xl-cliv.

[63] Ibid., xl.

[64] Sydenham's disdain for these made him a vociferous critic, yet an alienated contemporary. Payne, 234; Newman, 28. The popular reaction to his innovations, for example of cooling the body in the cases of smallpox, were very negative. "What storys of extravagancy and folly have the talk of prejudiced people brought upon me…How much some of my own faculty have fomented and increased these reports…I should not make these reflections, how true soever, had I not been used by some of them with these greatest indignitys beyond almost the suffrance of a man to the endangering not only of my reputation and lively hood but even my life it self…" Dewhurst, 103-4.

[65] For a review of these see H J. Braunholtz, *Sir Hans Sloane and ethnography* (London: British Museum, 1970).

[66] De Beer, 156.

[67] Sloane, *Voyage*., b.

[68] Hans Sloane, "Conjectures on the charming or Fascinating Power attributed to the Rattle-Snake…," *Philosophical Transactions* 38 (1733-4), 321-331.

[69] Comments such as "God heals and the Doctors take the Fee" or "When a Nation abounds in Physicians, it grows thin of people" were not unusual. Many a patient such as Samuel Johnson would actually tell his doctor what to do and prescribe; the doctors' financial dependence on their patient made them hesitant to irritate, and thereby loose, their sources of income. Roy and Dorothy Porter, *Patient's Progress: Doctors and Doctoring in Eighteenth-century England* (Stanford: Stanford U Press, 1989), 54-58.

[70] To understand how our beliefs (theories) affects perception and behavior see Shigehisa Kuriyama's "Visual knowledge in classical Chinese medicine," in *Knowledge and the scholarly medical traditions* ed., Don Bates (Cambridge: Cambridge University Press, 1995), 226 and "Introduction."

[71] Edward Long, *The History of Jamaica. General Survey of the ancient and modern state of the island*. 3 vols. (London: T. Lownudes, 1774).

[72] Ibid., 2: 353.

[73] Ibid., 356-378.

[74] Elsa V. Goveia, *A Study on the Historiography of the British West Indies To the End of the Nineteenth Century*. (Mexico: Instituto Panamericano de Geographia e Historia, 1956), 53-63; Adas, 12, 77, 114-122, 291; Curtin, *Image of Africa*, chpt 2.

[75] Long, 2: 267-71.

[76] Ibid., 445.

[77] Ibid., 378. Even Sloane is quick to observe from which regions of Africa the most servile and pacific workmen came from.

[78] Op. cit. (33, 44). The European death toll in tropical Africa was equally high. The Sierra Leone company lost about 49% of its staff in the first year. It was also generally expected by the British of at least a 20% mortality rate. Curtin, Image, chpt 7. This high mortality rate prevented the interior colonization from occurring; only when 'technologies' were developed to overcome these obstacles (quinine and gunboats), did such colonization take place.

[79] Long, 378.

[80] Long, 2., 375-377; Orlando Patterson, *The Sociology of Slavery: An Analysis of the Origins, Development and Structure of Negro Slave Society in Jamaica* (London: MacGibbon & Kee, 1967), 19-23; George W. Roberts, *The Population of Jamaica* (Cambridge: Cambridge University Press, 1957), 33-36. That slaves were continually being imported from Africa given their own mortality rates and the high demand meant that they were not bred into slavery, as Long would have us believe, but rather were forced into it.

[81] In such a stratified community, it is hard to imaging what else he would have been given that sugar production lowered working wages and had driven out many small-time planters. Samuel J. and Edith Hurwitz, *Jamaica: A Historical Portrait* (New York: Praeger Publishers, 1971).

[82] *Dictionary of National Biography*. 1889-1901 ed., s.v. "Edward Long"; R.M. Howard. *The Longs of Longville, Jamaica, and Hampton Lodge, Surrey,* 2 vols. (London, 1925).

[83] Goveia, 62-63.

[84] Long, 2: 332.

[85] Ibid., 382-3.

[86] Ibid., 355.

[87] "…the institution of marriage is regarded as one of the main links of society, because it is found to be the best support of it." Ibid., 325.

[88] Ibid. In poor communities, this promiscuity is rather predominant, but interestingly there is a benefit to the women involved. Where there are scant resources, a woman can maximize those at her disposal through these sexual connections to different families. Through these liaisons a greater number of bonds of obligation

and reciprocity are gained, despite the fact that there are also a greater number of children involved (i.e. consumption of those resources). E. Gordon Ericksen, *The West Indies Population Problem: Dimensions for Action* (Lawrence: The University of Kansas Publication, 1962).

[89] Long, 1: 279.

[90] The comment is also true when one considers their position in the British slave economic system—there was no incentive or reward for the slave to be industrious.

[91] Ibid., 2: 581. We might also note that this phrase has a very Sydenhanian attitude to it (i.e. the accumulation of many different individuals' observations).

[92] Ibid., 380-1.

[93] Ibid.

[94] Only in the future may it be known that such correlation will be the correct one; it is incorrect then to use the word 'appropriate' because it assumes that certain connections were 'inevitable' when they indeed are not. We cannot presume the scientific revolution to have been inevitable.

[95] Robin Horton, *Patterns of Thought in Africa and the West: Essays on magic, religion, and science* (Cambridge: Cambridge U. Press, 1993), chpt 3, pp. 80, 87, 90, 93, 102-3.

[96] Lloyd claimed that the Greeks invented science because they discovered nature; that is to say that they couched explanations of the natural world only within this world. For example, rather than explain earthquakes as the result of Poseidon's wrath, Milesian Greeks believed these were possibly due because they the Earth rested on a body of water. We may notice that Lloyd is also trying to place different kinds of thoughts into different categories and assigning to each exclusive properties. He does the same thing with technology, which is used as a contrast to science (and with many 'prescientific' qualities.). "Technological development imply no science, but only guesswork and luck. But while *they involve no conscious theorizing*, they demonstrate a highly developed ability to observe and learn from experience." Yet are these categories valid? African thought certainly did have supernatural elements in it, but these were not the only characteristics; like Greek thought, it sought to couch explanations of natural phenomena also within the

natural world. G.E.R. Lloyd, *Early Greek Science: Thales to Aristotle* (New York: W.W. Norton, 1970), 8-9, 3.

[97] All random behavior, however, is an important aspect of all scientific innovation and progress. Dean Keith Simonton, *Scientific genius: A psychology of discovery* (Cambrdidge: Cambridge University Press, 1988), chpts 1,4, 7.; John Ziman, *Prometheus Bound: Science in a dynamic steady state* (Cambridge: Cambridge University Press, 1994), 107-8, 145, 190, 254, 270, 276.

[98] Harding, 266.

[99] Adas, 84-5.

[100] C. H. Browner, Bernard R. Ortiz de Montellano, and Arthur J Rubel, "A Methodology for Cross-Cultural Ethnomedical Research," *Current Anthropology* 29 (1988), 690.

[101] Achromatic lenses were introduced in 1830, Laennec's stethoscope in 1819 (replacing the urinal as the sign of the medical profession), urea (and organic chemistry) synthesized by Wohler in 1828, the pepsin enzyme discovered by Schwann in 1833 (responsible for digestion), and alkaloids (such as morphine,1806, strychnine, 1818, and quinine, 1820) were isolated from their botanical homes. Physiology would now be viewed in chemical rather than humoral terms. That all living beings, both plants and animals were made up of cells, also emerged at this time (1839-Schwann). By the mid nineteenth century the machine of life had become visible to man, and in the process allegory became an obsolete research tool. Acherknecht, *A Short History of Medicine*, chpts 11-13; Richard Harrison Shryock *The Development of Modern Medicine: An interpretation of the Social and Scientific Factors Involved* (Madison: The University of Wisconsin Press, 1979), chpts 6, 7, 9, 10, 13.

[102] Weatherall, 19.

[103] H. Floris Cohen, *The Scientific Revolution: A Historiographical Inquiry* (Chicago: Univeristy of Chicago Press, 1994), 80.

[104] P. Duhem, *Etudes sur Leonard de Vinci: Ceux qu'il a lus et ceux qui l'ont lu* 3 vols. (Paris, Hermann: 1906, 1909, and 1913), I, 1-2; quoted in Cohen, 48, n. 72.

[105] Gould., chpt 1.

[106] There are a number of problems with the concept 'race'—both from the 'object' and the 'subjects' point of view. Identifying a different biological group has been very common throughout history and is usually done for emotional and political reasons; man has always been a 'racist.' For example, the Europeans are usually characterized as one race, but when new immigrants posing economic threats to the existing residents arrive, as the Irish did in the 1850 to America, these were branded as an 'inferior race'. Similarly, the Japanese classified the Burakumin as a different race—inferiors because these were of a different origins (i.e. Koreans). Gloria A Marshall, "Racial Classification: Popular and Scientific," in Harding, 116-127.; see David Hacke Fisher, *Historian's Fallacies: Toward a Logic of Historical Thought*. (New York: Harper Collins, 1970), 232-236 Marshall is right to criticize scholars studying these things as merely elaborating popular ideas without really taking the time to assess the validity of their own categories.

Aside from personal motivations, however, there are 'objective' problems with such delineation, the most fundamental of which is that the criteria of classification being used are visible traits—i.e. skin color, hair is very subjective. One might use non visible traits in our scheme, such as presence of antimalarial genes or lactase, and wholly new sets and groups would form. According to these different traits, the Scandinavians would be grouped along with the Xhosa (South African) or Fulani (West Africans). Jared Diamond, "Race without Color," *Discover* 115,11 (Nov 1994), 31-37.

Current arguments against the poor in the United States, who happen to be of African descent, are very similar to those against the poor during Victorian England. The problem with the claim that levels of intelligence are genetically endowed (and thus vary with race) is that it prevents addressing the social circumstances which cause such misfortunes. It makes the individual the sole responsible agent for his circumstance without considering how his environment in turn restricts and affects his behavior (and thereby continues the circumstances). A consideration these two very different cases, where the correlation between poverty and race vary inversely, sheds much light on current 'intelligence' debates. John Eyler, "The Sick Poor and the State: Arthur Newsholme on Poverty, Disease, and Responsibility," in *Doctors, Politics, and Society: Historical Essays*. ed. Dorothy and Roy Porter (Amsterdam: Rodopi, 1993).

[107] Jack Goody, *The domestication of the savage mind* (Cambridge: Cambridge University Press, 1977), chpt 6.

[108] Robert Redfield, *The Primitive World and Its Tranformation* (Ithaca: Cornell University Press, 1953).

[109] I do not think we can assume that there could have been radically alternative developments other than the ones that did evolve for certain cognitive achievements. While there is a wide degree of possible variation within established boundaries of a short time span where there are different competing 'models'(for example, a bicycle with one big wheel or with two equally shaped wheels; or the different calculus of Leibnitz or Newton), one cannot really step outside of these boundaries as we expand or widen the time frame of our historical view. How could bacteria ever have been discovered without the microscope? Without a light-bending glass enabling us to see them, how could we have ever been sure that they existed? While my point could easily be attacked (say, by providing another means of discovery), I think it is rather dangerous to assume too great of a developmental relativism. The inherent flaw with it (I think) is that it is a projection of minute variations of the scientific process into generalizations of the entire long-term process itself. It fails to consider the necessary background for new innovations. The danger of such relativism is that it leaves us with the false impression that there could have been a tremendous variety in the means of cognitive achievement when this is rarely the case. Many anthropologists, I believe, implicitly claim this false assumption. To be quite sincere, however, we can never really know of this variation until 'disproven' by its physical creation; to be able to do otherwise, would be to play God. Could a seventeenth century African have even imagined about the possibility of a computer, much less the chemical composition of a star? Such is impossible when your technology is wood based and your science mostly a religion. This is why radically new technologies do seem like 'magic' to everyone—they breach the realm of what was previously though to be an impassable border. They literally change the nature of the real by removing what were previously though to be unchangeable constraints. Until these constraints are 'eliminated', man just had to accept it as reality and operate within and about these limits.

This is not to say that there were no social changes in Western Africa, because there certainly were. The forced shift from subsistence agriculture to the growth of cash crops destroyed the unity of many African families and communities. Jean Allman, "Making Mothers: Missionaries, Medical Officers, and Women's Work

in Colonial Asante, 1924-1945," *History Workshop Journal* 38 (1994), 26-29. One of the effects of colonialism, although at a much later period.

[110] See also Headrick, *Tools of Empire*; Daniel Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940*. (New York: Oxford University Press, 1988).

[111] William Bosman in Guinea (1705), Karl Thundberg in South Africa (1780), T.E. Boswitch in the Cape Coast (1819), T.B. Jenkinson in the Zulu region (1882), Andrew Smith in South Africa (1888), H. Thoms in West Africa (1909), H. Pobeguin in Guinea (1912), C. G. Santesson in Kameroon (1926), etc. Harley., xiv. Thomson, a physian who had been on Jamaica in the 1820's, did the same. See JamesThomson, *A Treatise on the Diseases of Negroes, as they Occur in the Island of Jamaica: with Observations on the Country Remedies* (Jamaica, 1820).

[112] The issue is not discussed in Bep Oliver-Bever, *Medicinal Plants in tropical West Africa* (Cambridge: Cambridge University Press, 1986).

6

Three Variants of (Medical) Race Relations in Jamaica: Sir Hans Sloane, Edward Long, and Dr. James Thomson

> *…for a living being lacking insight into the relation between causes and effects it must be extremely useful to cling to a behavior pattern which has once or many times proved to achieve its aim, and to have done so without danger. If one does not know which details of the performance are essential for its success as well as for its safety, it is best to cling to them all with slavish exactitude.*
>
> *—Konrad Lorenz*

To what extent is scientific theory socially constructed? This issue has plagued the field of history of science, causing a number of acrimonious debates. Though now abated, there still does not exist any sense of consensus as to whether science is socially constructed nor how it is so.[1] It is clear that larger trends in society should be considered and incorporated into historical writing. Yet the connection between them and science remains vague and tenuous. The relation of the individual mind to his membership within the larger community, the relation between the part and the whole, still remains an unresolved question.

It should also be pointed out that in the subfield of Colonial Science, the intellectual interaction between scientists traveling abroad and the indigenous people/knowledge systems they encountered has not been studied. The predominant topics focus primarily on power—either the power one group, the metropolis, had over scientists in the colonies or the power of these colonials to acquire their own centrality. "Internal" issues pertaining to intellectual history per se have not been addressed. Similarly, this subfield has focused only on one side of the study—the Europeans. Indigenous aspects have seldom been incorporated into the story.

This essay is a personal attempt to grapple with these issues—to inquire not only into the impact of the broader society within science, but similarly to look into the interaction of colonials with indigenous knowledge. Hopefully, by looking at both, we will be bringing to life a new motif in Colonial Historiography.

Though many ideas abound about the first question, few seem to have been satisfactorily tested in the historical material. This is rather ironic given that one of the principles of knowledge acquisition in science is the experimental verification of theory. Thus we briefly turn to the historical source and attempt to trace any effect significant social phenomena, such as the relation between master and slave, had upon the science of medicine. If the master judged the slave by his skin, did he likewise judge his slave's knowledge by his own prejudices? Did knowledge claims of the world fit within the same categories as all other held beliefs? In the individual master we find the strongest influences of greater social forces; it is through him that we will try to locate the effect these social processes had on the natural philosopher, or the scientist-medical researcher as they would now be called. Both are aspects of the same person.

Three Englishmen, two doctors and one historian, who went to Jamaica at three different points in time and who interacted with the 'natives' will be examined: Sir Hans Sloane and James Thomson (physicians) and Edward Long (historian). However, the indigenous groups we will be looking at are not Native Americans but rather natives that had been brought over from Africa by the very Europeans. This African community, however, still constitutes an exotic group not previously 'encountered' coming from the western coast of Africa rather than the northern one. There had been a relatively small amount of interaction between the two and thus may also be defined as part of the 'new world.'[2]

The changing economy of Jamaican society during the colonial period had a profound effect upon racial demographics and upon race relations—whatever the numerical correlation may be, the psychological one is concrete and verifiable. The rise of the monocultivation of sugar was followed by a consequent rise in the number of African laborers and of their higher demographic ratio to their English masters. This in turn had a negative effect upon the master's view of the slaves. Fearing the masses surrounding them, white masters mentally placed them in rigid cages. Rather than being exotic, as they had been previously perceived, they became unwanted outcasts. The complex dynamics of race relations in the Caribbean, something only briefly touched upon by this paper, is amply discussed in the works of H. Hoetink. To reiterate, the question that will be asked is whether these social correlations extend themselves into exchanges of medical traditions and of the knowledge, implicit or explicit, embodied within such practices.

I: Sir Hans Sloane

Sir Hans Sloane snugly fits into Hoetnick's insights of race relations.[3] Traveling to Jamaica in 1687, thirty-two years after its acquisition by the British empire, Sloane was making his way into relatively uncharted territory. It was the very 'virginity' of the territory that had enabled the British to conquer it after the miserable failure of the Western Design where an attempt was made to take the Caribbean area away from the Spanish.[4] Sloane's book, can be depicted not only as a travel journal, but also as the attempt to provide the Queen of England with information needed to gain further use of this new territory.[5] Not only is it largely an extensive record of botanical specimens in the island, but provides a wealth of miscellaneous data pertaining to its inhabitants, topography, and weather. Jamaica, or Yamaya as the Indians had called it, was an exotic land. One might argue that this exoticism continued well into the seventeenth century with Edward Long's history which includes not only detailed maps with relevant water depths at harbors but images of luxurious forests, cascading waterfalls, and the like.[6]

The latter half of the seventeenth century was a time when the semi-industrial plantation system with sugar as its principal output had yet taken hold. Many of the first settlers had survived hunting the abundant hogs and cattle that had greatly increased in numbers after their introduction by the Spanish.[7] Quickly depleted, the economy soon focused into a diversified self-subsistence agriculture. There were some sugar and coffee plots, yet sugar was by no means the obvious outcome. Had it not been for a number of diseases that wiped the less labor intensive cultivation of coffee, sugar may not have become the predominant cash crop.[8] It would not be until the early 1700's that sugar would be established as the main crop and that the population demographics between black and white become so lopsided.

Sloane himself writes that the "Inhabitants of Jamaica are for the most part Europeans".[9] Long wrote that in 1658, there were 4,500 whites and 1,400 blacks.[10] Other sources reveal that the numbers were fairly even; in the 1673, the population stood at 8,564 whites and 9,504 blacks.[11] Though the population had drastically changed by 1703 when the growing number of blacks stood at 45,000, contrasted to the relatively even growth of whites at 7,100 in 1722, Sloane's comments seem to have been fairly accurate of his time.[12] The broadly classified "Negro" race did not constitute a threat to their European owners.

"If what is different is regarded as a threat to what is 'ours', dislike will predominate. If what is different is experienced subjectively as fascinatingly strange,

not threatening 'our' own position, it may be observed favorably……one of interest in the exotic nature of the 'others'"[13] This insight by Hoetnik goes far into explaining Sloane's attitudes towards blacks and black culture at a time when blacks do not constitute a real physical threat as a result of their low numbers and poorer resources. Such is their degree of liberty that we even find blacks who are given guns to go into the 'woods', for days at time, to hunt for 'swine' without any trace of concern or worry.[14]

The language of the *Voyages* is one full of sympathy towards the plight of the Africans and goes to some length to reveal their humanity. The brutal psychological impact of slavery is opened to us through his words. Black men commit suicide because they believe that in their death, they will return home.[15] "Whether they die thus, or naturally, their Country people make great lamentations, mournings, and howlings about them expiring…"[16] After seeing the deplorable conditions of a slave ship which had just arrived, he inquires into their well-being, "The Ship was very nasty with so many people on Board. I was assured that the Negroes feed on Pindals…"[17] He was assured, calmed down from a troubling anxiety. We note a sense of concern rather than apathy at what others might later call a preordained suffering; the 'inevitable' need not be so.

Throughout the book we catch glimpses of the English people trying to come to terms with this recent experience of colonialism. Through the questions Sloane addresses about slavery and exotic foods, we can peer into their mind trying to make sense of the very different. How could it be that slavery exists, of how some men could willingly give others to slavery? "The Negroes are usually thought to be haters of their own Children, and therefore 'tis believed that they sell and dispose of them to Strangers for Money."[18] The phenomenon is personalized by the English to the familial level because there is a lack of context and information. He assures us that 'negro' parents are no different and do have such a great love for their children that they will hang themselves if these are given away.[19] How could different people eat such "vastly different Bodies" such as Whales or Elephants? Once again, he assures us that "however strange to us, are very greedily sought after by those us'd to them."[20] The exotic nature of the world drips from his pages uncontained by a ravishing thirst. Sloane's genuine cultural innocence is something moderns have lost.

It is perhaps not surprising then that even though Sloane stayed in Jamaica for only two years, leaving upon the death of the governor he was supposed to be taking care of, he continues for the rest of his entire life to show interest in the exotic by accumulating things from abroad. These collections, eventually growing to 2,111 materials (including botanical) out of which 350 were ethnographic

formed the basis for the creation of the British Museum upon his death in 1753, also funded by his will.[21] Of these 350, 9 came from Jamaica.

The experience was clearly generalized from his Jamaican experience as these materials came from all over the world, such as Africa, North America (incl. Alaska), and South America. His published 'Jamaican Journal' is replete with information on the culture of Africans, the 'other.' He records their music and words to their music ("…Ho-baognion…"), places of sleep, diet, dances, manner of catching fish, sexual relations, and funeral rites. He even looks to see if they have any sort of religion, but "The Indians and Negros have no manner of Religion by what I could observe of them…[their ceremonies] for the most part are so far from being Acts of Adoration of a God…."[22] Sloane, besides functioning as a physician, had also been what we would now call an anthropologist.

The perception of race did not inhibit the unilateral cultural exchange at this time period. Though usually he uses the derogatory word "lusty" in his description of black patients and rarely for white ones, he also uses affectionate terms such as "very sensible" to describe their characters.[23] The only time he genuinely portrays them in a derogatory manner is precisely when they constitute a direct physical threat, as Hoetnick's theory suggests. After discussing the harsh punishments blacks received for 'Rebellions' he writes, "These Punishments are sometimes merited by the Blacks, who are a very perverse Generation of People, and though they appear harsh, yet are scarce equal to some of their Crimes."[24] Despite the humanitarian sympathy he had previously shown, he is unwilling to yield any control when fear of a potential loss becomes an issue.

Even in this case, however, a group is not profanely branded due to some inherent deficiency, but are rather cautioned about due to specific acts. The same is true when explaining the success of "Northern Nations, Goths, and Vandals, who by their Numbers and Strength overcame most parts of the World."[25] Western Europe won, not because of some innate quality, but rather because of contingent factors; this would be an attitude very different from that taken by Edward Long. This victory was likewise not only contingent, but to Sloane, had already ended. They, he continues, "ended not their Victories 'till by coming over the Alps they tasted and drank the Wines, whence they flop'd their Conquests, became Effeminate and not Fruitful." Ignorant of wine, Negros were "fresher, and…much healthier than we."[26] Race is not a concept used to actively distinguish between different groups of people.[27]

It should then not be surprising that Sloane also inquires into African medicine, given his ethnographic interest of black culture and his fairly sympathetic attitude towards the "Negro." "I have heard a great deal of their great Feats in

curing several Diseases…"[28] Yet what may be noticed is that he inquires not into their medical beliefs but rather their medical practice; if he does otherwise, he does not inform the reader. This will stand in sharp contrast to Thomson about 150 years later. Why should a man who clearly reflects an interest in the exotic, who has such diverse interests, who went as a practicing physician not inquire into their medical explanations?

There are a number of possible reasons. To begin with we are unsure as to the exact means of communication between himself and the slaves he encountered. We are not informed as whether he always spoke directly to them or through an interpreter.[29] Coming from different places in Africa, the slaves had to learn the language of their masters to communicate not only with the master but amongst themselves.[30] [How thorough this acquisition may have been is questionable given that slaves generally did not reproduce and were mostly imported] There may have been a language barrier preventing any sort of sophisticated communication.

A more likely explanation lies in his personal and intellectual preferences. Sloane, as a natural historian, was an unabashed empiricist—"…the knowledge of Natural History, being Observations of Matters of Fact, is more certain than most Others, and in my slender Opinion, less subject to mistakes than Reasonings, Hypotheses, and Deductions…."[31] One needed fact, he believes, not opinion or theory to develop knowledge. That African medical explanations incorporated supernatural beings most likely discouraged Sloane from pursuing any such inquiries. If 'Reasonings' are already liable to fallacy, one might argue deities would only complicate the matter further.

As a medical practitioner, Sloane's personal beliefs about the role of theory are very similar. "I desir'd him that we should put off talking of Theory, and come to the Practice, and perhaps we might very well agree in the Medicines he should take, as it very often happens to Physicians, who may disagree in the Theory, and yet agree in the Practice."[32] What ultimately counts as a doctor is that the patient be cured. The patient should be restored to his previous condition as a functioning individual. This one result in practice outweighs any number the theories underlying it. It is this criteria, not his attitude towards 'Negroes,' [by] which will guide his inquiry and which he will use to judge their medicine.

He finds their medicine to be of little merit because it does not cure. "I have heard a great deal of their Feats in curing several Diseases, but could never find them any way reasonable, nor successful in any."[33] Cupping with calabashes, bleeding their patients, plastering their bodies with mud, using very few herbals,

and taking special baths—some practices which were the identical techniques to those used by West Europeans physicians in this period—simply did not work.[34]

II: Edward Long

Though Edward Long was a bigot, he was not always thoroughly so. His Jamaica, that of the eighteenth century, was transformed by the mass production of sugar. The outburst which began in 1675 had become an avalanche in the 1750's and 1760's, the period of Long's stay.[35] Whereas 1,710 thousandweight of sugar was being produced in 1670, the number grew from 33,155 hogshead in 1739 to 78,304 hogshead of sugar, 26,074 puncheons of rum, and 1,020 hogshead of molasses in 1774, the same year his *History of Jamaica* was published.[36] This downpour of sugar had a consequent down pouring of slaves to the island. It was not just that one needed more laborers to produce more goods; the sugar industry was labor intensive thus required a higher exponential numbers of slaves. Whereas a cocoa walk of 550 acres needed about six 'negroes' and four white servants at a cost of about 275 pounds, a sugar estate required at least 250 slaves to be profitable at a cost of 4,900 pounds within a 1,000 acre property.[37] The slave population thus reached peaks of around 200,000 in the late 1770's while the white population slothed at around 18,000.[38] Long had much to worry about.

Whereas Sloane had been a visitor, Long had a vested interest in the island. His father had been a landholder in the city of Longville; it seems that Long 'returned home' to Jamaica upon his father's death to take care of this estate (Long was actually born in England.) Arriving to the island in the mid 1750's, in his twenties just as Sloane had, Long becomes the private secretary to Sir Henry Moore, the lieutenant general. The Long family had intimate connections with other members of the British elite in the island. Long's sister married Moore and Long himself married a Mary Ballard who had been the 'sole heiress' of the Beckford estate.[39] Whereas Sloane's ties were rather sharply cut upon the early death of Christopher Monck, Long's roots had spread deep into Jamaican soil.[40]

It were these social, economic, and emotional ties that moved Long not only to write his *History*, but also to view the 'negro' with such antipathy; the extent to which Sloane accepts the African is the degree to which Long rejects him. Both, nonetheless, still fall within the Hoetnick insight.

> In general, they [blacks] are void of genius, and seem almost incapable of making any progress in civility or science. They have no plan or system of morality among them. Their barbarity to their children debases their nature even below that of brutes. They have no moral sensations; no taste but for women; gor-

> mondizing, and drinking to excess; no wish but to be idle…They are represented by all authors as the vilest of the human kind, to which they have little more pretension or resemblance than what arises from their exterior form.[41]

Long is horrified by the threat slaves represent. The very idea that such a floodgate be opened terrifies him into structuring his mental world in such a way that places other men in a different category where they are deprived of their humanity, where any question of common feeling or equal right is thereby defined as irrelevant and illogical. By keeping them in their mental space, they might perhaps be kept in their social one as well.

Twenty Long pages elaborate why they are a different species, and how such is the order of nature.[42] He opposes any social interaction between white children and Negro domestics "whose drawling, dissonant gibberish they [children] insensibly adopt, and…which they do not easily get rid of."[43] Whereas Sloane believed the Negro breast feeding of white children to be harmless, Long felt it was a "shameful and savage custom…without reflecting that her [wet nurse] blood may be corrupted, or considering the influence which the milk may have with respect to the disposition, as well as health, of their little ones."[44] Sexual unions between the two was the staining of a moral creature by an immoral one,"…these conjugations of white and black…two tinctures which nature has dissociated, like oil and vinegar."[45] Long believed that the different races, though existing intimately beside one another, had to be cleaved apart. Yet one might tell him that it was precisely because blacks stood apart that they constituted such a threat to begin with.

Another factor, besides the physical threat blacks constituted, that may go a long way in explaining Long's attitudes towards blacks, was the fact of their evolving intimacy. Though slaves were being continually exported they came to represent the familiar as opposed to the exotic—different faces but same race or similar cultural groups. During this gradual process of daily interaction in the home and in the field, both groups came to know another and to naturally impose and test their views and values. Hoetnick's 'Law of Decreasing Deviation' states that we become more objective the more different we are from the other; this objectivity is gradually lost as we approach a familiar group. Subtle cultural differences are then overlooked and seen as aberrations from the norm.[46] Although referring to the sociologist, it is nonetheless applicable to Long. His judgments are often based upon the criteria of his group rather than any other. Sir Hans Sloane had not been as consistent.

One would expect a man who holds such a low judgment of the mental ability of another group to ignore and dismiss all of their intellectual products. "It is astounding, that, although they have been acquainted with Europeans, and their manufactures, for so many hundred years, they have, in all this series of time, manifested so little taste for the arts, or a genius either inventive or imitative."[47] One would expect him to be the most close-minded and opposed to inquiring into any facet of their lifestyle which he so detests and objects to. "…and at Benin, Angola, and other kingdoms, they at this day prefer apes, monkies, dog's flesh, carrion, reptiles, and other substances, usually deemed improper for human food, although they abound with hogs, sheep, poultry, fish, and a variety of game and wild-fowl."[48] Yet such was not the case when it came to medicine.

Long is surprisingly open to the medical practices of indigenous Africans. After listing a number of herbs used, he writes, "[the] latter have been experienced in many cases wonderfully powerful, and have subdued diseases incident to their climates, which have foiled the art of the European surgeons at the factories."[49] Not only are medicinal herbs efficacious, but they are better than European treatments. Is this the same man we were previously describing?

Long, in fact, is rather candid and open about the poor state of medicine at the time, something Sloane is contrastingly silent on (perhaps because he wrote to the Queen of England and thus had to maintain his own reputation as a doctor). Whereas Sloane would attribute the inefficacy of a medical treatment to the improper following of instructions, Long goes at some length to chastise the flaws of European medicine.[50] "After a series of ages, it [the science of physic] is perceived still very short of perfection…."[51] This is something Sloane never admits to.

This period in the history of medicine is in fact characterized as one in which doctors affected the body but did not cure it.[52] Their "clysters," "glisters," "emunctories," "vomits," "purgings," and "blistering" of the body to get rid of "distempers," "fluxes," "auges," "depurations of the blood" by "forwarding the eruptions" or ridding the body of "morbific matter" did not really fix the body. Results were inconsistent and unreliable. For this reason, patients often treated themselves and doctors often had to comply with what patients thought best. Comments such as "God heals and the Doctors take the Fee."[53] or "when a Nation abounds in Physicians, it grows thin of people."[54] were not unusual. It would not be until the later half of the nineteenth century and the emergence of germ theory that doctors would begin to clearly cure their patients; their esteem, venerance, and trust would grow as well.[55]

Thus Long's critique of medicine is an attempt to confront realities that doctors may have often denied resting perhaps a bit too self assured in their effects upon the body. His chiding of them to find new cures or his request to publish their "sentiments on its [Jamaica's] diseases, and the remedies founds most efficacious" are all driven by the same motivation that likewise move him to inquire into indigenous medicine.[56]

In this instance, the underlying motive which at first led him to strongly reject the black race overcomes this rejection to rather accept and incorporate them. That he equates them to animals or that he attributes their findings to haphazard, circumstantial, and serendipitous activities are rationalizations which do not deny the validity of their contribution. That "Brutes are botanists by instinct"[57] is put into question by the fact that medicine can only be brought to a 'state of perfection' by a "multitude of intelligent men"[58]. The racial categories break down at the time when the lives of his loved ones are at stake. His universal pleas resonate this, his profound tribal love.

> If to rescue one man only from impending death can yield unspeakable pleasure to a benevolent heart; how infinitely superior must be his satisfaction, who whilst he communicates the means by which thousands, perhaps, of his fellow-creatures may be saved from extremity of torture and distress, reflects a moment, that, by so doing, he builds a monument that will transmit his name with eulogy to future generations![59]

III Dr. James Thomson

"We hear persons, who…exclaim that they are astonished how one can distinguish the individuals, seeing they all have woolly hair, and are of a uniform complexion. The remark, it is needless to say, is the result of the most superficial examination…" [60] As we move through time and experience, the unknown and vague world becomes specific and differentiated. In this sense the cognizance of societies is no different from that of babies who can only perceive contours and then gradually are able to recognize the details of the face. Both their views become clearer and sharper in time. In the acquisition of one view, however, we usually lose sight of the other.

Africans were not the species Long claimed them to be; it is not just that they could not be lumped apart, but that and they could not necessarily be lumped together to begin with. Though the one 'afro-Jamaican' (Afro-British Caribbean) culture eventually did solidify into a homogeneous unit, it was the result of an initial intermingling of diverse cultural groups bound together neither by the

same language nor religion but by their physical confinement. [61] During the period of Sloane's stay, 1655-1700, groups primarily came from Akan and Ga-Andagme in Ghana, 40% from Angola, and 30% from Benin (then Dahomey).[62] All black men were not the same. The patterns of importation changed but nonetheless remained as diverse. During Long's stay, 1730-90, those from Ghana continue to be exported, but with additional tribes such as the Ibo, Chambras, Orika, Andoni, Edoes, Ibibios and others from the Niger-Cross deltas.[63]

By 1820, the year when Dr. James Thomson wrote and published his treatise, Jamaica was once again a new world—new this time, however, because of its difference. The economic triangle connecting British manufactures, African Slaves, and Caribbean Sugar ultimately had weak joints. The sugar empire had collapsed and its remains spilled throughout the island. Whereas the plantation Hyde Hall had made a 12% profit in the 1790's, by 1807 it was struggling to make ends meet.[64] The plummeting economy was followed by a fall in land prices. A plantation that had been valued at 64,000 pounds in 1817 could not be sold at auction in 1830. Another whose owner had refused to sell for 5,000 in 1824, was forced to sell it for one third of that price only five years later.[65] The economy which had been based upon African slave labor was beginning to collapse. It is perhaps no wonder that, not requiring such services, Jamaica slaves were let go in a 1807 Abolition Bill. When the company goes through harsh times, the worker does poorly just as well.

Thus when Thomson traveled to the island after 1807, demographics had become a moot issue in race relations because subjugation had become was a less clearly definable issue. In 1795 blacks had been granted the right to testify in public court. By 1830, they were given the rights of all White Protestants.66 How can one protest to gain rights that have already been granted? The Hoetnick insight still applies and the situation falls back roughly within its previous category. What had been exotic and later dangerous, was now, at most, only bothersome. It was a residue that could be ignored away, sadly an attitude that is all too prevalent today.

Yet, just as one should not pigeonhole all Africans into a category, one should not brand all Englishmen with the same intentions. Though Dr. Thomson refused to believe that we were of equal descendance, he criticizes people like Long who, "report the character of others with so much decision, while in reality they are incapable of discriminating their own."[67] A racist Thomson is not, however much he tries to understand racial differences. He puts derogatory remarks to the test. Is it true that warmer climates have a debilitating power on the inhabitant's mental and physical constitution?[68] He affirms with a resoundingly firm

and convincing, "No." If you compare the different groups of people living in warm climates, you will find one of the most vigorous—the Arabs. "They traverse with unabated speed the wildest deserts, and endure a succession of fatigues that no European durst attempt: The broadly-expanded chest, the brawny shoulders and well-turned limb, which every day present themselves in the person of the negro are not the attributes of one destined to pass his days in listless activity."[69] Their example falsifies the claim.

The mental world Dr. Thomson inhabits, the character of his text, the logic of his thought, are of a wholly different nature from Long's. His text is specific and purposeful—its aim is to discuss the nature and cure of diseases in Negroes. He pursues this aim steadfastly, without getting sidetracked or discussing a number of irrelevant issues. He does not touch on topography, nor geography, nor the meteorology of the island. Each chapter is devoted to a single disease; once done with, he goes on to the next. They are clear, concise, including only the most relevant detail. They describe visible symptoms and make no attempt to correlate these to the moon's phases [nor they taken for granted]. He informs us of his verification of theory, of his results, his published articles. He is aware of what he knows and what he needs to know; unlike Sloane, he does not accumulate data for data's sake. His work, rather than dedicated to the Queen of England, is aimed to the wider audience of his social peers. With him, we approach the scientific revolution of medicine. Though we do not quite arrive there, the requisite methodology and attitude is certainly at hand—Pasteur and Koch are but around the corner.

Fortunately for the purposes of this study, we have not yet lost the inner voice of the man to the scientist's cold artificial mask. We have not yet crossed into the modern era. The text is not so specialized that the surrounding circumstances nor the inner conscience have been erased from its pages. Though he tells us of a project to be published in the future, we know that he dies two years later after the book is published and thus most likely did not fulfill his aim. Besides ambitions, his concerns and worries are also revealed, though not always purposely.

"I am firmly persuaded that many celebrated medicines of the present day, which are constantly prescribed in certain disorders, operate only by their being quite inefficacious, and allowing the salutary actions of the system to excert their influence…"[70] Thomson very openly offers his doubts about the value of the Western pharmacopoeia for medical treatment. One may imagine him thinking, "acknowledging deficiencies aids their quick resolution"—an attitude toward Western medicine quite different from Sloane's otherwise usually-frank piece. As a result, Thomson experiments with a number of drugs used by African herbal-

ists. He finds that while some of these local plants are just as useless (such as *Balsam Capivi*), others do have quite a beneficial effect on the body. Of the aloe plant, he writes that it is a valuable purgative, "It is astonishing that it is not more frequently trusted to in their disorders by the generality of practitioners, instead of employing those feeble adulterated preparations that are sent us from Europe. Why should we disregard [their]…powerful assistance…?"[71] Whether a drug is of Western origin or African is of no importance; ultimately it is the effect on the body which will be the determining criteria. As such, Thomson still operates within the same broad medical tradition as Sloane.

Yet he needed to know more than just the fact that it affected the body—he needed to know how it did so. "We know at present but little of the real nature of the virtues of medicinal substances; we can talk about them freely, but our words are expressions for the most vague ideas and imaginary qualities…Fasion here creates imaginary powers…so great is our reverence for the authority of celebrated names, that we admit as ascertained facts what should have been subjected to the test of the severest experiments…A radical reform is therefore necessary."[72] He is aware of the details of his ignorance, but likewise aware of the general steps he needs to take to remedy this ill. He will not take for granted the word of anyone, be they European or African. He attacks his predecessors (including Sloane) and looks to the future. He will remain his own authority and his own sharpest critic. We are on the verge of entering the modern medical era; its scent is sharp and strong. This attitude permeates throughout the entire text.

In contrast to Sloane, Thomson inquires into African medical beliefs. "So completely has the idea of witchcraft gained a supremacy in their minds, that he, who would attempt to destroy it by reasoning with them, would idly misapply the purpose of that noble strategy."[73] Notice that Hoetnick's Law of Decreasing Deviation is clearly at work here. Thomson is arguing with black Jamaicans rather than African slaves—he is treating them in the same way he would a peer. Their being is no longer wholly foreign and alien. That he is arguing with them means that he is trying to change their minds, trying to get them to incorporate what he feels to be higher standards of understanding. He is trying to impose his norm onto their own criteria. He does not recognize the psychological value of their belief, nor the reality of their perception. His mental world has been universally projected onto theirs.

Yet there are tensions and ambiguities in his judgment of their medicine; they are subtle and hidden yet nonetheless present. "They [black healers] entertain an idea that nature has no power in restoring health, and that nothing but the strongest medicine can operate a revolution in their favour." [74] It is a curious state-

ment in that it is very proximate to the characterization of Western medicine of the period. Though European medicine has certainly started to undergo a metamorphosis, it has not yet become something qualitatively new and different. It has not yet differentiated itself from the same kind of medicine that indigenous Africans had practiced and continued to practice—it retains many of the same qualities. They both try to affect the body without really knowing how their medicines effect it. The familiarity is present not only in social terms but also in scientific ones. We are at a transition point and it is precisely at this point that we can justifiably compare the two medical traditions. The photo is captured, now it will be analyzed.

Thomson must have felt a profound sense of conflict. Whereas African healers had much influence and control over their patients, European physicians still had to justify what they did and why. The differentiation of the two arose in part from their medical explanations—using the religious, African doctors existed in a realm unquestionable and unreachable by their patients. Using their supposed control over the spirits of the natural world, Obeah men had a surprising degree of autonomous authority. They could have experimented with any number of drugs and it wouldn't have mattered. Their status and autonomy was secure and inviolable. Contrasted to this, the European physisian's status wobbled in uncertainty. Whether it was accepted or rejected was a probabilistic indeterminacy. Throughout his text, Thomson has to continually please the patient in order to win or retain converts. One should use Wild Cinnamon because "…negroes are excessively fond of it, and place the greatest reliance on it."[75] Similarly, Hoghum "should be kept on every property, being a favorite with negroes."[76] Their psychological affect is just as important, if not more so, than their medical one. We find this strategic move through the text.

The inner tension Thomson must have felt arises from the fact that African doctors had so much autonomy and could freely experiment with so many different herbals whereas, philosophically, he could not. Thomson was a firm believer in the Hippocratic notion that nature heals itself and that the doctor's role was to aid this process. This principle must have placed restraints upon his medical science that African doctors were not subject to.

It is at these points where Thomson is most critical of the residue left of African medicine. "Nature, or the powers of the constitution to restore health, is what very few trust to, especially in warm climates. The negroes have an idea that they never can recover without an immense varieties of remedies being administered. In this they are, as in many other things, mistaken."[77] How could one actively treat the patient without taking power away from the body? To what

extent is the power gained by the physician that which is lost by nature? The two are, psychologically speaking, antithesis of one another. This wobbling motivation must have had some sort of an impact upon approach and self-definition. Conceptually, there was no clear path to take, only a jump into the abyss.

When Richard Sheridan characterizes the white doctor-black patient relationship solely in terms of power relations, he does a disservice to both groups. The intellectual element of the drama is missing thereby miscontextualizing and stereotyping individuals. Although the white patient-white doctor relationship was one of confidence, the racially mixed one was beset by mistrust and fear. Claims as these tend to piegeonhole complex reality into all-too-neat categories. There are countless instances when white patients did not get along with their white doctors, and others that showed a greater degree of doctor-patient trust than one would imagine.

Many Africans came to incorporate a number of aspects of western medicine just as Westerners like Thomson had of black practice. Thomson describes a woman's explanation of her symptoms, "A negro woman had been subject to an intermittent fever for six months, which she had attributed to the situation of her house being extremely low and swampy."[78] Her explanation is certainly causal and naturalistic, not supernatural. Though it would be a stereotype to misconstrue African medicine as entirely supernatural, one should point out that the elements of her explanation (the proximate ground being swampy) were those of a Western conceptual framework. While it also might be objected that Thomson is projecting his cognitive world onto hers, this case is different in that he definitely quoting her—the reference is too specific to be ignored away.

As both groups lived beside one another, they learned from each other, regardless of whether they were willing to consciously recognize this or not. To categorize all relations by fear is a generalization that is sadly inappropriate to the historical reality, however psychologically necessary to the immediate present. "Acculturation between segments is inevitable, for ultimately acculturation is not halted by social barriers;" Hoetnick's insight proves true.[79] The fact that both groups were removed from their homelands meant that they were more open and susceptible to the other's influence. Harris describes how old cultural patterns deteriorate by the distancing within such an atmosphere[80] ; the vacuum created is thus filled by a drawing in of the surrounding cultural matter. In the process, a new culture was born.

ENDNOTES

[1] This comment is no longer true, although it was more valid when the essay was first written in 1994.

[2] One might take disease immunity as an indicator of broad cultural groups; each, isolated from the other, develop their own unique immunities. When brought together, being susceptible to another's disease, their numbers drastically decline. West Africans suffered to West European diseases just like Native Americans. Consider Richard Sheridan, *Doctors and Slaves: A medical and demographic history of slavery in the British West Indies, 1680-1834* (Cambridge: Cambridge University Press, 1985), 9.

[3] H. Hoetink, *The Two Variants in Caribbean Race Relations: A contribution to the sociology of segmented societies*. trans. by Eva M Hooykaas., (London: Oxford University Press, 1967).

[4] Samuel J. Hurwitz and Edith Hurwitz, *Jamaica: A Historical Portrait.* (New York: Praeger Publishers, 1971).

[5] Hans Sloane, Voyage to Madeira, Barbadoes, and Jamaica: With the Natural History of Jamaica.

2 vols., (London: B M, 1725).

[6] Edward Long, *The history of Jamaica. General Survey of the ancient and modern state of the island* (London: T. Lownudes, 1774).

[7] Their growth was common throughout spanish america, in particular the 'pampas' of venezuela and argentina.

[8] Orlando Patterson, The Sociology of Slavery: An analysis of the Origins, Development and Structure of Negro Slave Society in Jamaica (London: MacGibbon & Kee, 1967).

[9] Sloane, xlvi

[10] Long, 1, 375.

[11] George W. Roberts, *The Population of Jamaica* (Cambridge: Cambridge University Press, 1957), 33, 36.

[12] Ibid.

[13] Hoetink, 129. He tells us that the Southern white has yet to write a history of the contribution of blacks to the southern culture. One might ask if the same is true of Latin America—have any books been written describing the impact of 'Indians' on Spanish culture?

[14] Sloane, 1, xvi.

[15] Ibid., xlviii.

[16] Ibid., xlviii.

[17] Ibid., lxxviii.

[18] Ibid., lvi-vlii.

[19] Ibid.

[20] Ibid., xxiv-xxv.

[21] H J. Braunholtz, *Sir Hans Sloane and ethnography* (London: British Museum, 1970), 19.

[22] Ibid., lvi.

[23] Ibid., cxxxii.

[24] Ibid., lvii.

[25] Ibid., xxvii-xxviii.

[26] Ibid.

[27] This might be due to the species question. Though he believes in a structure of the world that is rigid and which "will remain to the End of the World in the same condition we now find them," the distribution of animals is still very much a question. That he has not formulated [does not have] a concept of species means that he cannot to pigeonhole these individuals and humans as well. each of the things in the world are individuals rather than aspects of categories. Consequently, though there is a static world, beings have a large amount of freedom

because they have not been categorized. This will be very different to Long's view.

[28] Sloane, 1, liv-lv.

[29] While treating a negro footman, we get the impression that he sometimes was speaking directly to them.

[30] Harris, Marvin, *Patterns of Race in the Americas* (New York: Walker and Co., 1964), chpt. 4.

[31] Sloane, 1, b.

[32] Ibid., xcix.

[33] Ibid., liv-lv.

[34] Ibid., lviii-liv.

[35] Patterson, 20.

[36] Patterson, 19, 23.

[37] Patterson, 20; Hurwitz, 33.

[38] Patterson, 95; roberts, 33.

[39] "Long, Edward" in *Dictionary of National Biography*, Leslie Stephen and Sidney Lee, eds., (London: Oxford University Press, 1885-1901), 12, 100-101.

[40] Even though Sloane eventually married the wife of Dr. Rose, the colleague he had worked with in the "Sir H.M." case, he never seems to have returned again to Jamaica or to reestablish any connections. Long leaves the island only because he was ill; it is highly likely that a physician recommend he return back to England. See Thomson.

[41] Long, 2, 353.

[41] Ibid., 356-377.

[42] Ibid., 278.

[43] Ibid., 276.

[44] Ibid., 332.

[45] Hoetink, 59-60 Yet the overlooking of subtle cultural differences need not occur only in groups similar to one another but in those radically different as Lockhart has shown between Nauhtal Indians and Spanish people.

[46] Long, 2, 354-5.

[47] Ibid., 2, 382.

[48] Ibid., 2, 380.

[49] Sloane, 1, xc. "My Medicines had the better operation, because people had a belief I could help them, and submitted to the taking of Remedies in the order they were prescribed without changing the Medicines, altering the Method, or judging harshly in case the Person died."

[50] Long, 2, 581.

[51] Roy Porter, *Disease, Medicine, and Society in England, 1550-1860* (London: Macmillan Publishers Ltd., 1987), Chpt. 1.

[52] Ibid., 54.

[53] Ibid., 54-58.

[54] Paul De Kruif, *Microbe Hunters* (New York: Harcourt Brace & World, Inc., 1953).

[55] Long, 581.

[56] Ibid., p 380-1.

[57] Ibid., 581.

[58] Ibid., 582.

[59] James Thomson, *A Treatise on the Diseases of Negroes, as they Occur in the Island of Jamaica: with Observations on the Country Remedies.* (Jamaica, 1820), 2

[60] Sidney Mintz, and Richard Price, *The Birth of African-American Culture: An Anthropological Perspective.* (Boston: Beacon Press, 1992), Chpt. 1

[61] Patterson, 142-3.

[62] Ibid.

[64] Hurowitz, 51.

[65] Ibid., 55.

[66] Hurwitz 64-5.

[67] Thomson, 3.

[68] Ibid., 6.

[69] Ibid., 7.

[70] Ibid., 148.

[71] Ibid., 146.

[72] Ibid., 145.

[73] Ibid., 8.

[72] Ibid., 10.

[73] Ibid., 154.

[74] Ibid., 155.

[75] Ibid., 22.

[76] Ibid., 154.

[77] Hotenick, 150.

[78] Harris, Chpt. 4.

[79] Thomas Kuhn, "The History of Science" in *The Essential Tension* (Chicago: University of Chicago Press, 1977), 105-126

7

The Antipodes of Tropical Medicine: Bailey K. Ashford, Patrick Manson and the Colonial Experiment[1]

> *Two men, both equally wise, honest, and capable, may have diametrically opposite views on almost any subject.… Everything depends on the respective standpoints they view it from. As between European and Chinese, the principal difference affecting their respective judgements is antecedent education—using the word in its widest sense. Education in this sense is very much a matter of birth, a thing we cannot control. That we are able to understand and see a virtue in our European civilization is the result entirely of our education; that the Chinese do not see with our eyes is the consequence of their education.… Ignorance and knowledge are often accidental, and may call for no blame or praise.…*
>
> *—Philip Manson*

Patrick Manson did not get a fair hearing on his return to England in 1889. Despite the fact that for the last twenty three years he had been practicing medicine in China, developing the groundwork of a new science while studying filaria and their elephant-like effect on the human body, British physicians viewed his work with derision.

> One day when walking down St. James's Street there emerged from a club two well-known physicians who had been criticizing his mosquito work in the medical press. As they passed him one nudged the other and asked who the rather vigorous and florid gentleman who had just nodded to them might be. The other answered, "Mosquito Manson," at the same time significantly tapping his forehead with his finger. Manson turned and reciprocated the significant dumb-show.[2]

While Manson's biographer, his son in law, could all too easily dismiss such charges to the winds of antiquated tradition, Manson, who had been living under

this tradition, could not. The anecdote, and others even more damaging, could just as easily have characterized his experiences in China, whose traditional belief system was even more deeply ingrained into its intellectual fabric. Although, as its new dean, he had depicted the beginning of the Hong Kong College of Medicine with great optimism in his inaugural speech, less that two years later he would return to England to begin a new life. Rejecting his ascendancy to the upper echelons of insular practice, the 'father of topical medicine' chose to flee and begin anew in the lowest rungs of London's professional life.

His example might be contrasted to that of Bailey K. Ashford's.[3] Like Manson, Ashford had traveled to the periphery for colonial service. Although his initial duties in 1898 were those of treating wounded American soldiers in Puerto Rico during the Spanish American War, after its end his purpose was quickly transformed into treating the island's agricultural laborer, or 'jibaro'. Finding that the jibaro suffered from hookworm rather than the pervasive anemia as Spanish and local doctors believed, Ashford led a campaign which eventually eliminated the local plague. His successful work lent great merit and reputation to both the United States and science in the local mind; his image to this day remains a local mythos encoded in the names of many public areas—buildings, streets, avenues, and communities. Even after Ashford had been reassigned to the United States in 1906, he still chose to return to the island soon thereafter to permanently settle until his death in 1934. He never received the same undue reception which Manson gained in China and England despite Ashford's lack of significant contribution to the knowledge base of tropical medicine.[4]

Why did one man choose to leave the colonies while the other decide to stay? The question is of some importance given that the outcome of their decision ultimately affected the fate of their research schools and the diffusion of the knowledge thereby produced.[5] Ashford's School of Tropical Medicine, inaugurated in 1926, was eventually assimilated into the island's educational infrastructure in 1949 with the creation of the University of Puerto Rico's School of Medicine. Although its consequent function was in the training of local physicians, original research in the field was still continued locally after Ashford's death. In 1950, for example, Dr. Jose Olivar Gonzalez invented the circumoval precipitin test currently used to detect schistosomiasis.[6] The torch of science had been passed down.

In contrast, Manson's departure from Hong Kong delayed the Chinese acquisition of tropical medicine by three decades, and possibly even longer if we consider actual research. It would not be until 1919 when Carroll Faust and later Reinhard J.C. Hoeppli (1929) were appointed professors of parasitology at the

Peking Union Medical College that the science would be reintroduced into China. Even then, however, they did not establish a research school per se despite the fact that both foreign scientists led their own investigations. The first research institute dedicated to 'tropical medicine', the Institute of Parasitic Diseases in Shanghai, would not be formed until 1950. The further development of Manson's research was conducted away from Hong Kong and consequently had little direct impact on the colony's scientific growth. Hence, while Puerto Rico quickly became a part of the modern scientific enterprise of tropical medicine, China lagged behind until the Cold War period.[7]

Simply put, the answer lies seems to lie in the fact that Ashford exercised a much greater degree of influence over his insular environment than Manson did. As already suggested, an analysis of the intellectual milieu in which they literally "operated" greatly affected the kind of support, or lack thereof, they would receive from their respective communities. When this milieu is considered in light of the power structure available to each men, it becomes very clear why each made entirely different decisions—ironically important decisions which were never fully addressed in their autobiographies.

It is not unreasonable to suggest that, in light of Manson's difficulties, had he chosen to stay in Hong Kong, the course of parasitology would have been forever altered. Had parasitology not developed when it did, it would have had a number of undeniable historical consequences, oddly having nothing to do with England. The takeover of Cuba and Puerto Rico by the United States had not only meant the possibility of a new political future, but it had also been taken to mean that these communities would receive the richest fruits of civilization—science. The elimination of yellow fever in Cuba and hookworm in Puerto Rico had consolidated a deeper trust in that implicit promise by showing, as a lived experience, what progress actually meant. In light of the dreaded effects of tropical diseases, their work put an end to a great deal of suffering, misery, and death. Ashford, and many others like him, had used Manson's *Manual of Tropical Diseases* to guide them through newfound difficulties. Had Manson's textbook and discoveries not been available at the time, U.S. relations with its colonies would have been gravely undermined. That there could be actual benefits to an association with this alien nation immediately led to a suspended judgment of the many imperfections in U.S. foreign policy—a suspension that would quietly stand in the background of these relations throughout much of the century.

Hence in exploring the social construction of this science, we are in fact better understanding how science itself has 'constructed' or affected historical development. In other words, by exploring the relevant social groups, the political arenas

under which they operated, and the complex variations of interpretative flexibility and closure mechanisms affecting each actor, this paper hopes to show how tropical medicine formed "part of a seamless web of society, politics, and economics."[8] The development of parasitology was intimately connected to the world of imperialism.

I: Power, Its presence and absence in Colonial relations

Hong Kong was an insular territory that in many ways had been formed from scratch, not unlike Puerto Rico. The island lying adjacent to Kowloon had been sparsely settled, almost barren rock, when forcefully acquired by the British in 1842. The Treaty of Nanking had given England what it so sorely wanted: economic, not political, control over Chinese trade. At issue had been tea which, imported to the growing metropolis, had created a rather unfavorable balance of trade. The rise of opium, however, had turned the tables around to the detriment of its consumers. Exported to China from India by the British, it was already generating $17.9M for the middleman by 1835. The Chinese, culturally unaware of any such concept of a 'trade balance', had thought that by closing off access to her tea, she would force England into submission. Instead, she unknowingly strengthened her opponent's position. To the British, Hong Kong served not as a trading post but rather as a protective base from which to service ships traveling to other coastal ports also acquired by the same treaty. By 1895 Britain controlled 75% of Chinese trade—gunboat diplomacy had worked.[9]

Manson jumped into this world first in 1866 and would remain until 1889 before permanently returning to England.[10] Given the power and control of the British, why did he leave? To answer this question, one must turn to the macro and the microcosmic levels of British imperialism.

At the national level, Manson entered the British empire at a time when its importance had greatly waned in the metropolitan eye. The period between 1840 and 1870 saw the rise of the anti-imperialists, with Gladstone's liberal doctrines peaking in the mid 1860's. Gladstone, who opposed expansion, believing that the colonized should 'not feel any yokes upon their necks', wanted to reduce the number of troops and make the colonies self-reliant. Although he fell from power in 1874, in part as a renewed colonial impetus with Disraeli's Crystal Palace speech of 1872, there seem to have been a continuous anti-imperial ethos in the following decade. Disraeli himself was criticized for his policy of 'occupy, fortify, grab and bag' when he fell from power in 1880. Yet despite Disraeli's authority throughout the 1870's, he was in general agreement with much of what Glad-

stone preached, in particular the ideas of self-government abroad. "Self-government, in my opinion, when it was conceded, ought to have been conceded as part of a great policy of imperial consolidation…[and] accompanied by the institution of some representative council in the metropolis." Eldridge argues that this elderly man was pulled into imperial expansion by his young subordinate's actions, such as Sir Bartle Frere in his dealing with the Zulus or Lord Lyon as Viceroy of India, rather than leading out of his own desire.[11]

While this historical backdrop to metropolitan policies do not explain Manson's behavior, they help contextualize it. Imperialism had been on the wane after the mid-Victorian period and these attitudes would be inhibitive toward the consolidation and expansion of metropolitan power abroad.[12] Manson's tenure generally coincided with a pathetic British attitude to the periphery, and, in turn, diminished the possibility of receiving any significant kind of social support from the metropolis.

Even if one points out that this tendency did not apply to all areas, especially with regard to India and its trade routes which became of great concern in the 1880's, it certainly applied to China. Although England controlled a great percentage of its trade, China never became its significant trading partner in this century. Belgium, for example, had a larger share of British trade than China. In contrast to other colonial regions, only 7.5 million pounds were traded with China while 29 million was exchanged with India. Sir Robert Hall then aptly commented that "the Chinese have the best food in the world, rice; the best drink, tea; and the best clothing, cotton, silk, and fur…they do not need to buy a pence's worth elsewhere." The British were also affected by a number of concerns such as: overextending their empire outside of India, China's self-sufficiency, European competitors, and the country's size and instability, which hindered proper control.[13] As Robinson and Gallager wrote in their studies of imperialism, "The type of political lien between the expanding economy and its formal or formal dependencies, as might be expected, has been flexible. In practice it has tended to vary with the economic value of the territory, the strength of its political structure, the readiness of its rulers to collaborate with British commercial or economic purposes…"[14] Hence China's economic insignificance would render informality and minimalism to England's influence in the region for most of the century, to the detriment of its colonials on the periphery.[15]

If the general trend made it unlikely that Manson would receive much metropolitan support—a tendency which would reverse itself by 1895—the problem was compounded by local conditions and rulers. John Pope Hennessy was an incompetent governor whose tenure in Hong Kong's between 1877 and 1898

overlapped Manson's stay. Hennessy had been given the position by Disraeli as a last political favor; he had previously governed Lauban, the Gold Cost, and the Windward Islands "leaving [a trail of] unhappy civil servants…and disgruntled colonists" wherever he went. One commentator of the time noted that he "had grossly mismanaged every government he has been entrusted with." Although Manson criticized the Chinese for their sanitary behaviors, it seems that Hennessy had been just as backward, bickering with sanitary authorities (i.e. physicians) over important policies. He had opposed the installation of sewage facilities in the city, the installation of water-closets in the hospital, and the inspection for venereal disease. Hennessy had also given more weight to Chinese suggestions than those of his own advisors, with whom he did not get along.[16] It is unlikely that Manson, given Hennessy's character, would have had much influence in elite circles.

As a place to live, the standard of living in Hong Kong seems to have greatly decreased throughout the last half of the century. The transfer of British law to this small island upon its acquisition had a number of unintended consequences. A dual legal system had initially been established whereby each group, Chinese and British, were tried under their respective laws. From the metropolitan point of view, the legal division was favorable because judgment of British soldiers and citizens by a foreign court would likely be highly biased and detrimental. The British were also able to sidestep cruel Chinese punishments which were so commonly meted against its own people. Legal punishments under the previous system, which included such things as amputation and flogging, had been a great deal more 'cruel and harsh' than those of British law. Understandably, for many Chinese imprisonment of by the British did not have the social stigma; "The coolie, condemned to incessant labor, and on a starvation diet, finds within the precincts of jail rest and food, and does not resent his incarceration as a rule."

Yet one of the almost-inevitable consequences of the new regime was a vast migration to the island by those social groups most likely to be tried by the system—the 'unwanted' in Chinese society. Although a dual system had been set up, in practice it was mostly British ruled.[17] The impact of this immigration on the social atmosphere was profound, and could be traced as early as the 1840's. Some observed that the "shelter and protection afforded by the presence of our fleet soon made our shores the resort of outlaws, opium smugglers, and indeed, of all persons who had made themselves obnoxious to Chinese laws."; " It is literally true, that after three years and a half of uninterrupted settlement, there is not one respectable Chinese inhabitant." It's relation to the opium trade were obvious to

others; "there is a close connection between the vilest of the vile Chinese population and our opium ships."[18] The British did indeed reap the fruit they sowed.

Although the threat would diminish with time, it was noticeable enough to be commented on by James Cantlie, Manson's close colleague both at the Alice Memorial Hospital and the medical college in Hong Kong. "When the Chinese began to swarm into the colony, the Europeans were gradually driven to the higher levels of the city; but as the years passed, the encroachment of these undesirable neighbours became so acute, that other places of the colony were sought after as suitable residences for Europeans." The statement may have been based on Manson's departure given that it was written a few years afterwards in 1896. By 1895, the island's population had skyrocketed from 4,350 in 1841 to a total of 248,498—of whom only 4.3% were of European descent.[19]

This growth throughout the period also tilted the balance of cultural influences in the favor of the larger group. The Colonial Office had great difficulty in dealing with Chinese cultural practices and consequently procrastinated in their decisions towards them, despite the clear immorality of some. "Chinese customs and culture were too strongly marked and deeply ingrained to adapt easily to those of the British…" The practice of 'mui-stai', or indentured girls which "shaded off into child slavery and concubinage", continued to exist as late as the 1930's.[20] If Manson was critical of Chinese customs, as will be shown later, Hennessy's actions would have no impact on these.

Any growth in influence and authority would have been gravely curbed by a man as Hennessy. This was especially true prior to the development of the submarine cable. Although it was installed in Hong Kong in 1870, and eventually diminish the power of colonial governors, it would not centralize communications until the 1890's because of its many imperfections. Rather than substitute for the mail delivery system, it would complement it.[21] To be heard, Manson would have to travel back to the metropolis.

By 1895, after Manson had returned to England, the British imperial environment was the opposite of what it had been during much of his Chinese tenure. Regardless of the historical nuances throughout the period, it is generally recognized that there was a revival of the imperialistic spirit by the end of the century. Joseph Chamberlain, who then became Colonial Secretary, voiced the fears as to what would happen without this expansion; believing that half of the English would likely starve, his cause drew unprecedented support from the working classes. Chamberlain was also personally cognizant of the value of this expansion in contrast to other secretaries. Nine years prior to his position, he had traveled to Egypt to study the impact of this rule, and had invested in West Indian sisal and

Canadian railroads, more often than not loosing rather making money in the process. German economic encroachment into the British realm during the 1880's were also starting to have its impact. Similarly, there were technological advancements which stimulated the growth of empire by opened up areas previously closed, as steel ships and synthetic quinine had in Africa. Whatever the reasons might be, British expansion took a definite upswing by the end of the century.[22] It was a trend reflected by the institutional growth of the Colonial Office, in which the number of transactions and papers dealt with exponentially grew after 1895. While only changing from 42,700 in 1881 to 48,000 in 1895; these jumped to 75,000 by 1899 and to 116,000 in 1902.[23]

While Manson could not have foreseen this growth prior to his return to England, it provided an unprecedented stimulus to Manson's work when he returned.[24] The contrast between the reception to his ideas by Chamberlain in comparison to Hennessy's relation to British physicians could not be more extreme. Even despite opposition by the president of the Royal College of Physicians, Chamberlain went ahead and formed the school, centralizing the entire colonial medical system around it.[25] He 'fully understood' the benefits it would confer to British control over the empire, and gave it its wholehearted support. His secretary, Herbert Read, was deeply influential in making sure Chamberlain understood its significance and in getting Manson to apply to the post, and receive it, after it had been closed.[26] Although not entirely funded by the Colonial Office, Chamberlain gave a number of dinner lectures helping to raise its starting funds. Without the support of the Colonial Office and its cognizant members, Manson's School of Tropical Medicine would never have been formed.

Support for this science, or most other sciences for that matter, was generally negligible throughout the United States. This was especially true for 'tropical medicine' which was a specialized branch in a discipline which up to the end of the nineteenth century lacked a great deal of specialization. Although the medical profession had been undergoing a period of academic standardization, it had not yet achieved professional or intellectual homogeneity. As late as 1910, Simon Flexner's *Bulletin Number Four* criticized the uneven quality of the institutions and suggested a great reduction in their numbers. If had not mattered much that schools did not have laboratories, test tubes, or sparsely stocked libraries before 1870, after this date revolutionary advances in medical science would mean necessary consequent reforms of medical education.[27] Some of the European reforms introduced by Flexner included that of team research—specialized individuals collaborating and contributing to one another's work. Given the lack of impor-

tance for this type of institutional arrangement under the previous system, it is unlikely that anybody specializing in a relatively unknown field, as Ashford had in 1898, would have received much attention and support.

If it is impossible assess this statement with regard to Ashford, who did not seek support in the United States per se, it was certainly evident in the case of his professor at medical school, Charles Stiles. Stiles had actively sought institutional and financial backing for his hookworm campaign in the South since 1901 but had been unable to obtain any for seven years. Even before then, when Stiles had begun working for the Bureau of Animal Industry of the Department of Agriculture in 1891, the Bureau was too strictly concerned with farm animals rather than the farmer himself to aid Stiles's research and popularization. He was forced to change jobs to gain preferential treatment.[28] Not unlike Manson's rejection by professional leaders, Stiles had also been dismissed by William Osler while lecturing at Johns Hopkins in 1897.[29] Osler, who had been so influential in the reformation of the American medical system, disbelieved Stiles's claim on the pervasiveness of hookworm in the South because it had seldom been detected by doctors. Even when Stiles obtained favorable backing in the Hygienic Laboratory, the Southern public condemned his public discussion of intimate things such as 'privies' (outhouses). It is also important to note that his first meeting with Frederick Gates, who had been in control of Rockefeller philanthropies, was mainly the result of fortuitous and accidental circumstances rather than deliberate plannification. The support for his work had been hard to come by, and when it finally did, Stiles exercised little control over the new institution.[30]

The lack of support Stiles experienced was perhaps the result and cause of the relatively low social status physicians as a whole held in nineteenth American society.[31] Unlike England, whose doctors had been able to consolidate their professional authority in aristocratic institutions, the American democratic ethos had generally meant a 'free for all' in the medical market place. Men of elite universities seldom elected medicine for their desired profession above that of the clergy, 8% to 26% respectively in 1851. Although the American Medical Association would consolidate its authority in the next century, growing in membership from eight thousand in 1900 to seventy thousand by 1910, it had few members and relatively little control for much of the previous century. Doctors relied not on their medical expertise but on their social etiquette and drug naming to impress and gain clients, prestige, and social power, like Chinese physicians in the same period. This did not seem to convince many people. Most parents, even in the 1910's, never bothered to bring their children for check-ups as a routine measure but rather preferred to do so in times of crises. According to one physician, Vic-

tor C. Vaughan, the treatment he received in the army during the Spanish American War had been one of derision. "As a rule, I was snubbed and told by action, if not by words, that I was only a medical officer, and that I had no right to make any suggestions, and it was impudent of me to do so." These reactions greatly contrast with those he experienced during the First World War.[32]

Nonetheless, it is certainly the case that between 1901 and 1907, Ashford had been much more successful in obtaining governmental and financial support for his programs in Puerto Rico than Stiles had in the United States.[33] If Manson had acquired power by returning to the metropolis, Ashford gained it by 'leaving' it.

Acting on the advice of Dr. Kroeber, a friend of Ashford's family, Ashford joined the army in 1897 believing that it would be the institution most favorable to scientific research. In the end, however, it was not the army which funded his research and programs but rather the Puerto Rican government. His first efforts, the Porto Rico Anemia Comission, was begun in 1904 with a $5,000 grant. It's initial output was so successful that the legislature passed a bill giving $50,000 in 1905 when only $15,000 had been needed. As the number of stations grew from 10 to 20, eventually covering the entire island, the number of deaths declined from 11,875 in 1900 to 1,758 by 1907.[34] Funding for his programs continued to rise alongside his prestige. By 1912 the Institute of Tropical Medicine and Hygiene was created—Ashford's first research institute, and later, the School of Tropical Medicine. Ashford's School was paid for almost entirely by the Puerto Rican legislature, despite the fact that control was held by Columbia University and its purpose was not initially for training local physicians.[35] While the University named and paid for the director and three professors, the island covered the annual expenses of $30,000 and its $100,000 building.[36]

A detailed view of these events reveals how much authority Ashford gained with American imperialism in contrast to that of Stiles's domestic or Manson's international experience. Certainly, although Ashford's first study of hookworm had been published in 1900, it had still not led to any island-wide public health campaigns by 1903. Yet when Ashford and his co-researcher, W.W. King, soon thereafter criticized the delay of its public health services in an editorial for the same journal, *American Medicine*, there was an immediate response. Governor William Hunt and Regis Post, the president of the Executive Council, (both Americans) purposefully bypassed normal funding routes to give Ashford's group the needed money for his first 'campaign' in 1904. The amount of clout the American-appointed governor held is also evidenced when, at his suggestion, the U.S. Army temporarily released Ashford to partake in the Commission. Hunt

was well aware of the potential repercussions on public relations to the islanders if Ashford failed, and had even warned him of it. Another incident reveals the clout Ashford held with the governors. There had been a number of obstacles upon Ashford's nomination as Commissioner of Public Health in 1911. Possibly loosing his military position, an 'enabling act' was passed at the behest of the "local Congress" allowing Ashford to participate in both civilian and military roles. Ashford's own insistence that he appoint those directly under him had been another obstacle. The governor, now George Colton, who legally held this authority, initially acceded to Ashford's request, but only to backtrack later. Even after Henry Stimson, U.S. Secretary of War, objected to Ashford's extra-legal demands, Ashford still made his acceptance contingent on his control of appointees. Although Ashford would 'loose' this particular power struggle, his actions suggest the kind of influence and clout he held over local politics. When Colton complained that Ashford was trying to usurp his power, Ashford responded that he too had been offered the position (governor)—implying some sort of equality between the two.[37] It is inconceivable that Manson would have ever had this kind of influence and retort over Hennessy.

Although the relation between Puerto Rico and the United States had initially been intended as one of political tutelage, the political system established in the island was, for a time, anything but democratic.[38] After its acquisition by the United States, islanders were not able to elect political leaders such as the governor until 1947. While the appointment of military governors had changed with the ending of military occupation in 1900, these were still appointed externally, now by the President of the United States rather than the Secretary of War (Elihu Root). Presidential appointees also dominated positions in the island's higher courts and the Executive Council, which served as the 'Senate' of the local Congress. "Since all legislation had to be passed by both chambers and since the governor possessed the right of veto, no legislation that ran counter to the wishes of the Executive Council, dominated by the Americans, could pass."[39] The governor's authority, and that of other Americans in the island, had been consolidated under a political structure which prevented the its local questioning throughout the first quarter of the century. In other words, American control over insular affairs—which was so beneficial to Ashford's own influence and projects—was truly hegemonic. Although the rule of law in Puerto Rico would be less arbitrary than that which existed in Guam, the island was nonetheless also treated as a possession.[40]

Under this system, Ashford could very easily gain the financial support needed for his programs under this system.[41] Given that these improved both the quality

of life (health) of the vast majority of the population and at the same time relations between it and the United States government, funding for these agencies was in the best interest of both parties involved. If we were to take an extreme cynicism, it also aided the monopolistic U.S. sugar production in the island in that it provided a much more reliable labor force. One of the points Ashford continually makes is that improvement in the laborer, would consequently improve its economy.[42]

The 'Puerto Rican legislature' that gave him so much money, a name so commonly used by Ashford in his autobiography, is a misnomer in that it was American controlled. While it may be pointed out that the Council was disbanded with the Jones Act of 1917, by that date, Ashford had already consolidated the merits of his ideas with funding under the previous 'regime'. The memory of that success provided the impetus which would carry his social support and funding for his School of Tropical Medicine when the local legislature did in fact actually become "Puerto Rican."[43] The 1898-1917 imperial tenure had thus provided a window of opportunity which Ashford had used to his fullest advantage.

As in Hong Kong, Puerto Rico's 'native' population would exponentially increase upon the North American entry—a growth had also been the result of colonial policies and had similarly recreated the social landscape of the island. Although intentions as Ashford's were well-meaning, the immediate outcome of such innovations were unforeseen; a grave imbalance between mortality and birth ratios had been established that would worsen in a snowball-effect. The overall rate of population growth skyrocketed from 14.3 per thousand in 1897 to a peak of 29 per thousand by 1950. If after three centuries the population had only grown to 155,426 by 1800, after 1898, it would acquire more than thirty times that amount in less than one—a growth rate that was even offset by the migration to the mainland. Although the causes of this growth are complex and should not be attributed solely to the decline of death rates, it can certainly be said that American involvement radically altered the structure of Puerto Rican society.[44] Hong Kong would equally suffer from the blind hands of Western progress in the same century.

II: Knowledge and Belief, The Impact of Humoralism on the Development of Parasitology

Yet the amount of power and influence which Ashford and Manson respectively held in "Porto Rico" and Hong Kong do not entirely explain their diverging decisions. Manson, despite a lack of influence, could have chosen to stay in China to further develop his ideas into a more coherent form. After all, if his intellectual

character was more attuned to scientific discovery than social ambition, there were no immediately pressing reasons for his departure. He had been a relatively isolated researcher for most of his stay, and could have continued in his financially-rewarding role as colonial physician. Manson-Bahr informs us that Manson had made so much money that he actually intended to retire after returning to England. Despite his complaints, Manson had heard of relevant discoveries faster in the periphery than at the metropole during his foreign sojourn.[45]

Inversely, Ashford need not have stayed in Puerto Rico, but could just as easily have chosen to practice elsewhere. As a highly-regarded practitioner, many options had been opened to him throughout his career, the examples are numerous. The Rockefeller Foundation, for example, had asked him to conduct a survey of tropical medicine institutes in Brazil, and he had also served as president for the American Society of Tropical Medicine.[46] Ashford was also a man not to be too tied down by responsibility. As he was beginning to give the leading address at the Society's annual meeting in 1917, he was suddenly 'wisked away' by an orderly calling him to duty for the First World War. In fact, the entire 'scene' had been planned by him in advance.[47] His submissive wife, so common to this era, would have gone wherever he went.[48]

However, when both men's respective social influence is considered in light of the cultural milieu in which they lived, the factors affecting their motivations become clearer. China was a deeply traditional society whose conservative attitudes had been further solidified by what seemed to be the encroaching menace of the West.[49] To many Chinese, the expansion of Western science was the epitome of cultural imperialism. Ironically perhaps, the pervasiveness of their beliefs also threatened the further development of a Western science like Manson's research. As we have already seen, the vast majority of the population living in the British colony was not English but Chinese. This population, perhaps inevitably, greatly misunderstood the epistemological foundations of his science, and consequently fearing it, attacked it. Given Manson's general lack of social power, only by leaving the region would he come to a more favorable environment in which to practice. There was a irony to this story given that the British in England would also oppose Manson's ideas on the same grounds as the Chinese had in Hong Kong: humoralism.

If we look at Ashford, we find that his relatively greater degree of social influence was reinforced by a society that had come to value the latest scientific research. Whether by accident or design, Puerto Ricans, in their emulation of the latest things Spanish, had incorporated a belief system which had begun to reject its medieval backwardness towards the last quarter of the nineteenth century.

Although the humoral ideas of the Galenic system would pervade throughout the society, these ideas would take a subsidiary role in the encounter and would not dominate the exchange. Its pervasiveness in the Puerto Rican cultural fabric had been too diluted, perhaps by distance, time, and the need for self-sufficiency. Nonetheless, local beliefs did not diminish Ashford's status in this society as they had in Manson's case, but rather strengthened it. As a result, they encouraged rather than overawed Ashford's personal resolution for power and scientific progress.[50]

This is not so say that humoralism had no impact on Ashford and his Western colleagues. Humoral elements, rather than tropical parasites, were generally seen as the primary causal agents of such diseases. For example, when William Ludlow, U.S. military governor of Havana, died of yellow fever in 1900, his distraught wife threw herself on his vomit-strewn body. She wrongly believed that by covering herself with the black liquid, she too would catch the disease and thus end her misery.[51] W. J. Moore, a British colonial physician in India, wrote in 1887 that malaria fever was produced by the rapid sequence of hot days and cold nights which served to debilitate and infect the strong constitution of the colonial soldier. In fact, most British medical textbooks in the 1880's still referred to the disease as a form of miasma.[52] It was not just that parasitology was generally nonexistent in the popular urban mind, but that it was also not even a commonly used paradigm when physicians studied other diseases in tropical regions. Although in relatively rapid decline through the nineteenth century, humoralism had monopolized medical discourse for nearly two millennia.

The intellectual environment created by the pervasiveness of the humoral theory made it difficult for those who had come up with a new theory, or applied it, to receive recognition and support for their work. Between 1902 and 1905, William C. Gorgas had been unable to fully control yellow fever in the Panama Canal because the Commission he worked under did not recognize the validity of the insect-vector theory. This was despite the fact that the 'vomito negro' had killed about 20,000 men during the previous French attempt (one third of the working crew), and that he had successfully proven that he could control the disease a few years earlier in Cuba. Only in that last year, after Theodore Roosevelt reorganized the body and instructed it to cooperate with Gorgas, was he able to obtain the resources to more successfully manage the disease.[53] It is curious to mention that even Gorgas, while in Cuba, had also been initially opposed the insect-vector theory. "I can recollect…having spent a good many hours trying to show Dr. Finaly the absurdity of his mosquito theory, but the doctor was a veteran who had

already had sixteen years' experience in meeting arguments of other men like myself who knew that his theory was an absurdity, and he would not be convinced."[54] It took a while for individual researchers and the profession as a whole to undergo a paradigm shift. In the meantime, this old science continued to have a wide range of social repercussions.

It is perhaps easy to see why the humoral belief system lasted so long as it did. There was a strange confluence between the therapeutic outcome of the two models, which partly accounts for humoralism's last remnants of success in this medical region. Mosquitoes and other insects need suitable conditions, such as stagnant water, despoiling vegetation, or putrid carcasses, in which to flourish.[55] The rise of the sanitary officer's authority in the United States, a social outcome of the miasmatic paradigm, generally undermined the conditions for the rise of many tropical diseases. When General Leonard Wood, himself a medical practitioner, became military governor of Cuba after the Spanish-American War, one of the more important programs was a nationwide reformation of sanitation. The conditions in Cuba after the Spanish-American war had been truly daunting.

> The streets had not been cleaned in months; piles of rags, bones, fruit-skins, and rotting garbage of every description covered with swarms of flies, were to be seen at almost every corner, and the half-decomposed bodies of horses and mules lay here and there in vacant lots, poisoning the air and attracting hundreds of vultures….[56]

It was only when reforms did not affect those specific conditions where breeding mosquitoes lay that an anomalous condition was established within the miasmatic framework. Gorges had observed that despite the general decline of disease following these reforms in Havana, from 21, 252 deaths in 1898 to 6,000 in 1900, the number of cases of yellow fever had actually doubled.[57] These prophylactic anomalies brought into question the validity of its theoretical foundation, and helped justify a practitioner's change of heart. The war however had shifted from a battle with nature, to a battle of belief.

It is not inappropriate to then characterize the dynamics between the two belief systems, the 'humoral' and the 'parasitic', in the military metaphor of war, as Bailey Ashford implied in his own autobiography. Humoralism controlled different spheres of influence from that of parasitology, and, as in an imperial battle chart, red lines could be drawn showing forward movement of forces and sites of intense conflict. Ashford had truly been 'a soldier in science' in that he had used science not only to protect man against nematodic invasions but also to further the cause of modern science; a defensive strategy in one realm had served as an

offensive strategy in another. On this chart showing the dynamics of 'cultural imperialism', an enemy's strengths and weakness could also be displayed. And Puerto Rico represented a very favorable ground of battle.

Bailey K. Ashford had persistently been asked if the U.S. intended to take over the island, and he, just as persistently and naively, answered "No".[58] He did not realize that the poor agricultural laborer who was the central focus of his life's work, the jibaro, would be socially uprooted by economic changes, and later, culturally displaced by the ideological ignorance of foreign pedantics. The slow coffee production in small farms, which had tainted the society with a democratic ethos in the nineteenth century, had been rapidly outpaced by the more efficient sugar production in vast American mechanized mills during the first third of the century.[59] Yet even by 1934, Ashford was still contextualizing the jibaro's anemic plight in terms of the infestations so favorable in the then-obsolescent coffee soils. Although he had greatly advanced the public health of the island, he remained throughout his life in the social mindset of his first encounter.

The severity surrounding this encounter perhaps shocked the experience deeply into his memory. The Hurricane San Ciriaco in 1899 destroyed the town of Ponce where Ashford was stationed, along with the palm-leaf huts of so many laborers and the agricultural crops which had provided their livelihood, including the island's coffee trees. This catastrophe compounded the problems which were normally associated with anemia. Food prices skyrocketed, leading to violent accusations of greed toward Spanish merchants.[60] Without food rations given to the population by the military, Ashford believed that hundreds of thousands would have starved. Yet when the rations for 800,000 provided an ample dietary intake, and were even raised, many of his patients remained yellowish and kept dying. As in Gorgas's case, the unusual circumstances had led to the emergence of a prophylactic anomaly. Its resolution by Ashford would lead him to discover that the cause of these deaths had not been from anemia at all, as believed by the Spanish and islanders for centuries, but rather by an almost invisible nematode now called 'necator americanus.'[61] Working and excreting in the same fields, the jibaro had continually reinfested himself with so many worms that the parasite eventually created its own environmental catastrophe: the death of its host.

Spanish "anemia", still very different from our modern concept, had been pervasive throughout the different social strata of the island.[62] Although he was initially unaware of its statistics, seventy-five percent of laborers suffered from the disease, and of these, a third died. There were few distinct external features to indicate the cause of malaise and lethargy, and was often attributed to flaws of personal character. Discovering via fecal analysis that the agricultural class suf-

fered from hookworm infestation, Ashford's work literally led to a medical revolution in the island. What had previously been fatalistically perceived as a fact of life was now subject to human control with thymol.[63] A few drops of the elixir were enough to eliminate in a few days an illness that had lasted for centuries—it was much more than a magic bullet.[64] The small upper class, however, were be less fortunate.[65]

Because the agricultural laborer made up the largest segment in this agricultural economy, Ashford's relatively insignificant discovery from a scientific standpoint was of momentous importance to the island. He unleashed a flood of patients along with their consequent gratitude to him and the science he stood for.[66] When the first small treatment centers were established, crowds exponentially grew from a small trickle of 10 to 20, to 125, and eventually to 600 patients a day.[67] Such numbers so overwhelmed the first small field hospitals, that King and others were forced these to transfer to new locales ignorant of their work.[68] The same pattern could be observed upon its first institutionalization in 1904 with the Porto Rico Anemia Commission. In the first two years visits nearly equaled the total population of the island: a million souls!

> The war on hookworm became the topic of the day…the whole Island placed itself enthusiastically behind the movement, and both political parties united in the Legislature in sustaining the work with ample funds…. There remained not one single voice to belittle or oppose the work.[69]

Although Ashford had not invented a new science, he had revolutionized the way an entire population looked at their world and themselves. The differences between cultural transfers and scientific revolutions are not as great as many care to imagine.

Yet obviously this cultural transfer did not exist in a vacuum but rather in a preexisting belief system. Humoralism, which was almost as pervasive as it had been in Hong Kong, did not deter him from staying. It was continually mentioned by Ashford throughout his writings. Having studied filariasis in the island, he noticed in 1903 that as the disease progressed from fever to red inflammation of the thigh's inner side, the "native in the mountains attributes these outward manifestations to a cold he has taken from exposure to the rain."[70] The jibaro, or mountain peasant he referred to, believed that his endemic illness was due to 'enfriamiento' or 'chilling'. The cold dampness of the soil rose through their bare feet and 'chilled the blood.' Many patients opposed to staying overnight in treatment cots because feared that the cold nigh air would worsen their condition. As

Manson and other Western commentators of Chinese culture would note, Ashford believed that the jibaro were "a people naturally suspicious of innovation and apprehensive of being made subjects of experimentation."[71]

> The jibaro is equally superstitious and very quickly impressed by a supernatural explanation of any phenomena he can not understand. The more outlandish the explanation of a disease the better he likes it, and for this reason the 'curandero' or local charlatan is so popular and powerful in the mountains.[72]

It was not just the lower classes that held to antiquated beliefs, but many doctors from the island as well. The most basic of empiricist attitudes was generally absent from the medical profession.

> Not that we failed to encounter ridicule, indifference, skepticism, and in some active opposition, for we did, and plenty of it, but we have never yet seen the man who made it his business to see the work at close range, talk to our patients, and see results who was unable to acknowledge the truth…such a man failed to catch the enthusiasm for the work which so commends itself to not only the head, but the heart.[73]

Ashford makes fun of the Spanish doctors which had been so critical of his work in the island. During the war, when they had captured a Spanish battalion, "I took an antiquarian pleasure in appropriating their doctor's operating set, which might have been used by Abriose Pare."[74] Ashford quotes a tautological redundancy of Ricardo Beltran y Rozpide's critique of his work and intent from Spain. Beltran had written that, "not only the common people but even the most erudite doctors who have not had the luck to have been born in the land of the Yankees have always believed that death from hunger is a consequence of a lack of food…"[75] Both the local medical profession and the 'laity' believed that food was the most important cause of anemia. Ashford and his colleagues showed that those with the poorest of diets did not acquire anemia and those who had plenty to eat did.[76]

While it is odd, the local emphasis on food was itself another residue of the humoral philosophy, and it may account of Ashford's hesitance in acknowledging it in his memoirs. Only until fifth chapter does he acknowledge this point.[77] Aside from its nutritional component, the issue of food could be contextualized in a humoral fashion, and thus distracting from a more concrete materialist analysis. In the 1940's, social scientists who had gone to the island and doctors who had treated Puerto Rican patients in the U.S. noted this relation. In the town of

San Jose, representative of the island, it was believed that stomach cramps occurred when hot foods such as yautia or codfish were mixed with cold foods as bananas, onion, or sweet potato. Curanderas, whom Ashford observed to have a strong popular influence, explained illness in such terms. When Puerto Rican mothers in New York treated their babies for diaper rash, about 82% of these believed that it had been due to the improper mixing of a hot food (evaporated milk) with a cold one (whole milk), and consequently alterated their mixture. When eating pineapple led to diarrhea, it was considered 'hot'. One should notice that the categorization were not necessarily based on the actual temperature of the food.[78] Nonetheless, as a 'cause', food potentially could lead to the sudden emergence of a rival paradigm in the popular imagination.[79]

The pervasiveness of humoralism in Puerto Rico was to be expected; after all, it had previously been a Spanish colony before its transfer with the Spanish-American War. As in Latin America, it had been influenced by Spanish scholasticism. The anthropologist George M. Foster has made it his lifetime's work of studying its presence up to our own day. Passed to the elite via Catholic controlled educational institutions, and apparently native to pre-colonial Indian culture, its popular hold was reinforced by an unchanging pedagogy. In Mexico and Chile these teachings persisted almost until the 1840's. The veneration of the ancients, which had been abandoned in most parts of Europe during the Renaissance, were an integral part of the religious faithful in the Spanish metropolis and periphery. Modern works were generally unknown, but perhaps more importantly, unappreciated and thus not fully explored.[80]

It has remained constant ever since. George Squier, an American diplomat to Peru in 1871, observed like many others that

> The Limenos had formerly many queer conceits and maxims about diet and medicine which have greatly given way under foreign contact……in Lima all food is held to be frio or claiente (hot or cold), cosas que se oponen (things hostile), and which, if introduced into the stomach at the same time, would be dangerous, if not deadly.

The philosophy is still t is currently rampant within the popular indigenous mentalite. In Puerto Rico, this tradition seems to have been strengthened during the nineteenth century by an influx of Spanish immigrants. The mountain jibaro, referred to the 'second tier' of Puerto Rican society, was mainly of Corsican, Majorcan, and Catalan origins despite his cultural appropriation by the island in the following century. In 1815, Spain enacted the Real Cedula de Gracias in order to promote the economy when the Mexican situado ended in 1810. Giving

six acres of land to every white-Roman Catholic immigrant, and exempting these from taxes for ten years, it fulfilled its purpose. By 1845, 74.5% of all hacendados were immigrants. Many Spaniards fleeing Latin American nations after their independence came to the island and thereby further strengthening its conservative belief system. Education, or the lack thereof, also seems to have been another factor at the popular level. In 1899, only 16.6% of the population could read. Of these 159,000 people, only five thousand of them had training above primary school.[81]

Yet ironically, Puerto Rico's intellectual dependency on Spain and its highly stratified society muted the impact of humoralism. The island was beginning to scientifically modernize at the elite level, and was thus able to provide an adequate expertise and infrastructural support needed for Ashford's work. Although initiated by Ashford, the Porto Rico Anemia Commission, with its 42 stations, were run mainly by Puerto Rican physicians. Most of his works were co-authored by local physicians. Ashford mentioned that some physicians had been studying tropical diseases with a microscope; Dr. Jimenez Cruz had identified filarial embryos in 1893. Dr. Torrez, 'his experience extend[ing] over many years, had surgically treated elephantiasis 'with most excellent results'.[82] Although this collaboration might have to do with the fact that the American intent was to train locals in American cultural and political sophistication, their ability to work together is itself an indication of more closely shared paradigms than the ones encountered by Manson in China.

While the evidence thus presented might appear contradictory given the predominance of humoralism and Spanish traditional practices, it is not. It is here where the distinction between elite and popular science become separate and hence significant to the historian. Although very few Puerto Ricans received an education, those who did so made sure that they went to the highest centers of learning to do so. Ramon Emetrio Betances, for example, studied medicine in Paris at mid-century. Usually, however, it was more typical of 'Puertorriquenos Ilustres' during the nineteenth century to have gone to Spain for higher education. Jose Julian Acosta and Ramon Baldority studied 'ciencias fisico-matematicas' in Madrid in the 1850's, Eugenio Maria de Hostos law in 1860's Madrid, and Cayetano Coll y Toste medicine at Barcelona in the 1870's—a few examples of this general elite tendency.[83] Yet although this tendency may have served to further engrain what was becoming an increasingly backward ideology, by the last decade of the century Spanish medicine had begun to 'catch up'. Medicine at this era was simple enough whereby an individual could be self taught in the new discipline and actually begin to make contributions.[84]

The two central Puerto Rican figures who had worked with Ashford, Pedro Gutierrez Igaravidez and Isaac Gonzalez Martinez, had both studied at the University of Barcelona in the 1890's.[85] It might be, again, very easy to stereotype the university, and its students, according to its intellectual heritage given that the polemical defenses, which had been so typical of medical training in the eighteenth century and before, were still existent.[86] However, to do so would be a pigeonhole the individual by the group, which might be considered a type of 'racism' pervasive during this period of scientific change. Two important scientist living in Barcelona at the time, one who would be later recognized with a Nobel prize and another who would not, had brought Spain to the forefront of medicine: Santiago Ramon y Cajal and Jaime Ferran.

Cajal had been appointed chair of the histology section at the University of Barcelona in 1887, a position which he retained until 1892 when he moved to the same chair in Madrid. Self-trained in neurology, he discovered that axons were actually units separated from each other at the dendrites, for which he was recognized in 1906. Gonzalez, who began his medical training in 1891, had taken classes during this intense period of activity. Although Ferran did not work at the University, he led the "Laboratorio Microbiologico Municipal" of Barcelona most of his life and wrote a 1889 studies on rabies, which gained favorable recognition by Pasteur. However, his previous and more important claim to having discovered a vaccine against cholera had been dismissed by the French Brouardel Report of 1885, partly out of lack of cooperation between the two. Many French scientists, who could not believe that such a discovery could come from backward Spain, could not afford to ignore its potential significance and traveled to meet Ferran. There had been many problems with his study, such as failure of systematic testing (not unlike Finlay) and mistakes with regard to the pathogenic mechanism of the bacilli. The recognition was eventually given to Waldmar Haffkine, although Ferran was given the Le Prix Breant in 1907. Regardless of whatever we may think of the conclusions of Ferran's work, it was clear that he was utilizing the latest medical science. A 1885 report of the controversy had actually praised his bacteriological knowledge and skillful microbiological techniques—techniques which were passed onto his students. After his medical training, Gonzalez worked for Ferran between 1895 and 1897.[87]

Ashford was very lucky in that he was also not forced to raise the 'upper peaks' of local medical researchers who recognized centers outside their own with great merit and pursued their training in these.[88] Manson would not be as fortunate. This recognition meant that the value system of the relevant upper strata in Puerto Rican society would be in congruity with that of Ashford's, making his

work that much easier and greatly raising his status in that community. Conversely Ashford, an imperial authority, would himself aid local doctors who had not been recognized under the previous health system. This highly centralized system, with non-medical men in positions of authority and patron-like character, had prevented local physicians from enacting medically significant programs.[89] The lower classes would similarly share the same value system, in part because of their lack of education. Although humoralism pervaded such accounts of hookworm, there was a certain materialist empiricism. In 'ignorance', the peasant class would have to observe nature rather than from the 'leido' (those who read and whom jibaros mistrusted) in order to understand their condition. The pedal dentritis first associated with hookworm, was noted by jibaros themselves who appropriately called it "culebras" (snakes). "The sharper ones accuse their annual dermatitis of being the cause of their infirmity [anemia, as opposed to explaining it on the basis of]…improper and insufficient food."[90] Certainly, however, the significant improvement in the quality of life of the jibaro meant that he would be very greatful for such favors; for having saved her life, one woman literally gave her life as a nanny for the Ashford family!

This confluence of value systems would stimulate Ashford's incorporation into the local society. It is perhaps interesting to note that Manson married a woman from London, bringing her back to China, while Ashford married locally with the daughter of a prominent family, naming all of the girls with Spanish names and the eldest son "Malhon". Also, while Manson seems to have remained generally isolated within his European enclave, Ashford became an integral part of the society he worked in. In an interview in the 1950's, Ashford's wife testified that

> He loved his patients, his laboratory, his clinic; loved San Juan in the days of the still lingering Spanish glory, the Spanish homes, the theatre, the dances, horsebackriding, the religious festivals, carnival-time, the terulias…When a Spanish ship came into the harbor, it was a gala time for us young people. It meant parties, dances, and all kinds of social activity.[91]

Strong and close lifelong bonds were formed during his time with the 'natives'; his fond memories of Pedro Gutierrez, who had sacrificed a profitable medical practice to participate in his work, are after-death testimony of this cultural interweaving.

In contrast, it would have been very hard for Manson to have integrated himself into Chinese society. To do so would probably have meant an abdication of his core values and beliefs—a suicidal destruction of his cultural self. As in the

chemical and genetic processes occurring in our bodies, there were too few congruities to provide an appropriate bonding site; the two societies were too inherently different to provide a match. These problems were not only the outcome of differences in 'scientific' belief, but in the overall conservative worldview of the Chinese—a conservativism which had been codified into its social structure and hence tending to continue itself. Scientifically, it had been present not only during the Medieval era when their physicians consolidated their authority as the AMA had earlier this century, but can be seen even today, when some modern Chinese chemists seriously propose a return to a humoral classificatory system of the 'elements of the universe.'[92] If it has been difficult to reform the system in our time, it was nearly impossible for Manson who operated under it as he did a hundred years ago. He would have neither been able to influence this world as Ashford did, nor would he have been able to successfully function within it. To raise the highest peaks of knowledge, he had to go elsewhere—some place where others would also share the same epistemological outlook. It was not just a minor difference of degree he had experienced in China, but a radical schism qualitatively different in nature that existed between the two worldviews.

As a practicing physician, Manson had been continually exposed to elephantiasis while living in Amoy. An unusual disease not found in London, ten percent of the hardworking peasants who lived there suffered from it. It's clinical manifestations, unlike those of uncinariasis, were blatantly visible and grotesque. Parts of the body swelled like a balloon and their skin acquired a leathery, elephant-like, contour. While the disease would never kill, it disrupted the daily life of the individual and of his immediate community. Unable to move because he could not carry the weight of his two-foot scrotum or elephant-like leg, the paralyzed individual was usually also unable to fulfill his duties in this agricultural society. If the disease lead to death, it was from psychological rather than physical injury. One patient of Manson's repeatedly tried to commit suicide at the behest of the family's sole breadwinner, and the example was not uncommon. These reactions are understandable when it is considered that physical labor, not iron engines, drove this preindustrial economy and at the same time hindered Western economic expansion into the region.[93] Although the Chinese did not realize it, Manson's scientific success went hand in hand with the preservation of their way of life.

It had been known since the 1860's that parasites caused a few diseases, although exactly how they first reached the body and maligned it was unknown. Because the consecutive series of links to these relations had not been found, literally its 'mechanism', a coherent model had not been developed to serve as a

broader (and more accurate) explanatory tool unifying other different illness experiences. Conceptually, it did not need to because an older one, humoralism, already existed which cohered the vast range of 'vegetative illnesses' on the basis of miasmata. Hence this new paradigm usually remained restricted to a few diseases that were not necessarily 'tropical' in nature. The 1880 discovery of hookworm ova in workers building the St. Gotthard's tunnel in Switzerland, for example, did not itself lead to a conceptual revolution in the field but remained restricted to its confines.[94] Ancylostoma duodenale and filaria bancrofit belonged to two different 'families' that had not yet conceptually merged.

By recognizing the importance of an odd periodicity of filaria embryos in the bloodstream and pursuing its trace, Manson literally became the 'father' of 'tropical' medicine because it immediately became very clear what the general mechanisms were by which the disease, and other's like it, spread. In other words, he showed not only how, but also why it spread in the particular regions where it did. Similarly, by explaining why the battle chart contoured as it did, he also revealed how a successful therapeutic attack against nature could be won.[95] The mosquito, as a particular case of an insect-vector, provided the crucial key to the parasitological paradigm, and in the process became the arrow which brought the Western humoral framework tumbling down. "Mosquito Manson" indeed. Paris could have done no better.

Yet the filarial knowledge attained by Manson had been hard to come by, in contrast to the relatively easy therapeutic action of sanitation. In and of themselves, the embryos did not cause the disease. Their links to it were hard to assess, especially when the evidence was often contradictory. Many who showed clinical manifestations did not reveal any embryos in their bloodstreams, while those who did not show symptoms of the disease did. It was not as if the body could be opened, and the filariae would easily manifest themselves to the viewer despite their highly visible effects. These were more complex and indirect than those of the hookworms'. Even after five years of elephantoid surgeries which had brought him into contact with the disease in the first place, Manson still had not found the location of the adult larvae. What we might now consider as the most 'obvious' of links between enlarged body parts was also uncertain. One needed to know not only what to look for, but also where to look for it—not unlike trying to find a needle in a haystack.[96] One might have easily concluded, as possily the Chinese did, that the liquid emanations (humor as 'shu' or 'han') caused the illness, but it would have been a very incorrect answer. Only by the observable yet indirect knowledge of the embryo in the bloodstream would the pieces concretely begin to appear and link up in Manson's mind.

After finally finding a statistical correlation between the embryo and the disease, Manson found another between the earth's periodicity and the embryo's distribution.

One Chinese assistant, who had been collecting blood samples during the night, consistently collected samples with a great deal more filaria than the other assistant who worked during the day. Further samples taken every four hours more clearly revealed this pattern in greater detail. Oddly, the sequence would not change with alterations in the person's sleeping pattern, and the fluctuation would remain despite the diurnal constants; light, pressure, and temperature seemed to have no direct influence.[97] Nonetheless the pattern demonstrated that the filaria had a Darwinian-like relation to its environment. Wherever they were during the day, at night they would free-float throughout the blood where they could be abundantly found by an assistant's needle and a mosquitoes' proboscis.

Although Manson in China did not understand the full consecutive links of their symbiotic relationship to humans, believing that mosquitoes recontaminated man by laying its eggs in pond water—an idea which was clearly a miasmatic residue, he had demonstrated the broad outline of the causal linkages. Mosquitos were a necessary factor because it was here where the embryo developed into mature larvae; they were both vector and host of the parasite. It was relatively easy to find and isolate in a mosquito. Doubts certainly existed, such as to how a parasite, which eventually lodged itself in the lymphatic glands at maturity, could be 'aware' of climatological changes it could not directly perceive, and hence the cause of derision by competing British associates.[98] But these were not questions dealing with the broader principles of scientific research but rather the detailed minutiae of a materially-grounded epistemology.

Outside their scientific contexts, however, such important details were innocuous and insignificant. If engineers have low status when they operate in fields outside their own, then scientists similarly held low ranking positions in societies whose cultural differences unconsciously undervalued this achievement.[99] Manson's work was unappreciated and rejected by most Chinese.

Believing that the body should remain as when given by one's parents, the Chinese did not allow postmortems, and violently objected to them. While performing one, "a mob gathered outside, curious to know what the 'foreign devils' [Manson and assistants] were doing, and the outcome was that the 'foreign devils' had to run for their lives." There was a great deal of mistrust even from patients who had purposefully sought his help. One Formosan mandarin, who had provided saliva for analysis, suddenly departed, "possibly being doubtful of the intentions of the foreign devil who had taken such a fancy to his sputa." Since the

Chinese distrusted examinations which were privately held, Manson had to move his practice to the bottom floor near the street for all to observe and thus ease his doctor-patient relations. To do medical research, Manson was forced to either work with animals or illegally in cemeteries. This likely delayed his findings. Despite observing the periodicity in Amoy, it would not be until 1897 in London that discovered that the embryos migrated to the lungs.[100]

The distrust and animosity certainly went both ways. Manson criticized the Chinese for their use of sanitary facilities built by the British.

> The Chinese turned on the water-taps, but they were too lazy to shut them; and naturally, the supply calculated to last a year was exhausted before the year was half-over. The traps had gratings which had been placed over them to prevent them being choked; gratings and traps were ruthlessly removed to facilitate the escape of domestic rubbish. To give these things to Chinamen unappreciative of their purpose and ignorant of their use, was like giving a monkey a fiddle; they did not understand them and they broke them.[101]

Similarly, he also testified upon the founding of the Hong Kong College of Medicine that,

> Those who have been even but a short time in the country know what a wretched thing native medical science is…. The notions on Anatomy and Physiology are absurd; there is no Surgery worthy of the name…Hygiene is unknown…. We find in them the same spirit of artificial classification, the same love of a 'system' that characterized the pre-scientific era in European medicine…every article of food, of drink, and every medicine is classified according as it is considered a heating or a cooling thing….
>
> …we called them fools…By degrees opinion on these points is veering round; mine at all events has veered completely…[102]

Manson's experiences were not unusual. Chinese patient generally conflcited with Western physicians, as they, in turn, criticized Chinese medical beliefs. In order to gain patients, some Western practitioners were forced had to bring along with them a cured Chinese patient who could testify to the doctor's merit. Even when there was genuine appreciation, it was filled with a great deal of ambivalence. "It is not unusual for a native to benefit by a cure at the hands of a foreign doctor, and then go away and make no effort to express his gratitude…[by] a present of silk or tea…[and yet] still think of the doctor…as a foreign devil." Breaking Chinese norms of proper ettiquette could also be a source of mistrust. "Correct behavior, whether at court, in the market-place, or in the seclusion of

private life, is regarded…of such extreme importance…breaches of impropriety in this sense area always severly frowned upon."[103]

If Chinese patients conflicted with other Western practitioners, who also believed in humoralism, Manson's troubles were further compounded by the originality of his ideas. As a relevant social group who did not believe his science, they affected its development as rural farmers had the development of the automobile. If the automobile was 'molded out of shape', so had Manson as a medical researcher operating under the differing ideologies held regarding nature, man, and intellectual progress.[104] Patients, as members of the general social millieu in which Manson lived, reflected the general strains that he would have felt at all of the different facets of his research. The vast interpretative flexibilities that existed between the two cultures prevented any sort of 'closure' to his research—not because the Chinese were his coresearchers but because he was reliant on their support for his work. Only by going to those regions as England where the flexibility was not as acute, would some 'closure' be achieved.

The influence of this system similarly affected his Chinese medical students. Most did not seem to understand the value of research. For those who genuinely appreciated the scientific spirit, they would have to try radically alter the social system in order for any science to flourish under it. The costs were simply too high to go into any scientific research the sort. If Manson was driven out of China for his love of science, his first disciple Sun Yat Sen, was driven into politics for it.

Sun Yat Sen went to Hong Kong in 1887 to study medicine after an already long exposure to Western culture, graduating three years after Manson left China and obtaining a 'certificate of proficiency in medicine.' Fighting with his parents, he had moved to Hawaii at fourteen to live with his older brother where Sen was exposed to Christianity and a very different lifestyle. His religious change itself led to a conflict with the brother, and was forced to move back to the Chinese mainland. In 1884, he studied at Queen's College, a British institution in Hong Kong, and in 1886 would be medical trainee to Dr. John Kerr at the Pok Tsai Hospital in Canton, assisting in minor details and observing along the way. If it is perhaps hard to get direct evidence as to Manson's intellectual influence on Sen, it can be certainly said that Sen had been exposed not only to the culture itself, but to its most noble examples. As in Ashford's case, their interests coincided. Certainly, the environment created by Manson and his institutions, Alice Memorial Hospital and the Hong College of Medicine, allowed Sen to flourish like he would have not been able to in the traditional farming village he came from. He

had been free to express both his scientific and political ideas, even creating his own political group for which he likely would have been beheaded.[105]

Sen's acquired respect and love of science were pervasive through his writings and formed the core of his political philosophy. Sen, who became the first president of the Chinese republic in 1911, explained it in his *Memoirs*. One of the reasons why his political allies had thrown him out of power were the same as those affecting Chinese backwardness—they did not appreciate the difficult and value of science. Believing that 'knowledge is easy while action was difficult', old thinkers as Wang-Yuan Ming had created a social philosophy detrimental to progress. If one looked at any number of examples, from shipbuilding, architecture, chemistry or electricity, one realized that the planning stage of an enterprise was actually the most difficult of all because at this stage one had to consider and foresee a great number of factors. That the individual was not doing any arduous physical activity was irrelevant to the effort involved. In contrast, the building of these facilities was relatively easy because of the specialization of labor—each worker had to only concentrate on a small and specific task. As Manson had likely showed him in biology, 'knowledge was difficult, while action was easy.'

> The modern Chinese, or shall we say the majority, treat the foundations of knowledge with contempt and value action highly. This is not quite justifiable…. In our age of science we must know how to value knowledge as well as performance…. Consequently, there is no public opinion [in China] leading civilization along the path to progress.

Because Japan had recognized the value of science, unlike the Chinese, they had far surpassed the larger nation, and even some of their European rivals. If China had been stuck in a historical stage where knowledge had followed action rather than preceded it, then revolutionaries needed to reverse this philosophy. "The so called modern-living, as well as powerful armies and navies, comes from the development of science…What we should learn from the West is not political philosophy but science."[106]

Only by becoming the leader of the nation would Sen be able to popularize and implement this message. Working as an individual researcher in a society of 400 million would have been too isolating for him to have had much of a cultural impact. To bring science to the nation, he would have to have try to rise to the top of the political elite rather than within medicine's intellectual infrastructure. It was not that Manson's scientific influence had been negligible, but rather that its 'spirit' had shifted realms to become more effective in the region where it resided. Yet Manson, as a mature researcher in his forties ready to hand down the

bits of original insights he discovered for himself, could not afford to wait. Under these conditions, he would never have been able to form a parasitological research school in China nor advance his ideas. Seldomly did his students go into research, and the few who saw its importance, as Sen's case shows, ironically were even less likely to go into it as well.[107] In fact, only when Manson returns does he finally find an appropriate disciple, Ronald Ross, who eventually does the same thing for malaria as Manson had for elephantiasis, thereby laying the conclusive proof of Manson's model.[108] Closure could only be sought in England.

We may thus observe that the same conservative social forces affecting Manson had also affected his disciple and their career decisions. Dr. Cantlie himself suggested that Sen's political influence were undermined by his training as a Western doctor; he may have also been speaking from personal experience.[109] The conflicts Manson experienced had a long history and would continue long after Sen's departure. After the revolution, Mao Tse-tung in 1966 rejected medical advancement and turned to a heavy state reliance on traditional medicine for the treatment of its rural population. While these 'barefoot doctors' were partly an inevitable result of the few number of modern physicians available to the population, 15, 000 doctors for 500 million in 1949, there were clear cultural animosities at work. Chairman Mao believed that "the imperialist powers have never slackened their efforts to poison the minds of the Chinese people. This is their policy of cultural aggression. And it is carried out through missionary works,…hospitals and schools…." These views had 'old' precedents. During the Boxer rebellion of 1900, the Missionary Hospital in Peking had been completely destroyed along with 100 Protestant missionaries. Although Sen had aided Sino-Briton relations, he had been swimming against the tide.[110]

Although Manson never directly informs us why he left China, except to retire according to his son in law, it is clear that the Chinese humoralism had a significant impact on the progress of his work and in his relationship to his patients. Unlike in Puerto Rico, humoralism had been the pervasive belief of his patients, both elite and popular groups, in the late nineteent century. Brought into China by Indian Buddists, it was codified in the *Huang Ti Nei Ching* or *Yellow Emperor's Manual of Corporeal Medicine*, an emperor who supposedly lived in 2597 B.C. Greek ideals seem to have been very similar to those under the prexisting system, and Wang Shu-ho in 280 A.D. further developed these into its own volumes. There had been some opposition as early as 501 BC by Pien Chhio, but the system was socially consolidated beginning in 784 AD. As the AMA had in the United States, physicians then improved their status by nationalized testing of this classic, and were hence able to distinguish themselves as 'literary Confus-

cian scholars' unlike ordinary medical peddlers. These elite would come to define the reality of the body amongst a very uneducated mass for a long time. As late as 1949, only 23% of the entire population ever attended primary school, and of these, only 2% went secondary school. To Manson's detriment, Chinese physicians had been very successful in consolidating their cultural authority from a very early period.[111]

There seem to have been other inter-related causes for this conservativism, and they will only briefly be alluded to. Although defeat in the Sino-Japanese War of 1895 had shown how backward China had become, a deep-seated corruption in the political system led to a series of self-interested positions inhibiting change; "after a few feeble moves all good resolutions are forgotten." Robert K. Douglas in 1896 wrote that "ninety-nine out of every hundred mandarins are wedded by long habit and personal interest to the existing system." The corruption had been experienced by Sen who, when returning from Hawaii had paid 'customs duties' four times in a row—to his dismay, protest, and possible death. Secondly, the system of education was inherently conservative, and had associated educational advancement not so much with intellectual development but rather with social mobility. Physicians attained their role not necessarily because they had successfully passed specialized testing, but rather because they had failed to obtain the highest scores on a general proficiency exam. Thirdly, just as knowledge had been too closely associated with power in the educational system, it was had attained a similar linkage by the way it had been used by Westerners in China since first contacts. The Jesuits had used Western medicine in the sixteenth and seventeenth centuries, along with other Western technologies and sciences, to gain a religious foothold in China.[112] These indoctrinal uses were not generally rejected because they had not affected the power of Chinese bureaucrats, but their coercive use had been noted. When the British acquired treaty ports in 1842, British missionaries similarly took over the function of their predecessors, but with a more threatening impact. Hence knowledge would not attain the taint of universal impersonality but would from a very early period be associated with power and personal interest. The social dynamics generally meant that idealism had been corrupted; metaphorically, Francis Bacon had been too successful.[113]

Manson left China because he was simply tired of coping with China's deeply conservative belief system. It affected his relations with his patients, his own research, and his students. Patience had worn thin, and results were too slow in coming; humoralism had taken its toll. He knew that things were unlikely to change, and consequently, he needed to find a more appropriate cultural environ-

ment in which to work. Speaking of an impersonal other, he gives us a hint in the following statement.

> I have known in my time one, or two, or perhaps three…medical Sir Galahads…men who have buried themselves in some wretched inland town, surrounded by squalor, filth and disease…away from all the comforts…[of] companionship, human sympathy and encouragement, [and who] have silently, steadily, and more or less successfully pursued their lofty ideal….[But] my thought was 'The pity of it!'…to see energy, knowledge, talent, and such power as is diffused…wasted or at most half utilized, frittered away in individual and unorganized effort. Nowadays, to do effective work even Sir Galahads must fight in disciplined squadrons.[114]

Conclusion: The Social Construction of Parasitology

Science is also part of the 'seamless web' of society, but its relation to society are much harder to trace because they are seldomly noted by the scientists themselves. After all, scientists are usually more concerned with nature and their own ideas, i.e. their science, than with any greater social forces affecting them. It is unlikely for this reason that scientific autobiographies will ever explicitly reveal what their social construction were. If they did, it would probably be the work of either a scientist with little merit or one whose life's work focused on the topic. After all, the scientist should be solely concerned with his work. This is generally what has lent him so much esteem and good-natured humor in the public eye. Absent-minded professors are a valued cultural icon for a good reason—it generally makes for very good science.

Hence, to write historical works showing social constructivism, one is usually forced to resort to 'outside' material—economic statistics, demographics, political party platform, and whatnot. The inherent problem with this approach, however, is that they can always potentially misrepresent the scientist and his motivations because they usually come from a context or value system outside of his own. We should be careful in questioning our historical actors.

It is for this reason that it seems that social dislocations provide the most appropriate starting point for the study of science's social construction. This disruption of locale not only makes it very evident to the historical actor what previous set of working conditions he took for granted, and will be more likely conduced to mention these in his memoirs, but there will also usually already exist a great deal of studies of these changes that the historian can then rely on. This will allow the historian to generalize as to what the preexisting conditions

were under which a great number of previous scientists operated under (ie their social construction).

Patrick Manson and Bailey K. Ashford were greatly affected by the societies in which they resided, at home and abroad. About this there can be no question. Its social construction was affected not only by the political world in which they lived, but by the differing beliefs systems, or culture, in which they also resided. They were both scientists that had been 'placed' in a foreign environment, and thus immediately creating a sort of 'natural experiment' for the historian to analyze. American colonialism gave Ashford a great deal of power, while British imperialism actually hindered Manson's influence. Culturally, China was not yet ready for Manson's science, while Puerto Rico, as a representative of Spanish society, was more than ready for change. If power and knowledge enhanced each other in one case, they both were undermining factors in the other. Despite Manson's and Ashford's same ends, the means available to them greatly differed.

By opting to either stay in the colony or leave for the metropolis, each scientist consciously sought out those environments which would be most favorable to their science. It is not just that societies mold and 'construct' the development of science en situ, but rather that scientists, intuitively aware of these dynamics, have purposefully sought out these 'social constructions' throughout history. In either case, the scientist is not just a passive recipient of this impact but actively reacts to the system he either finds himself in or is a part of. In other words, the social construction of science resides not only during the times when the creation of innovations actually takes place, but can also be observed in the period prior to this practice—in those times when the outcome of innumerable choices are uncertain and results by no means foreseeable. The world of colonial science provides hundreds of such examples.

Although China, as a tropical site, provided important epidemiological experiences for Manson as Puerto Rico had for Ashford, it also hindered his scientific research. Living where he did, he experienced the wide range of social forces that had traditionally inhibited the development of Chinese science. It was not necessarily that men opposed his research, although certainly such was the case, but rather that there also existed a much deeper array of social forces at play. Perhaps these originated in the educational system, which only rewarded the status quo, or maybe it had to do its political system. Whatever the case might be, the social construction guiding the development of Chinese science was very different from that which steered the British. Although it preserved social stability, it created a value structure almost inversely that of Manson's that hindered scientific

progress. Yet by working in it as long as he did, Manson had been forced to genuinely participate in a world of cultural pluralism.

It might be argued that to study social constructivism in its 'radical' form, focusing solely on how society 'shaped' the internal facts of the science, is still to define science too narrowly. It is not radical enough. As the case of Sen Yat Sen demonstrates, the impact of Chinese society on the diffusion of Western science in the region ricocheted into realms outside of science—back into society itself. In other words, when 'society' too actively constructed science, this 'science' reacted back to reform that society; it became a 'scientific' construction of 'society'. Domestic interactions between individuals of both societies made it clear that China could no longer afford to remain a traditional society. In the normal competition that exists in international affairs, she was being left behind by her antiquated political and belief structures. Hence, while the internal line of parasitological research that Manson pursued continued elsewhere, Sen, as his disciple, did continue the pursuit of science, but in a very different fashion. It was not just that society had 'constructed' the 'facts' of science, but that in a sense it had shifted these 'facts' (or its spirit) into the realm of politics.

When there was an overlap in the manner by which the two societies constructed science, as was the case for Ashford in Puerto Rico, the congruities allowed for the normal social construction of science. Ashford obtained the funds necessary for his institutions, and these were eventually transformed into a research school in a foreign land. The diffusion of Western science had been successful under these conditions. These overlaps actually strengthened what would have normally been a weak science in their respective regions. By bringing together physicians who had traditionally had a relatively low social status, American expansionism actually strengthened their power and control.

ENDNOTES

[1] An abbreviated version of this essay appeared as "The Social Factors Affecting the Diffusion of Parasitology to Puerto Rico and Hong Kong," *Puerto Rico Health Sciences Journal* 20,4 (December 2000), 367-375.

[2] Philip H. Manson-Bahr & A. Alcock, *The Life and Work of Sir Patrick Manson* (New York: William Wood and Co, 1927), 130.

[3] Bailey K. Ashford, *A Soldier in Science: The Autobiography of Bailey K Ashford* (New York: William Morrow and Co, 1934).

[4] This is a statement impossible to currently asses by this author, and should be taken lightly. Throughout his autobiography, Ashford makes no claim to fame based on a scientific discovery but rather on his clinical 'revolution'. This is not to say that he did not publish in the leading scientific journals of the day, which he did and whose number quite voluminous. It would take further inquiry into these and the state of parasitology of the day to validly assess this claim. There is evidence that the British school rejected his claims with regard to his later research on sprue, but again I do not have the expertise to assess the disputes. consult Lula Thomas Homes. "A Prophet in Medicine in Puerto Rico: Bailey K. Ashford." 1950 [photocopy], 26. Armed Forces Medical Library, Washington D.C; William H. Crosby, "The Hematology of Hookworm Disease, Contribution of Bailey K. Ashford, " in *Puerto Rico Health Sciences Journal* 4,3 (Dec 1985), 113-119. Showing that hookworm could affect an entire population, as Crosby does, while socially significant is of no real direct scientific contribution.

[5] Philip Manson-Bahr, *History of the School of Tropical Medicine in London, 1899-1949* (London: H. K. Lewis & Co,. Ltd, 1956); Patrick Manson, *The London School of Tropical Medicine* (London: E. G. Berryman & Sons, 1903); Bailey K. Ashford and Pedro Gutierrez Igaravidez, *Unciniariasis (Hookworm Disease) in Port Rico: A Medical and Economic Problem* (Washington D.C.: Government Printing Office, 1911); Bailey K. Ashford, W. W. King, and Pedro Gutierrez Igaravidez, *Informe Prelimiar de la Comision para la supresion de la anemia en Puerto Rico* (San Juan, P.R.: Bureau of Printing and Supplies, 1906).

[6] Conversation with Dr. Kozek, of the University of Puerto Rico's School of Medicine, May 11, 1998; see also Philip Manson-Bahr and Charles Wilcocks, *Manson's Tropical Diseases* (Baltimore: Williams and Wilkins Co., 1972), 310. Although research in 'tropical medicine' at the UPR declined in the 1970's, new faculty was hired in the 1980's, rejuvenating the program. Dr. Kozek, who studied at Tulane, is himself the result of this rejuvenation. Dr. Gonzalez still works in Puerto Rico.

[7] John Z. Bowers, *Western Medicine in a Chinese Palace: Peking Union Medical College, 1917-1951* (Philadelphia: Josiah Macy Jr. Foundation, 1972), 106-7; 170. Faust conducted a survey of parasitical diseases in China, published in 1926. Kenneth S. Warren, "Farwell to the Plague Spirit: Chairman Mao's crusade against Schistosomiasis" in John Z. Bowers, J. William Hess, and Nathan Sivin, eds. *Science and Medicine in Twentieth Century China: Research and Education* (Ann Arbor: Center for Chinese Studies, University of Michigan, 1988), 123-

140. Asian leaders in the field of tropical medicine this century came from Japan rather than China—a point evidenced in Ashford's autobiography who knew Dr. Hideyo Noguchi. (Did Mao's program use Gonzalez's pecipitin test?)

[8] Trevor J. Pinch and Wiebe E. Bijker, "The social construction of facts and artifacts: or how the sociology of science and the sociology of technology might benefit each other," in *The Social Construction of Technological Systems*, Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., (Cambridge, MA: MIT Press, 1987), passim; Trevor Pinch, "The social construction of technology: a review," in *Technological Change: Methods and Themes in the History of Technology,* ed. Trevor Pinch (Amsterdam: Harwood, 1996), 23;

[9] William L. Langer, *The Diplomacy of Imperialism, 1890-1902* (New York: Alfred A Knopf, 1951), chpt 12; Nigel Cameron, *An Illustrated History of Hong Kong* (Oxford University Press, 1991).

[10] Manson was actually from Scotland.

[11] C. C. Eldrige, *England's Mission: The Imperial Idea in the Age of Gladstone and Disraeli, 1868-1880* (New York: MacMillan, 1973), 41; chpt 3; 234; 176-9; 197, 200.

[12] Many current authors actually argue the opposite. They try to project back the rise of the imperial ethos in the 1890's to the mid century by showing that England continued to acquire territories throughout the period—not unlike what current U.S. historians are now trying to show between Cold War capital expansion and turn of the century behavior. I do not have the expertise to quarrel with the point with regards to England, but it seems that this is a flawed methodology—not unlike "imput[ing] cause to condition." In other words, it is to wrongly believe that actor intent can be assessed by historical outcome. Even daily experience will show that 'outcome' is never fully determined by a person's will, but is rather the result of complex process involving multiple actors, institutions, values, and social forces. (If one could, they would be a god. One of the core lessons in the history of technology is the law of unintended consequences.) For a critique of 'historical determinism' (whether from the point of view of the future or the past with regard to a certain event) and an emphasis on 'process', see Whitney T. Perkins, *Constraint of Empire: The United States and Caribbean Intervention* (Westport, CT: Greenwood Press, 1981), Introduction.

[13] Robert Hyam, *Britain's Imperial Century, 1815-1914: A Study of Empire and Expansion* (London: B. T. Batsford, 1976), 360-7; Langer, chpt 3.

[14] Joseph Gallager and Ronald Robinson, "The Imperialism of Free Trade" in Roger Louis, ed. *Imperialism: the Robinson and Gallager Controversy* (New York: New Viewpoints, 1976), 61.

[15] Clarendon had pointed this minimalism out in 1870.

[16] Frank Welsh, *A History of Hong Kong* (New York: Harper Collins, 1993), 256-7, 261-6. One result was the doubling of these in the military community

[17] There is a historical irony. When San Yat Sen was imprisoned by the Chinese representatives in London, the British nation was aghast at the breach of security. The Chinese embassy had destroyed British sovereignty. Will be discussed later in paper.

[18] Welsh., 162-6. The Chinese also found a plentiful number of jobs in the city, not as individuals directly associated with an employer but rather as 'coolies' indirectly controlled by a middleman 'compradore'.

[19] James Cantie, "Hong Kong" in *India, Ceylon, Straights Settlements, British North Borneo, Hong Kong*. (New York: Funk and Wangalis Co, 1899), 521, 516, 506; Welsh, 137, 253.

[20] Welsh., 253-4.

[21] Robert V. Kubicek, *The Administration of Imperialism: Joseph Chamberlain at the Colonial Office* (Durham, NC: Duke University Press, 1969), 30.

[22] Kubicek, chpt 1-2; Langer chpt 3; Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (New York: Oxford University Press, 1988); Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981).

[23] Kubicek, 23-4; 37. Chamberlain remained in office longer than most secretaries—for eight years while the average tenure had been less than two.

[24] Anybody in his position, could probably see the benefits which tropical medicine would confer on control of the empire. In fact, he sent out 'informal warn-

ings' during his many lectures, which seem to have reached those like Read who were so well informed.

[25] In a 1903 circular, Chamberlain explained his views of 1897. Manson-Bahr, 1927, 213-4.

[26] There were 74 permanent posts, of which 12 new positions created in only one year (1897); there was a great demand for colonial doctors in contrast to their short supply. Kubicek, 143. It is important to note that Read knew not only of the practical value, but of its scientific meaning as well. The school might be said to have been Read's as much as Manson's project.

[27] Donald Flemming, *William H. Welch and the Rise of Modern Medicine* (Baltimore: Johns Hopkins Press, 1987).

[28] As in England, the science was too new and its worth not yet adequately demonstrated. Unlike England, however, Stiles operated under the excessive protestant ethos which favored practical result over epistemological merit.

[29] Note the irony in that this was the year in which Manson's Manual was published.

[30] John Ettling, *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South* (Cambridge: Harvard University Press, 1981), chpts 1-6. Stiles was bringing a new science to America as Ashford had to Puerto Rico. He had been trained in Germany at the University of Berlin under Rudolf Lueckart between 1887 and 1890. Leuckart had discovered the trichina worm in the pig, which also led to the first meat inspection. His book is now considered a landmark in zoology. Stiles had also briefly worked at Koch's and Pasteur's institutes. His problems also seem to have been compounded by an ever increasing bluntness and tactlessness from not receiving expected support.

[31] Paul Starr, *The Social Transformation of American Medicine* (New York: Basic Books, Inc., 1982), chpt 3. For funding of U.S. science see Nathan Reingold, "American Indifference to Basic Research: A Reappraisal" in Nineteenth-Century American Science: A Reappraisal. ed George H Daniels (Evanston, Northwestern University Press, 1972).

[32] Ibid., 141. Ashford gives some support for these attitudes—Walter Reed was going to be sent to the Philippines despite his suggested tests for yellow fever in

Cuba. In other words, Reed could not really dictate where he wanted to go, but had to go wherever he was sent. A similar thing was about to happen to Ashford, but he caught diphtheria and was prevented, fortunately, from leaving. Ashford, 47-8.

[33] Ashford, 1934, 360.

[34] As with the School of Tropical Medicine, the Porto Rico Anemica Commission, later named the Bureau of Tropical and Transmissible Diseases, was eventually incorporated into the island's medical infrastructure in 1911. It was placed under the central authority of the Commissioner of Public Health. Ashford, 1934, chpt 6.

[35] The first graduate was actually an Indian (ie Britain's India)! See Thomas. The institute was also funded by the Puerto Rican legislature.

[36] For a discussion of the eventual split, see Annette B. Ramirez de Arellano, "Columbia's Overseas Venture: The School of Tropical Medicine at the University of Puerto Rico." *Medicine's Geographic Heritage*. 5 (Dec. 1989), 25-40.; Aida Negron de Montilla, *Americanization in Puerto Rico and the Public-School System, 1900-1930* (Rio Piedras, San Juan: Editorial Edil, Inc, 1970.)

[37] Ashford, 1934, 53-6; 125-7. Ashford would be similarly released from duty in 1916. Part of the reasons for his aggressive behavior also stem in the kind of doctors he might have been forced to work with. Although he never makes his reason clear, it seems like the conflicts of scientific 'ideologies' played a role as well.

[38] See Elihu Root, *The Military and Colonial Policy of the United States: Addresses and Reports* Robert Bacon and James Brown Scott, eds., (Cambridge: Harvard University Press, 1916); Theodore Roosevelt Jr., *Colonial Policies of the United States* (New York: Doubleday, Doran & Co, 1937). The formation of this structure was affected by cultural encounters, as parasitology would be. It might be pointed out that the system ironically was not democratic precisely because it was paternalistic! By maintaining the upper hand, U.S. administrators taught, but at the cost of their "students'" political participation.

[39] Raymond Carr, *Puerto Rico: A Colonial Experiment* (New York: New York University Press, 1984), 36-7.

[40] The island would remain under the War Department until the creation of the Bureau of Insular Affairs in 1939. It's political relation to the United States would not be altered until 1952 with the establishment of a commonwealth relation under Luis Munoz Marin, whose father had known Ashford. The issue as to whether the U.S. is an imperial power in this period is widely debated. Current scholars, liberal in attitude, tend to characterize it as such. For more nuanced analyses of the issue consult older and more comprehensive sources as Whitney T. Perkins, *Denial of Empire: the United States and Its Dependencies*. (Leyden: A. W. Sythoff, 1962); Julius W. Pratt, *America's Colonial Experiment: How the United States Gained, Goverened, and In Part Gave Away a Colonial Empire*. (New York: Prentice Hall, 1951).

[41] He was proud not only of the therapeutic success, but perhaps more drastically of its economic efficiency. At a European conference, Ashford, who had been rather timid, suddenly rose before the audience to claim that his cost per patient had been that of 62 cents as opposed to two dollars. Efficiency had become a very important ethos to a society that was so individualistic, yet technologically backward as most of the U.S. had been in the nineteenth century. Ashford, 1934, see Starr.

[42] Ashford and Gutierrez, *Uncinariasis*, 15-6; Ashford, 1934, 90-1. If he meant well, considering that he operated mainly within a nineteenth century social mentality, his actions increased U.S. local economic control.

[43] Even then, the foundation of that school, Ashford's Institute, had been formed five years prior to the Act.

[44] James L. Dietz, *Economic History of Puerto Rico: Institutional Change and Capitalist Development* (Princeton: Princeton University Press,1986.), 30-1, 282-8, 125. There was a lag in sexual behavior that was not publicly addressed until 1970. Another factor to this growth also include welfare transfers to the island, which prior to 1969 had originated by U.S. policymakers. Catholic values in the island also prevented a discussion of birth control until the 1970's. Dietz attributes the growth in the immediate post 1898 period to migration, but this is somewhat questionable given improved medical facilities.

[45] Manson-Bahr, 1927, 79, 82. Manson had actually returned twice to England in 1875, and 1882. His first research at the British Museum was somewhat successful, but after a lot of wasted time. Although he complained of not having

access to latest research, he depicts his stay in the Reading Room as 'dreary' and 'profitness' enough. Again, he does not hear of Laverans' 1880 research until 1884. Dr. Baelz's letter to Manson in China, and others like it, suggests that personal communication was a more efficient way than library research in the metropolis.

[46] Ashford, 1934, chpts 9-12; 193-194. During his stay in Brazil, he formed many close and long lasting relations with other physicians, as he had in Puerto Rico. His military service had also introduced him to many other regions. In 1906 he served as medical officer to the Batallion of Engineers for the Washington Barracks. He is later transferred to Mississippi, where his services were so appreciated, that he was given a gold watch by the local towns people—an incident which he was rather fond of.

[47] We may note the romanticism of war that was so common to his time. Ashford's departure was a very 'irrational' behavior on his part. Given his valuable knowledge base, his death potentially represented a very serious loss to American medicine. He was not only told so by General Silbert, but seems to have realized this when a torpedo nearly hit his boat on the way to Europe. Nonetheless, he makes light of the incident. Ashford, 1934, chpt. 13.

[48] This seems to have been the norm. General Leonard Wood, a doctor who was made governor of Cuba, and later of the Philippines, pushed himself and his wife to the limits. see Ronald Fettes Chapman, *Leonard Wood and Leprosy in the Philippines: The Culion Leper Colony, 1921-1927* (Washington D.C.: University Press of America, 1982).

[49] It might be argued that China, despite her greater scientific and technological sophistication in the early modern period, was further set back by the West's own growth. This is not to say that the differences between the two increased between 1300 and 1800, which would only be a statement of fact, but rather that the perception of this greater difference served to further promote itself. Thinking that advancing Western 'science' was somehow innate to the region, they strove to preserve what was culturally their own—i.e. their traditional patterns of thought and behavior. In fact, both medicines were almost identical from an epistemological point of view; as modern scholars agree, they were both humoral. see Michael Adas for a discussion of the evolutionary scientific division between the two societies.

[50] Ashford, in his autobiography, wrote of himself "…people had always taught him that nobody in the world was better than anyone else…but he knew enough to realize that they did not believe it…. The real objective, then, was to get to where the right to order was recognized."

[51] John M Gibson, *Physician to the Word, The Life of General William C. Gorgas* (Durham, N.C.: Duke University Press, 1950), 61.

[52] Michael Worboys, "Germs, Malaria, and the Invention of Mansonian Tropical Medicine: From 'Diseases in the Tropics' to 'Tropical Diseases." in David Arnold, ed*., Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500-1900* (Amsterdam: Rodopi, 1996), 191-207.

[53] Mary C. Gilett, *The Army Medical Department, 1865-1917* (Washington D.C.: Center of Military History, 1995), 257-284. The committee had also placed an undue emphasis on thrift.

[54] Gibson, 65. Dr. Josiah Nott had been ridiculed in 1848 for suggesting and believing in the theory. Ibid., 56, 15.

[55] It is hard to believe that these conditions were so pervasive in the last century, and continue to predominate in many parts of the third world.

[56] George Kennan, "The Regeneration of Cuba" in *The Outlook* 61, 15 (April 15, 1899), 872. Conditions were worse than one might think. A large cistern which had provided drinking water for a local hospital contained, "human bones, the bones of various animals, old shoes, rages, articles of clothing, and a foot or more of soft, slimy matter whose nature and origin was impossible to determine." The cistern had not been cleaned out before, apparently in half a century. (p. 877)

[57] Gibson., 59.

[58] Ashford, 1934, passim.

[59] Dietz, chpt 2. Coffee's economic role diminished from 59.7% in 1897 to. 3% in 1935 while sugar rose from 21.6% to 60% in these same years; in actual numbers, while sugar production rose from 66,073 to 866,109 tons between 1895 to 1930, the volume of coffee exports declined from 39 million to about 800,000 pounds.

[60] The same thing had occurred in Cuba but for different reasons. Wood himself was disgusted by these merchants and forced them to artificially lower their food prices. It might be argued that, ignorant of economic theory, what was perceived as 'greed' was 'rational economic behavior'. They were reacting to economic realities rather than out of a moral flaw. The sharp decreases in supply and consequent increases in demand of food, led to its price increase. The lack of a Keynsian economic theory at the time might be one of the reasons why Cubans attained their 'greedy' image which has pervaded to this day. In other words, both Puerto Rican and Cuban were accused for personal flaws which were actually the result of unknown and aggregate causes (hookworm, economic law). For the Cuban case, see Hermann Hagedorn, *Leonard Wood: A Biography* 2 vols. (New York: Harper and Brothers Pub., 1931); George Kennan, "Cuban Character," in *The Outlook* 63,17 (December 23, 1899),959-965; George Kennan, "Cuban Character," in *The Outlook* 63, 18 (December 30, 1899), 1016-1022; Francis H Nichols, "Cuban Character," in *The Outlook* 62, 13 (July 29, 1899), 707-713.

[61] Ashford, 1934, chpt 3; Bailey K Ashford and W. W. King, "A study of Uncinariasis in Porto Rico," *American Medicine* (Sept 5, 1903), 392; Bailey K Ashord, "Ankylostomiasis in Porto Rico" *New York Medical Journal* 71 (1900) in *Tropical Medicine and Parasitology: Classic Investigations*, B. H. Kean, Kenneth E Moff, Adair J Russells, eds. vol II (Ithaca: Cornell University Press, 1978), 314-318. The different emphasis on food in the articles will be discussed later.

[62] While their anemia was attributed to food, it should be distinguished from our contemporary use. It is generally understood according to the improper ration of blood destruction in the liver to blood production in the bone marrow (hemolytic and erythropoiesis anemias); in other words, it is a physiological problem rather than a digestive one.

[63] Ashford and Gutierrez, *Unciniariasis.*, 1-98. For views of fatalism in traditional societies, or (more broadly) the impact of modernization on culture and visa versa see George M. Foster, *Traditional Cultures and the impact of technological change* (New York: Harper and Brothers, 1962), chpt 5; Daniel Learner, *The Passing of Traditional Society: Modernizing the Middle East* (New York: the Free Press, 1966), passim; Henry Wells, *The Modernization of Puerto Rico: A political study of changing values and institutions* (Cambridge, MA: Harvad, 1969), chpt 1. Oddly, the impact of modernization on culture is not analyzed in such modern works as

Kathy Gardner and David Lewis, *Anthropology, Development, and the Post Modern Challenge* (London: Pluto Press, 1996).

[64] Necator Americanus was actually African, being brought to the island by African slaves early in the Spanish colonial period.

[65] Ashford also distinguished the sprue from the anemia in this group. Although he would dedicate most of his life to its cause and cure, he would generally be unsuccessful. His new diets, however, would greatly help the patient.

[66] Socially, it was a 'high-yield, low-cost' investment, so common in U.S. scientific history. Most of the research had already been done prior to his entry into the island by Manson. This is not to say that Ashford did not try to do research, which he certainly did. It might be pointed out that in contrast to its social benefits, Ashford's scientific work was actually of 'low-yield, high cost' character. This might be due not necessarily to his 'intellectual aptitude' but rather that the most important discoveries had already been made; perhaps only until further innovations (i.e. technological or chemical) would the field progress. Further research is needed to answer this question.

[67] Ashford and Gutierrez, 100-115.

[68] The field hospital was of great importance to Ashford; 'invented' by him, he believed that its use throughout Latin America would be of great medical profit. While in Brazil, he further tested the invention. Ashford, 1934, passim.

[69] Ashford, 1934, 82-3.

[70] Bailey K. Ashford, "Fialriasis in Porto Rico" *Medical Record* (Nov 7, 1903), 726.

[71] Ashford, 1911, 103, 108, 111.

[72] Ibid., 14.

[73] Ibid., 30.

[74] Ashford, 1934, 27, 54-5, 67. He also criticizes practitioners for overcharging their patients, selling tonics for a dollar when the cost was fifteen cents. Even of a local colleague, Augustin Stahl, he mocks for his hypocritical eloquence; after paternalistically praising the 'neglected wards' under their responsible tutelage,

Stahl suddenly rebuked a patient who had pulled his coat-tail seeking help. Same thing true of Gutierrez. The taint of the Spanish character was present even in one of his most trusted co-workers. Gutierrez was "a perfect example of Spain's impetuous nobility, handsome, with an almost abnormal sense of honor, chevalierly correct behavior, and above all, loyalty."

[75] Ashford, 1934, 30. He also believed that when food is scarce and severe anemia comes, this can produce death. It seems like comments like there were made as rhetorical groundpoint in debate, obviously they cannot be questioned and lowered the opponent's status.)

[76] Bailey K. Ashford, "A study of Uncinariasis in Porto Rico" *American Medicine* (Sept. 5, 1903), 392.

[77] Although in his first 1900 article, he recognizes its role, and of local doctor's role; there seems to have been a change.

[78] There were other forms in which humoral explanations manifested themselves. Taking a bath in a cold river after hard work (hot) or if one were a newly wed, both 'hot' states, could lead to sickness: muscular spasms or bladder infection respectively.

[79] Eric Wolf, "San Jose: Subculture of a 'Traditional' Coffee Municipality" in *The People of Puerto Rico, A Study in Social Anthropology*, ed. Julian Haynes Steward (Urbana: University of Illinois Press, 1956), 216-7; Elena Padilla Sedda, "Nocora: The Subculture of Workers on a government-owned Sugar Plantation" in Steward., 288; Alan Harwood, "the Hot-Cold Theory of Disease, Implications for Treatment of Puerto Rican Patients," in JAMA 216, 7 (May 17, 1971), 1156, 1154.

[80] *George M. Foster, Hippocrates' Latin American Legacy: Humoral Medicine in the New World* (Amsterdam: Gordon and Breach Science Publishers, 1994), 1, 147-152; J. J. Izquierdo, *El hipocratismo en Mexico* (Mexico, D.F.: Imprenta Universitaria, 1955), 7.

[81] Dietz, 22,54; Arturo Morales Carrion, *Puerto Rico: A Political and Cultural History* (New York: W.W. Norton & Co, 1983), 92-8; Jose Luis Gonzalez, *Puerto Rico, The Four Storeyed Country and Other Essays* (New York: Markus Wiener Publishing, Inc, 1993), 12.; Wells, 48.

[82] Ashford, Nov 1903, 725-6.

[83] Cayetano Coll y Toste, *Puertorriquenos Ilustres* (Barcelona: Jorge Casas, 1971), passim; see also Rigoberto Pérez Velez, *Puertorriquenos ilustres de todos los tiempos* (Ponce: Velez, 1986); Vincente Reynal, *Diccionario de hombres y mujeres ilustres de Puerto Rico y de hechos historicos* (Rio Piedras, P.R.: Editorial Edil, 1983). Padro also lists the many Puerto Ricans who had been studying there at the time.

[84] The state of the historiography of science and medicine in Latin America written in Spanish is generally very poor. The complex issues of scientific transfer, cultural change, and its consideration in light of the actual state of local science visa vie higher centers, is seldom addressed. If the traditional history of science has been too internalist, that of Latin America has not. In other words, a central question in the field has not been written about. This literature be contrasted to that on China, whose cultural differences were very visible, and the transition from one state of knowledge to the other widely felt and written about (hence a wide variety of primary sources from which to study). Jose Luis Martinez Sanz, *Relaciones cientificas entre Espana y America* (Madrid: Editorial MAPFRE, 1992), 271-339; Aristides A Moll, *Aesculapius in Latin America* (Philadelphia: W. B. Saunders Co, 1944); Aristides A Moll, *Half a Century of Medical and Public Health Progress, 1890-1940* (Washington D.C.: Pan American Union, 1940); John Z. Bowers and Elizabeth Purcell, ed, *Aspects of the History of Medicine in Latin America, Report of a Conference* (New York: Josiah Macy Jr. Foundation, 1979); Guillermo Fajardo Ortiz, *Los caminos de la medicina colonial en iberoAmerica y la Filipinas* (Mexico, DF: Universidad Nacional Autonoma de Mexico, 1996). For a view of the state of Latin American medicine by North American physicians, see Franklin H. Martin, *South America from a Surgeon's Point of View* (New York: Fleming H Revell Co, 1922). In their very interesting account, Martin and others show that most the time spent doing medical 'research' was not scientific per se but rather reading the latest European and American journals; they were surprised by the many languages locally known.

[85] Vincencte Baez, ed. *La Gran Enciclopedia de Puerto Rico* (Madrid: C Corrdera, 1977), 14, 159; Antonio Pacheco Padro, *Isaac Gonzalez Martinez: Su Vida y su Obra* (San Juan: Editora Montalvo: 1954), chpt 3. I could not find a biography on Gutierrez. There is some contradictory information of where he studied. Another source claims that he studied in Seville. Adolfo de Hostos, *Diccionario Historico Bibliograpfico Coventado de Puerto Rico* (San Juan: Instituto de Cultura Puertorriquena, 1976), 476. Igaravidez graduated in 1896, Gonzalez in 1897.

[86] Michael E. Burke, *The Royal College of San Carlos: Surgery and Spanish Medical Reform in the Late Eighteenth Century* (Durham, N.C.: Duke University Press, 1977), passim.

[87] George H. Bornside, "Jaime Ferran and Preventive Inoculation against Cholera," in *Bulletin of the History of Medicine* 55,4 (Winter 1981), 516-532; George H. Bornside, "Waldemar Haffkine's Cholera Vaccines and the Ferran-Haffkine Piority Dispute" in *Journal of the History of Medicine and the Allied Sciences* 37, 4 (October 1982), 399-422. Valentin Matilla, *Jaime Ferran y su Obra* (Madrid: Insitituto de Espana, 1977); *Dictionary of Scientific Biography*, 1970 ed., s.v., "Ramon y Caja, Santiago" ; Pacheco, 31, 34. Ferran had been in communication with Koch and Pasteur throughout his life. The dictionary states that the years between 1886 and 1906 were the most productive for Ramon y Cajal. It is interesting to note also that he had been to Cuba in 1873 but had to left a year later after a bought of malaria. The number of Gonzalez's scientific publications are quite a few, and, not unlike Ashford, was the first to 'discover' biharisis, in the island.

[88] Training centers would shift from Spain to the U.S., as evidence by Jose C. Barbosa who studied medicine in Michigan. The same thing could be noted in Cuban medical training.

[89] Ashford, 1911, 17-20. It probably deterred the development of tropical medicine as a science in the island. this was perhaps the exact opposition of the system established by Americans in Cuba. Wood had been a doctor in a position of military authority.

[90] Ashford, 1911, 111.

[91] Thomas, 15. It was also commented by Ashford who wrote that "we all shared in the illusion that we were princes and princesses" at carnival time. Ashford, 1934, 118.

[92] Between 758 and 1140, Chinese physicians imposed standardized examination of their students to improve their status as a group. These examinations, unlike the AMA's, were not necessarily based on specialization per se but rather formed the core of a literate culture based on a broader cultural canon. Joseph Needham, "Chinese Medicine," in *Medicine and Culture*, F. N. L. Pynter, ed., (London: Wellcome Insitute of th History of Medicine, 1969), 256-7. A Chemist from a Chinese university proposed such a system to a journal of the American Chemical

Society here in Austin. The short paper alluded to such thing as 'blood ties' between the elements, and, like in their old belief system, tried to link the individual within a much larger cosmological structure. Since this information is confidential, I cannot reveal my source. However, it suggests the following project. A review of the articles rejected by modern scientific journals would reveal how persistent many of these beliefs are, and would be very suitable for a paper.

[93] Headrick, 1988, 259-265; David Healy, *U.S. Expansionism: The Imperialist Urge in the 1890's* (Madison: University of Wisconsin Press, 1970), 178-194.

[94] Ettling, 24-7; the slow process is noted in Manson-Bahr, 121-3. Although an important step in the discovery process which did broaden the number of associations made, it did not have the same effect as that which Manson's work had. One might argue that the Italians are just as easily co-founders of the field.

[95] For examples of attacks on insect-vectors as the sole means of prevention see Steven C. Williams, "Nationalism and Public Health, The Convergence of Rockefeller Foundation and Brazilian Federal Authority during the time of Yellow Fever, 1925-1930," in Marcos Cueto, ed*., The Missionaries of Science: The Rockefeller Foundation and Latin America* (Bloomington: Indiana University Press, 1995), 23-51; Margaret Humphreys, "Kick a Dying Dog: DDT and the Demise of Malaria in the American South, 1942-1950" in ISIS. The attacks on yellow fever, as well as those by the U.S., solely were based on the destruction of mosquitoes.

[96] The same thing had been true of studies of hookworm. It took about twenty years before Italian scientist realized that their eggs could be found in human excrement, and thus relatively easy to trace it in the body without killing the person.

[97] Manson-Bahr, 49-50. In the humid tropics, unlike the desert, night and day temperatures tend to be relatively stable.

[98] It was asked if the filaria carried a watch around with them.

[99] Edwin Layton, "Mirror-image twins: the communities of science and technology in nineteenth-century America," *Technology and Culture* 12 (1971), 562-80.

[100] Manson-Bahr, 1927, 18-19, 72, 75; for Chinese view on postmortems see Guiles.

[101] Patrick Manson quoted in Ibid., 89.

[102] Ibid., 96-7; 101.

[103] Herbert A Giles, *The Civilization of China* (New York: Henry Holt & Co, 1911), 215-6, 224; John C. Bowers and Elizabeth Purcell, eds., *Medicine and Society in China* (New York: Josiah May Fr. Foundation, 1974), 40-55; J. A. G. Roberts, *China Through Western Eyes, The Nineteenth Century, A Reader in History* (Glouchestersire, UK: Alan Sutton Publishers Inc., 1991), 40, 47-9; Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989), passim. Chinese doctors would often worsen these conflicts by spreading rumors of their Western competitors, while at the same time peddling the same Western prescriptions.

[104] Ronald Kline and Trevor Pinch, "Users as agents of technological change: The social construction of the automobile in the rural United States," *Technology and Culture* 37 (1996), 6763-95.

[105] Stephen Chen and Robert Payne, *Sun Yat-Sen: A Portrait* (New York: John Day Co, 1946), 1-102.

[106] Sun Yat Sen, *Memoirs of a Chinese Revolutionary: A Programme of National Reconstruction of China* (London, Hutchinson & Co, 1918), 5-15, 73-119, 117; Leonard Shihlien Hsu, ed. *Sun Yat Sen: His Political and Social Ideals* (LA: University of Souther California Press, 1933), 230-1. The ideology was generally referred to as 'Sun Wen Hsueh She' (The Philosophy of Sun Wen).

[107] By 1900, only 100 students had enrolled in the college at Hong Kong, and of these, the great majority went to the mainland to establish medical careers rather than scientific research. The low numbers was not unusual; a medical college in Peking had only 16 graduates by 1911. Only 300 students in all of China had graduated from Western medical schools by 1897. Given the few number of medical doctors per patient, it might be argued that the demographic pressure itself hindered the acquisition of potential medical researchers. (Too high of a demand, and hence value, of a practicing physician who could treat patients; 'medicine' as a 'practice' and a 'science' competed with each other) Similar demographic forces had also pushed Manson into China, and consequently back into England. If we consider that he would have faced more competition in the colonies with overcrowding of colonial medicine in 1880, it was also easier for him to return to England where his specialized knowledge immediately raised his status

above physicians without it. Bowers, 21, 7; Douglas Melvin Haynes, "Social Status and Imperial Service: Tropical Medicine and the British Medical Profession in the Nineteenth Century," in Arnold., 208-226; Hakin Mohammed Said, *Medicine in China* (Karachi: Hamdard Academy, 1981), 169-173.

[108] Worboys, passim. Consult biography.

[109] James Cantlie, *Sun Yat Sen and the Awakening of China* (London: Fleming H Revell Co, 1912), 196.

[110] David Lampton, *The Politics of Medicine in China: The Policy Process, 1949-1977* (Boulder, CO: Westview Press, 1977), 7-8; Ralph C. Crozier, "Traditional Medicine in Modern China: Social, Poltical and Cultural Aspects," in Guenter B. Risse, ed. *Modern China and Traditional Chinese Medicine* (Springfield, Ill: Charles C Thomas, 1973), 38; Cantlie., 192. Crozier shows that there was a consistently strong anti-progressive reaction after the May Fourth Movement in 1919 that would have to be changed in order for China to modernize. In 1920's even those who wanted to acquire western science also wanted to retain the best of their traditions.

[111] Starr., Introduction; Frank Farmer, "World Bank Experience in Education in China, 1980-1984," in Bowers, et al., 1988, 233-4; Needham, 256-263; Ilza Veith, "Traditional Chinese Medicine: a historical review," in Risse., 13-29. Chhio believed that relying only on the pulse as a method of analysis was "no better than viewing the sky through a thin tube or considering paintings by looking through a narrow crack." Needham, 261. There were some elites who had received Western training, but they seem to have been too few in number to have had much of an impact on the general body of Chinese belief. The Hong Kong Medical College had been funded by Ho Kai, who had studied medicine in England. Bowers, 1972, 21.

[112] see Adas, 1989; Daniel J. Boorstin, *The Discoverers: A History of Man's Search to Know his World and Himself*. (New York: Vintage Books, 1985).

[113] Langer, 386; Giles; 113-135; Joseph R. Levenson *Confucian China and its Modern Fate,* vol. 1, "The Problem of Intellectual Continuity" (Berkeley: University of California Press, 1958), 52-3. See also D. W. Y. Kwok, *Scientism in Chinese Thought, 1900-1950*. (New Haven: Yale University Press, 1965). It is important to note the differences between changes in the general society versus those of the elite. While some members of this community sought change from

an early period (i.e. a few of the Chinese elite), most generally did not until the twentieth century. Curiously, there seem to be no books at all about this sort of scientific change in Spain (the problem of cultural transfer alluded to in earlier footnote), partly because Spain is generally considered 'European', but from a medico-scientific point of view, shared much more epistemologically with the Chinese than the French.

[114] Manson-Bahr, 1927, 93-4.

8

The Relative Absence of Racism in U.S. Colonial Policy towards Cuba, 1898-1902

It is not the incidents of life that are significant…it is the tendencies of life that we are to regard. How sets the current? Are we moving toward the goal of high ideals? Are we sinking back from them? That is the important question. The play of the waves tells little.

—Elihu Root

> At a ball given to various American authorities by the native residents of a provincial capital, an American officer stopped the band after it began a dance at the direction of the Filipino who was master of ceremonies, and ordered it to start a two-step. When interrogated, he announced that the military were in command of that town, thus insulting the Filipino who had charge of affairs…. This and the other instances do not, of course, reveal a prejudice grounded chiefly on color, yet this is the chief factor.[1]

Although this incident does not involve Cubans, it is indicative of some of the racial problems that existed between Americans and those from their newly acquired colonies at the turn of the century. The Spanish American War placed under American control territories outside the contiguous region of the continental United States and, similarly, groups of individuals outside the racial borders of the Anglo-Saxon world. Many Cubans and "Porto Ricans" were of African descent, and those from the Philippines, Hawaii, Samoa, Guam and other Pacific islands marked Asian phenotypes. Unlike the North American Indians, they could not be cast aside into convenient and isolated Indian reservations given that they were the central populations of these island regions. Culturally they were also mixed groups constituted principally of the African diaspora in the Caribbean and Asian traits in the Pacific.

How did U.S. Anglo-Saxon communities perceive these groups in their 'forced' interaction? Did racism come to affect the U.S. policy towards the territories? This essay will seek answers to these questions with respect to Cuba. Although a number of authors point to the racism which existed in this exchange, the charge is always made with respect to suffrage and civil appointments in the Cuban political landscape. More substantive questions, such as whether the Platt Amendment was inherently racist, are never raised.[2] This essay seeks to comprehensively analyze the charges made of U.S. racist attitudes, as well as to study whether such charges are applicable at the foundations which established U.S.-Cuban political relations for the next half century. A wide variety of sources have been used, from newspaper and magazine accounts to Congressional hearings and personal letters. Although specifically focusing on Cuba, it will also look at descriptions of other territories to peer into the character of the North American mind. Was racism the determining propensity of America's public and policy?

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Cuba, like the Philippines, was affected by racism. "Repeatedly I have seen apparently intelligent officers of our army and navy turn in disgust from a body of black Cuban soldiers—soldier whom the eye could not distinguish from our own negro troops if similarly dressed—and observe: 'So these ragged, half-starved niggers are what we are fighting for!'"[3] Incidents like these are used by a number of scholars to show racism on behalf of North Americans. Pérez cites it in a number of his works. Foner cites another similar incident, in which U.S. Army officers and soldiers told Cubans that their island would be a "white man's country" and that bullfighting would be replaced by the "American pastime of nigger lynching." Helg concludes that "North American tended to extend their racial prejudice to all Cubans, including the whites of the 'better class'," and that U.S. government officials also drew "on Cuba's deeply rooted patterns of racial differentiation."[4]

Closer inspection reveals that one should not overgeneralize statements of American soldiers to that of all North Americans. There were reasons for such racist comments, but more often than not, they arose out of non-racist contexts. Marriot, from whom the first comment was taken, explains that soldiers were under particular constraints and pressures and thus tended to act out of context. One of the most serious grievances against many Afro-Cubans was that the stealing of blanket rolls at the front lines, which more often than not tipped the delicate scales of life over to death. Another factor was that many who had gone to

battle thought that it would be a 'pleasure excursion' and often expected the 'other fellow' to be affected by suffering while excluding himself. Psychologically they were unprepared for the realities of war. Marriott also explains that it was a 'notorious historical fact' that soldiers quarreled with the armies they were replacing; French soldiers had made similar comments about American revolutionaries. Such insults were typically human given the circumstances.[5]

This is not to say, Marriot emphasized, that such accusations were valid. Implicitly acknowledging that explanations are not necessarily justifications, he portrays a very sympathetic view of the plight of the struggling Cuban. His comments suggest that Pérez's historical depiction that American views changed after the discovery of a straggled Cuban army looked like are unfounded. What could be said of the American soldier applied to the Cuban soldier as well; both groups were being misjudged.

> As an abstract proposition, no one will maintain that men who have been hunted like wild beasts, without food, without clothing, without family for three long years, should be judged as are other men. Yet this has been done, and not only this. The rebels have also been held to account for the condition to which they have been reduced by the Spanish, as if they themselves were responsible for this.[6]

Thus it should be noted that the North American reporters who are describing attitudes of the U.S. military are at the same time seeking a fair understanding, not only of the Cubans involved, but of the Americans as well.

A number of other authors who also describe racist attacks, such as James Le Roy who described the Filipino band incident, also go quite a ways to explain both sides of the story, and in the process are being as fair as possible.[7] Filipinos were affected by a static social structure which did not reward effort, traditional medieval ideas inculcated by Catholic educational institutions, and did not abide by the same American values of comfort and convenience. Contrary to popular belief, Filipinos were not imitative but rather original and mathematically critical. Hence, any fair judgements would have to await a reformation of their social and educational structures. "In fact, real acquaintance with Filipinos and frank exchange of sentiments will correct various preconceived notions."[8]

As in Mariott's article, Le Roy explains that American officers in the Philippines had particular motivations for being racist. While they sought to bravely fight in the open, the Filipinos resorted to hidden guerilla tactics and secret assassinations. Racist comments had grown in the last two years, 1900-1902, with the increased use of such tactics by the Filipinos. "[O]ur troops had to contend with

ambushes and a foe who was an excellent masquerader." That the military leaders were far away from the United States lent to a reduced governmental oversight and a more difficult transition to civilian control. One curious aspect of Filipino-American relations was the predominance of small time business rouges who would have been entirely discredited in the United States. Unfortunately, because of the distance, they had found much influence in the Filipino community by posing themselves as American representatives and through their newspapers.[9] Social controls that would have curbed these tendencies in the U.S. did not exist abroad.

A survey of descriptions of Cubans and Puerto Ricans in the popular media—newspapers and magazines such as *The New York Times, The Nation, The Outlook, The Atlantic Monthly*, and others—portray a very different understanding of colonial peoples from that depicted in many secondary sources. Despite the fact that both these groups had strong African genetic strains in their demographic make-up, their skin color did not seem to shade Anglo-Saxon descriptions. It was not a 'projection of U.S. racism' that we find as some scholars suggest, but rather an audience surprised at the different race relations which existed in the two regions. One of the implications is that the concept of more favorable race-relations in Latin America did not just arise with Tanenbaum, Freire and other authors in the post World War II period, but rather that it was an observation long preceding them.

Dorothy Stanhope, writing "The Negro Race in Cuba" for *The New York Times* in 1900, was rather surprised to find amicable race relations in the island relative to those of the United States. In contrast to the South where "the [Negro] race knows its place and keeps it; [and] there is no attempt at familiarity with white persons", the experience of Havana was the exact opposite.

> Imagine the surprise awaiting one used to this condition of affairs when he reaches Cuba, where the social conditions are so different. In their own estimation, Cuban negroes are every whit the equal of persons of fairer skin, and it is not unusual to find that they consider themselves superior, though why is not exactly clear. If it were suggested to one of them that his race was in any way inferior to the Caucasian he would scoff at the idea. I have yet to see one who acts toward a white person in a manner showing any social inequality.[10]

Stanhope describes the many differences she observed in Havana from its Southern U.S. counterpart. Black children freely played with white children, and often did better than whites at school. Both races lived alongside one another, and rarely was there a house to be found without both. There were no districts set

aside for blacks. Tenement houses had an equal distribution of races. Intermarriages were very common, except in the highest classes. She even describes the curious wedding of a very beautiful white-but-poor woman to a very wealthy Cuban Negro who was "black as night." Maceo was highly regarded by all Cubans, regardless of their color. No regiment had been divided by color as one found in the U.S. South; they consisted of 'mixed colors'. The use of the race word was different as well. "Negroes are never spoken of as such here, although there is a Spanish word almost identical with the English one [i.e. morenos]."[11]

What is striking throughout the article was the unusual experience of expecting certain behaviors and cultures from the black race, but experiencing something entirely different. "Some of the older ones look so much like the old 'mammies' and 'uncles' of our own South that when they speak one expects to hear the darky dialect, so familiar to the childhood of every Southerner, and it is a real disappointment to hear a strange language spoken, even if that language is the musical Spanish."[12] Stanhope is clearly either from the U.S. South or has lived there quite a long time. However, rather than project her southern racism to the Cuban Negro, she uses the Cuban experience to elucidate her Southern viewpoint. Race relations and Negro self-identity need not be the way they have been; the Cuban experience taught that society could be something other than what it was.

It is interesting to point out that Stanhope's depiction of a racially mixed group with a low degree of racism in Cuba relative to that found in the United States is not unique to her and were found in a number of other sources. James Wilson, military governor of Matanzas during the Brooke Administration, mentions in his report that Trinidad in Cuba was the only city which maintained separate schools for the different races, and also the only city which displayed racism in the sphere of business. The rest of Cuba was different. "At all events, perfect peace and tranquility prevail between all classes, colors and races, and there is no apparent reason to fear that this is not a stable condition of the people…. Race antagonism does not seem to have made its appearance to any great extent; indeed…it has not shown itself in any public business except at Trinidad."[13] Even Leonard Wood in his 1902 report writes the same, "Race distinctions as affecting the relations between African people and the other inhabitants of Cuba have not been sufficiently pronounced to give rise to any discussion; in fact there has been almost an absence of any indication of race feeling."[14] Oliver H. Platt, who submitted the now infamous amendment, wrote that

> There is not yet a race issue in Cuban politics. Where there will be, time only can determine. Prejudice on account of color is either less than in the United States or of a different quality. Certainly neither blacks nor mixed bloods are regarded as inferiors to the same extent as with us, and in the matter of social distinction color plays but a comparatively unimportant part. White and colored laborers work side by side without friction or contention……Universal suffrage was adopted in the proposed constitution without a suggestion and presumably without a thought that a colored man was not as much entitled to be a voter as a white man.[15]

It is perhaps a bit ironic that through the eyes of people whom are supposed to be racist, we encounter a 'non-racist' picture of Cuban society—a picture contrary to the racist characterization found in Helg's work.[16] Yet it is precisely because North American observers came from a society where racism and the ravages of the Civil War still existed that they shed a more nuanced view of the Cuban society, which is perhaps being used as a representative of Latin America. Only from a different standpoint could one assess the uniqueness of another's standpoint more accurately; the differences stand out in greater contrast to the viewer. Hence, common to these North American observers is the comparison between two similar communities (Cuba and the U.S. South) with a large predominance of Negro populations, yet with sharp differences in their racial attitudes—not only of white toward blacks but of blacks towards themselves. Blacks saw themselves as the equals to whites, were very successful in the relatively minute educational sector, and had been leaders idealized by both racial communities.

Yet despite the fact that many writers came from a 'racist' society, their descriptions of the colonial peoples was seldom colored by racism as is currently charged in the secondary literature. Quite the contrary. A large number of them showed much sympathy toward the plight of the Cuban and often went quite a ways to defend the Cuban from what were sometime real and sometime illusory American injustices. Certainly it could be said that there was some amount of prejudice in such writers, but is was a bias against culture rather than race. Observing the remnant taint of Spanish culture in their old colonies, American observers were highly critical of the negative aspects of this culture. The lack of a pragmatic emphasis, 'materialist' approach (in a scientific sense), and trustworthy information exchange was bitterly reproached by American observers, and they are probably correct in their assessment that such attitudes played in the inefficacy of Spanish colonial society. Again, it is important to note that such criticisms are not racially based but are rather cultural criticisms. In other words, the

flaws of the hispanic Caribbean society were not attributed primarily to inherent biological flaws but rather to inefficient values and behaviors. Another important component to these critiques was that the social structure engendered such values and attitudes, which in turn reinforced these social structures. Unjust governments created untrustworthy attitudes and values.[17] This intimate relationship between the social structure and the cultural framework probably underlies the valid fear many North Americans had that the incorporation of islands such as the Philippines would itself affect the character of the North American civilization.[18] It is curious to point out that while this fear dealt specifically with the Philippines, seldom were concerns raised with respect to the incorporation and assimilation of the other islands. One problem with these cultural critiques, however, was the failure to understand the positive aspects of Spanish-Catholic civilization. If there was misunderstanding, it occurred at the cultural rather than the racial arena.

In a number articles entitled "Cuban Character" in the journal *The Outlook* which described Cuban vices and virtues, vices are never attributed to the 'racial stock' of such communities but rather to their cultural inheritance. George Kennan did not like Cubans, a bias he acknowledges at the beginning of his own essay, but has some rather interesting observations and criticisms that shed much light on the Cuban mind and culture of the time.[19] Unlike so many Anglo-Saxon Americans, Cubans did not drink to get drunk but rather as a complement to social interaction. They were highly patriotic, and very kind and indulgent toward their children.[20] Yet they had a number of vices, the worst of which was probably their untrustworthiness—a habit that displayed itself across all sectors of society, from interpreters, shopkeepers, and petty clerks to professionals such as lawyers and physicians. Kennan had started a list of Cuban physicians who issued false health certificates, but the list became so long, that he changed it to those "few" he thought he "could" trust.[21] Cubans also lacked a materialist view of the world, materialism defined not as financial egoism but rather as a concern for the tangible-scientific aspects of reality. For example, the axle of a cart would not be placed in the middle but rather at the far end of the cart, thus overburdening the animal pulling it with the load's weight. Similarly, the leash used on the underside of a horse was made of a thin strip of cotton instead of a leather belt; with sweat and rain, the strip would turn into a rope and act as a saw, cutting into the horse's belly. Cubans were generally not observers of nature. They were indifferent to it as noted by the fact that while they had some knowledge of useful plants, there were no names for nonuseful ones.[22] In other words, they were unscientific.

Yet despite these and many other criticisms shared by him and other writers of Cuban life (both black and white), they do not attribute such flaws to race, but rather to the Spanish culture and Cuban social structure.[23] Kennan cites Wood's address before the trustees of the Cuban Orphan Fund, and uses Wood's conclusion for his own. "We have got to remember, gentlemen, that we are dealing with a people who, for a good many generations, have had very little voice in public affairs, and their whole disposition has been perverted by a system which has compelled deceit, dishonesty, and subterfuge in every department of life."[24] Although Kennan certainly refers to the Cubans as its own distinct race, this concept does not pervade and define his understanding of them—a feature common to many other writers of the period.

It is interesting to point out that Kennan and other writers also referred to the Spanish as a 'race'.[25] This is curious given that the Spanish are generally portrayed as white in much of the secondary literature and thus implicitly of the same 'race' as Americans.[26] Certainly, from our point of view, the North Americans and the Spanish would be considered as generally belonging to the same race as defined by skin color and other superficial bodily features. That so many North American writers of the time refer to the Spanish as a 'race' distinct from themselves suggests that the word is not being used to connote anatomical differences but rather cultural ones. This in turn implies that there were broader conceptual changes occurring in the underlying American conception of man. Nonetheless, what is of immediate relevance to this essay is that the modern reader of turn of the century literature should not mistake the usage of the term 'race' as indicative solely of physiognomic differences, but should also interpret the word as suggestive of distinct cultural groups.

Many other writers portrayed very favorable views of Afro-Cubans and Afro-Puerto Ricans and sought to dispel certain myths. Although Nichols agreed with the untrustworthy character of the Cubans and did find many aspects of Cuban culture and mentality to criticize, he sought to dispel certain other myths. "The two most glaring national sins with which Spaniards have always charged the Cubans are lying and laziness…but a more intimate intercourse with the Cuban in the country, where he is at his best, will disprove it."[27] When an issue did not appeal to their self-interest, Cubans were usually honest. They were also very hard working; most Jamaicans accused Cubans for taking over the sugar industry from laboriousness. More importantly, the countryside Cuban (who more than likely was of African descent) was a very generous person.

> No matter how poor and wretched a Cuban countryman may be, he never seem to think he is doing anything in the slightest way creditable in sharing with a hungry stranger his last measure of coffee or his last piece of bread. He does it as a matter of course, because he has yet to find one of his countrymen who wouldn't do as much for him. I have never yet seen a single Cuban in the country, of any class, who would not offer you something to eat if you happened to be in his house about mealtime, or who would not feel highly insulted if you offered him money for the last bit of food he had in the world.[28]

There were similar favorable descriptions of Puerto Ricans as well. Dr. Geo G. Groff had been on the island for about two years, and, like Kennan, Nichols and others, viewed the natives as a distinct race but in highly favorable terms. They were patriotic (like Cubans), much kindness and affection filled family life. As Stanhope, Groff contrasted life in the island to life in the U.S. "The bond of blood extends to the most distant relatives, who, if poor are assisted and even made members of the family, beyond what is common in the States." They were also honest; although he had left rooms and trunks unlocked during his entire stay, "[he] has yet to miss the first article, large or small." Although the island was overpopulated, they did not tend to emigrate. Like Kennan, he had never seen a drunk native, believed them to be industrious, and "[w]ith a stranger they will share all they have."[29] This is not to say that there were no cultural failings. They worked only to spend money and did not secure it for old age. They were indifferent to the suffering of others, something difficult for most Americans to comprehend. Mechanical ingenuity was wanting. But they were bright and industrial schools in the island should overcome such defects.

Mark Harrington had lived in Puerto Rico for six months, and wrote an essay on the "Porto Ricans" for *Catholic World*. Like Stanhope, Harrington also found to his surprise a society with a relatively low degree of racism.

> The Africans or descendants of slaves imported chiefly from Guiana…mix freely with all. They are often very bright, ambitious, and self-educating. They form the poorest and most indigent class on the island, but they are coming ahead both in numbers and education…they have very generally the idea that the blacks have not been well treated in the States.[30]

We learn that not only was there little amount of racism in the island, but a full awareness of racism in the United States and what it precisely entailed for the oppressed was only vaguely known. The tone of the piece is informative and is not plagued by any strong racial emotionalism.

Such generally was the tone of the various articles of the period describing the character of the new colonials to the American republic. That these new colonials were 'different' certainly was the case. But it can be generally said that this difference was not situated and explained on the basis of innate biological inferiorities—on weaknesses of the native brain for example—but rather on their social circumstances. The plight of Cubans, who had been through half a century of war and calamity was seen in a sympathetic light. The same was true of Puerto Ricans who, although not affected by man-made disasters, had certainly been affected by natural ones such as 'anemia' and a disastrous 1899 hurricane. Of all colonials, including the Philippinos, weaknesses were generally explained against the backdrop of Spanish colonialism; any such weaknesses and 'inferiorities' were circumstancial and contingent. The new colonials were not to be held responsible but rather accountability rested on the oppressive educational and political structures originating in colonial Madrid. Social changes brought about by the U.S. civilizing mission would help bring to these new levels of prosperity.

When race was a significant factor in such descriptions, it was used as a contrast to rather than as an example of Southern racism. Rather than project racism onto new groups, these new groups elucidated the contingent nature of Southern lifestyles. Multiracial communities need not be divided by a color line.

Yet, one may ask, did the attitudes of journalists and writers also extended themselves to colonial administrators?

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As might be obvious by now, we don't need to turn to secret tapes, classified reports, or personal letters to find out what men thought about race at turn of the century America. That public office holders are to be held accountable for their actions to the people they lead means that there is a continual process of personal justification and explanation in the American political system. Unlike the decision-making of nineteenth century Spain, Cuba, or Puerto Rico, the debates were held wide open not only in the public media, but in public governmental records as Senate Hearings and House investigations. They were available to any who chose to ask for them. Office holders openly and candidly explained what they did and why they did it in this process of public accountability. As such they were criticized by both 'liberal' and 'conservatives' of the time. That power relations could not be threatened or affected by publicly expressed racist beliefs, unlike today, did not prevent these beliefs from emerging into the public limelight. Thus, we need not strain our mental cunning to look for personal biases or

debates that are continually spread throughout the social panorama before our eyes.

Helg argues that United States administrators were purposefully guided by racism. White upper-class Cubans were placed in positions of power because U.S. officials used suffrage laws to prevent lower class Afro-Cubans from voting (and hence members of their race from positions of leadership). It was racially motivated. Only white upper class Cubans were put into positions of power because they were favored visa vie African descendents on the basis of their skin color. U.S. officials manipulated the law for their own purposes. "The law aimed at disenfranchising Afro-Cuban in particular."[31]

> In sum, although most U.S. policies targeted all Cubans, *many openly discriminated against Afro-Cubans and penalized them*. Moreover, the United States administration deliberately excluded Afro-Cubans from positions of power at a crucial moment of Cuban history, just when the latter could have claimed their rightful share in the nation's government on the basis of their leading role in the War for Independence."[32]

It should be pointed out that Helg, despite her strong claims, relies on very few U.S. primary sources (or secondary) for her chapter. She relies mainly on Cuban newspapers, and on a number of Cuban or Cuban-American secondary works such as Pérez's *Cuba between Empires*. A more balanced gathering of sources would have yielded different conclusions.

Leonard Wood, before the Senate Committee on Military Affairs (Dodge Commission) inquiring into military conduct during his rule as military governor in Cuba, gave the following testimony:[33]

> Senator WARREN: Speaking of Cubans, what are we to understand by Cubans—those born in the island but of Spanish parentage—distinguishing the Cubans from the blacks?
>
> General WOOD: I mean by Cubans those of Spanish descent who have been there for several generations and also the mixed races.
>
> Senator WARREN: Do they represent a line of pure blood and breeding?
>
> General WOOD: No; they have become more bronzed and are darker than the Spaniards…
>
> [There is a continual clarification who whom exactly Wood is referring to by 'Cuban'.]
>
> Senator PROCTOR: When you speak of Cubans you speak of those of Spanish blood?

> General Wood: I mean everybody born in Cuba, speaking generally. *I have appointed a good many of those negroes to office because they represent so large a portion of the population*.

Wood is testifying as governor of Santiago and prior to the enactment of the suffrage bill that had been agreed by him and Root at a later date. Given the needs of the circumstances in that there was just no time to enact a suffrage law, Wood explains how he had to come to a quick decision. His immediate reaction was not to give power only to the whites, but rather to those who represented the majority of Cubans: Negroes. Democratic ideals, not racial prejudice, was his gut reaction.

It is incorrect to claim that Wood, who was the key government official as military governor for the entire island during most of this period (1899-1902), was either racially motivated against Afro-Cubans (in a negative sense) or that he gave preferences to upper class whites (positive sense)—either Cuban or American. Had Wood truly been racist, it seems that he would not have traveled as extensively throughout the island meeting as many people as he did, something for which he was notorious. One of the well-known characteristics of his leadership was its sheer dynamism; Wood wanted to see and study everything for himself. Looking into the details of Cuban affairs, he continually encountered Afro-Cubans in their civil affairs. A hint of his relation to all Cubans is perhaps revealed by their reaction at a banquet in his honor. As he rose to speak, cheers echoed throughout the hall and outside of it. The crowd outside the building was three thousand or more. An American reporter wrote, "whatever feelings the Cubans may have toward the United States…toward Leonard Wood personally their respect and affection are in no wise diminished."[34]

In a dispute with two Cubans who wanted to start a political paper, Wood denies the request given the Cuban tendency for misrepresentation. "Santiago is at present as much for the Cubans as for the resident Spaniards, and as much for the Spaniards as for the Cubans. *I shall see that every man has his rights and enjoys his liberties, be he black or white, or whatever his nationality*." One of the reasons why Wood is so concerned about Spanish rights was the fear with respect to the transition of power from one nation to the other; it was feared that many would take active and brutal revenge on the Spanish. Such a newspaper would have fueled this anti-Spanish sentiment and perhaps led to mob attacks. It is curious to point out, however, that Wood seems to be using 'race' not as a denominator of skin color but more as one of nationality and cultural heritage—an example also followed by his biographer.[35] Hagedorn portrays Wood in a non-racist manner,

"he treated the local leaders—black or white (most of them somewhat of each)—with the courteous formality which he knew they cherished, as co-workers whom he liked and trusted."[36]

To claim that Wood sided with white Cubans or Americans is a misrepresentation. When Cuban businessmen had greatly raised the price on food items, despite the fact that they had received new supplies, and important goods such as kerosene used to burn the great number of unburied corpses, Wood called him into his office and accused them of essentially being murderers. If they did not lower their prices immediately, he would have revoked their licenses and close their shops. When Wood rose to become military governor of the entire island, he did not immediately choose his own cabinet but rather 'inherited' his from the previous military governor, Gen. Brooke. However, while Brooke held a loose hand over his cabinet and had not prosecuted members of his staff for graft and corruption, Wood did. After arresting ten appraisers from the custom house for fraud, the entire Cuban cabinet resigned. Also, Wood and many of his American assistants were not afraid to force white Cubans to dispose harmful and unsanitary materials from their home, even if physical coercion was necessary.[37]

There are two well-known incidents where Wood either prosecuted governmental misconduct or opposed U.S. corporate abuses. The postal services were run independently of the military governor's scrutiny, and Rathorne had used his power to amass a rather large fortune. When asked about the discrepancies, he would give vague financial statements. Needless to say that he also had the support of a prominent Congressman, Mark Hanna. Root, who was on close terms with Wood, finally told Wood to "dig to the bone." Rathorne, Needy, and others, despite some Congressional opposition, were prosecuted and arrested. In the Michael Dady case, a U.S. construction company had asked for outrageous sums for a sewage contract. Wood estimated the cost of the plans to be $58,000, as opposed to Dady's $780,000. Ironically, the Cuban City Council had sided with Dady, but in the end, Wood was able to reduce the fee to $250,000.[38] There is perhaps ample reason for the Cuban praise of Leonard Wood.

It might be counter-argued that Wood was not a policy-maker but was rather an administrator of laws that were established elsewhere. Yet this picture would not be an entirely accurate characterization of the distribution of power. It should be reminded that soon after the U.S. takeover, Cuba was in a state of chaos for a time, no policies could be formed given the exigencies of war. Also, the exact relation between the United States and Cuba had not been formalized, and thus Congress, until the establishment of the Platt amendment, had no real direct control over Cuban affairs. This power rested with the military, in particular

under its head—Elihu Root, the Secretary of War (and a member of the President's Cabinet). During this period Root was dealing with a vast number of affairs, including the reorganization of the military itself. Although Wood was under Root's command, he greatly influenced Root's decision-making. Wood, however, was acutely aware of his seemingly absolute powers over the island, and at the same time, the irony of trying to establish a democratic government. Wood, as Brooke before him, had been given no set of formal instructions by McKinley other than to "get the people ready for a republican government."[39] One of the reasons for his promotion to military governor was the effective initiative, analysis, and manner in which he conducted himself, despite his very limited administrative experience. Wood's rule was essentially his own.[40]

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The Platt Amendment, which defined and affected U.S.—Cuban relations for half a century after the formal departure of the U.S. military, is now generally regarded with infamy. It was used to justify U.S. military intervention in 1906, 1912, and 1917 and for political intermeddling in the consequent two decades.[41] Trade reciprocity, a policy which was formed in the same helpful spirit as the Platt, led to a significant 'take-over' of U.S. companies over the Cuban economy; 93% of railroad interests were controlled by foreign interests, about equally divided between American and British companies. While Spanish banks lent about $26 million, U.S. banks lent $201 million. Ownership or control of sugar production by U.S. interests grew throughout the period reaching between 50 to 60% of total production in 1930.[42] Philander Knox, who might be characterized as the functional successor to Root in the formation of U.S. policy towards the island, redefined the spirit in which the Platt was intended. Rather than use this power under the circumstances of clear and present danger as Root had, Knox used it to justify a very wide degree of actions whenever there was any perceived threat.[43] Unfortunately, rather than rebuilding Cuba by Cubans for Cubans as was originally intended, Root's policies helped give it away.

Yet this was by no means Root's intention. International threats, not domestic ones, were the predominating concerns in his mind.[44] While certainly there was the attempt to establish an American political system and public spirit in Cuba, the main fear was in preventing the intrusion of other nations which did not share this spirit. The world of international politics toward the end of the nineteenth century truly was a jungle. European nations were carving out pieces of Africa without any concern whatsoever for the Africans. Their injustices form the

core of historical narrative and judgment. These colonial abuses were allowed by new technologies such as quinine and metal steamships which opened up territories that had previously been inaccessible to what were the true imperialists. In India, the British replaced the top rulers as the Spanish had previously in the Inca empire. The belt of European imperialism spread throughout the tropical world and threatened the warm waters of the Caribbean. In Haiti, for example, the Germans sent warships, threatened to blow up government buildings, and received $30,000 because a German citizen in the island had been arrested by the authorities for a debt of fifty dollars.[45] That Root should have sought assurances that Cuba be free of debt and that she would not oppose U.S. protection, as the Platt Amendment did, was a more than reasonable stance in this context. Given what we know about Germany's expansionary activities during the first half of our century, Root was more than justified in his concern.[46]

To then argue, or even suggest, that racism was the predominating concern affecting U.S. policymakers such as Root is to make a banal argument.[47] Such a suggestion might even said to be highly disrespectful and offensive.[48]

Nonetheless, if racism was supposed to inform American judgement, and in the process to so stain and define its behavior, it is a curious fact that it was never a significant factor in public debates either for or against U.S. policies. It played a very minor role. Albert G. Robinson, who criticized the suffrage laws in his "Cuban Cause of Offense" never makes any claim whatsoever as to racist motivations. Neither R. Olney who defended Platt in *The Atlantic Monthly* nor R. Ogden who attacked the amendment and other U.S. policies in his articles for *The Nation* ever mention the issue of racism. Mathew Hanna, who defended his education policies in Cuba, never raises the issue.[49] Even J. E. Stevens, who believed that the Philippine Negritos were wholly "unfit for self-government" and almost "incapable of civilization" bases his argument not on their race, but rather on "their universal lack of education…in itself a difficulty that cannot be speedily overcome."[50] What today would be considered "liberal" and "conservative" writers of the time do not appeal to race in their arguments dealing with U.S. policies. This is not to say that race was not a factor in turn of the century 'liberalism'; there certainly were many critiques in regard to disenfranchisement in the U.S. South.

It is perhaps one of the strangest ironies of history that ex-plantation-owning/slave-holding Southern Congressmen brought forth perhaps the most cogent and moving criticisms defending Afro-Cubans against the Platt Amendment. In other words, Southerners, rather than having (what one would expect) a negative effect by trying to curb Cuban self-determination, actually tried to enhance their sover-

eignty. Mr. Richardson of Tennessee said that Republicans were "now proposing to place upon 10,000 subjects of America…a slavery more galling, if possible, than was ever known in our history." Mr. De Armond of Missouri proclaimed, "Ah, weak, ignoble House. Ah mean and contemptible tyranny—abject evidence of abject slavery!" Mr. Jones of Virginia said that the amendment's points were "inconsistent with the full and complete enjoyment by the people of Cuba of sovereign rights which we are in honor bound to respect." Of the manner in which it was being done, Mr. Cochran of Missouri forcefully commented that, "We have no right to suspend over the heads of the delegates to the Havana convention as a menace the sword of a dictator."[51] Mr. Dinsmore of Arkansas slashes his own sword at the Platt Amendment—

> this rule…[is] in violation of our laws, with the deliberate purpose of imposing upon the country [Cuba] an infraction of every tradition, an abandonment of every principle we have professed, an absolute reversal of our history as a nation…and for what? From the motives of greed and lust of power alone![52]

Has the world gone mad? Racist Southerners fighting for the liberty of Cuban blacks and whites, whom they thought to really be Negros, according to Helg?

While close and careful inspection will reveal this to be the case, the story is more complicated than it appears to be. Southerners had not, from one day to the next, become any less racist than they had previously been; unfortunately (and fortunately), cultural patterns tend to be rather stable. They do, curiously, reveal the same pattern as all other previous writers. That is to say that appeals to race were seldom used in their arguments against the Platt Amendment. Congressional attacks by Southern Democrats were more based upon American democratic traditions and previous public claims with respect to American intentions.

The 'crux' of the matter is that these Southerners believed they were defending white Cubans. Congressman Sparkman, of Florida, refers to the fact that most of them were white, 67% to be exact. "The Cubans, or those of them belonging to the white race, are the descendants of a proud and once powerful people [Anglo-Saxon and Southern whites?] who…have fallen into adversity…."

Who are the Cubans? Are they, as a whole, predominantly 'black' or 'white'? There is obviously much contradictory evidence. Stanhope, Wood and a wide variety of other sources claim that a majority of them are black. Wood, in his testimony before the Dodge Commission gives figures that are exactly the opposite of those of the 1899 census![53]

> Senator PROTCTOR: What is the population of Santiago, as to race and color?
>
> General WOOD: The best reports put the blacks at between 60 and 65 per cent and the whites between 35 and 40 percent.
>
> Senator PROCTOR: That is, the city of Santiago?
>
> General WOOD: No; in the whole province.
>
> Senator PROCTOR: There are more blacks than whites?
>
> General WOOD: Yes.
>
> Senator PROCTOR: But [is that]…not true of the whole of Cuba?
>
> General WOOD: [Yes,] This is the black belt.

Who are we to believe? Helg, whose book specifically deals with issues of race, and whose arguments fundamentally hinge on such issues, casually relies upon the 1899 census.[54] Yet closer scrutiny of this census immediately reveals its bias. A clue lies in Foner, who mentions that 97% of the officials working under the Brooke administration were Cuban.[55] A well known aspect of Brooke's administration is that he let the Cubans do too much of the leading. Even the census of 1900 reveals its biases. Although North American General Joseph P. Sanger was in charge of the project, directly under him was the assistance of 6 Cuban supervisors.[56]

We may legitimately conclude that the 1899 and 1900 Censuses were 'wrong' in revealing the true racial make-up, as would be defined in North American communities, of the Cuban society. That most of these surveys were conducted by Cubans (i.e. Latin Americans) means that the 'one-drop' rule would not have applied. Such officials would have marked many an 'Afro-Cuban' as white that would have otherwise fallen under a 'black' category using Anglo-Saxon standards—whether by purposeful design to favorably deceive unfavorable U.S. policy makers and Congressmen, or unconsciously by the different racial definitions in their implicit worldview. Most individuals at the turn-of-the-century Cuba were not white. The more likely probability is that there was a larger percentage of 'mulattos' (mixed blood) than is generally recognized, and hence a greater percentage of "Afro-Cubans" in the island (within American perceptual norms of race).

Due to these 'historical accidents', racist-white Southern Democrats and radical-anti-U.S.—Afro-Cuban militants ended up in the same 'camp' fighting for the same goals: opposition to the Platt Amendment.[57]

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Regardless of the rather odd conflict of motivations and sources of information, Southern members of the 56th Congress on March 1, 1901 could do nothing to alter the turn of events. As is very common in American political history, the amendment was quickly rushed through the House in an army appropriations bill. For however much they complained of the bill and of the manner in which it was passed, Southern Democrats were helplessly unable to do anything about it—an experience shared by many Cubans and other colonial populations. Events were beyond their control.

The question that still remains to be answered is whether the Platt Amendment was racially skewed. Despite his defense of the amendment, it is currently well-recognized that Oliver H. Platt did not dictate the crucial features of the bill.[58] While he certainly proposed it, it was not his invention. An analysis of his articles do not reveal 'racist' leanings, but rather the general tenor which had been pointed out for most previous writers. That is to say that the main disputes dealt not with race, but with the principles of the amendment. "Was it constitutionally defensible? How could two contradictory stances be reconciled?" These were the main issues on Platt's mind.

When problem of 'race' comes up, it is not of with color but of culture. The problem of Cuban assimilation into U.S. political system would be hard not because the shade of their skin was black, but because they had taints of Spanish colonialism. Self-government certainly required intelligence, but Cubans were unintelligent' not because they were biologically inferior, but rather because most of them could not read.[59] "Four hundred years of Spanish oppression, misrule, an official treachery has made them suspicious…. They have no experience in self-government."[60] His "Solution of the Cuban Problem" is perhaps the complete opposite of the interpretation suggested by Helg of Serviat's "*El problema negro en Cuba*." That is to say that the problem to be resolved was not the presence of Negroes in the island, but rather the moral dilemma presented between the need to give Cubans their independence and the need to assist them in maintaining this independence. There might be another Haiti with continual political instability, but its cause was only ignorance.

> License is not true liberty. It is orderly liberty only which constitutes the sure basis of free government…. To establish such liberty there must be an intelligent understanding of the social system and a comprehension of the just prin-

> ciples upon which true government must always rest…. Where a majority of voters neither understand nor respect the true principles of government, there may be a republic in name, but in fact it will only be a dictatorship, in which the purpose and power of its president [is] control rather than the consent of the governed.[61]

The question remains, was it racially motivated? Did Elihu Root have racist motivations when he created the Platt Amendment? How could we validly answer and test such a claim?

It is difficult to say. Root never uses race in his key deliberations with regard to U.S. policy toward Cuba. Let us take the worst case scenario and test it against what is known.

Elihu Root was a smart man, a very smart man. He could see through other's intentions, and was in touch with the times, if not later in life, then certainly when he was Secretary of War. If we assume a highly cynical view of human nature and put ourselves in his shoes, Root would have made sure never to mention racism whatsoever; it would have been burned or discarded before it ever reached the public eye. In post Civil War era, where slavery had been an issue that almost divided America as it divided white and black in the South, such a mention would have been used as lever to remove Republicans from power. As we have seen, the Democrats heartily embrace of 'democracy' and constitutional principle was severely used in arguments against the Platt Amendment. That the bill rushed through Congress prevented these Southerners from using the rhetorical tool which had deprived them of their own sources of wealth and power (regardless of how ineffective and wasteful these means of production were). To have even suggested that Cubans, as Haitians, were unable to rule because they were inferiors would have overturned the moral basis of Republican power. Given the democratic nature of political positions, i.e. that power rests upon the consent of the governed, contending political players could have used these arguments to discredit their opponents. Northern Republicans would have been seen as hypocrites before the American public.[62]

Perhaps the best case, or it should be said the only case, in which to determine whether Root was racist or not was through the suffrage limitations which Helg discusses in her book. There were three fundamental basis for suffrage preceding the Constitutional Convention: 1) that a person be able to read and write, 2) that a person own property of $250 or more, and 3) that they be a veteran of the Liberation Army. One might argue, as Helg implicitly does, that these limitations purposefully struck-out Negroes given their very low literacy rates, of about 80 % as opposed to 60% for whites. The third clause, one might argue, was a shallow

and empty device that meant nothing but appeasement. In the U.S. South, similar limitations purposefully prohibited Negroes from going to the polls. The argument by implicit analogy is drawn, and the reader is left with the impression that Root and Wood purposefully sought to limit the Negro suffrage like the U.S. Southerner because of his skin color. The selection of white Cuban elite planters favorable to annexation from their own self interest at the expense of their black counterparts who usually objected to it tilted the vote to their (planters) favor. Wood and Root were able court lawyers and did an excellent job of jury selection. It was never with the U.S. Congress where passage of Platt lay in trouble, but rather it was in the Cuban Congressional Convention. By placing restrictions on Negro suffrage, Root and Wood were similarly placing restriction on all of Cuban sovereignty. Literacy requirement is thus linked to two infringements upon Afro-Cuban liberty.

What is wrong with this beautifully crafted argument? It mistakes a republic for a democracy. Although the Federalists and the anti-Federalists argued and disagreed about many important issues, one thing that they did agree upon was that of government by the masses should not be.[63] This was especially true of the Federalists who believed human nature to be essentially egoistic and who consequently established a governmental structure than not only sought to curb the effects of this egoism, but also to utilize man's self-interest to propel the ship of state. When Root sought to place limitations on blacks, he did so in the same spirit as the Federalists who feared a lack of ability in leadership would lead to political disorder. Not everyone was supposed to determine and hold power. The anti-Federalists strongly disagreed with the Federalists in that the former believed that man's nature was not innately cruel but rather malleable by education, religion, and interaction with nature. However, they too limited mass participation to that of property ownership; only those who owned the soil were entitled to govern it. Only those who held property were tied by this responsibility to seek social order, just as a mother would seek moral order in her responsibility to her child.

Such is precisely what Root and Wood intended when they placed property and literacy restrictions on suffrage—they intended that only those who were involved in the political process be truly concerned with maintaining stability in the Cuban republic. Those who own property have a natural incentive against recklessness, while those who know how to read should theoretically have the knowledge to guide the ship of state as Platt explained. An article in *The Outlook* criticizing disenfranchisement laws in the South aptly said the following, "The Outlook is in sympathy with honest attempts to exclude vice and ignorance from

the polls; but the law must not exclude vicious and ignorant blacks and admit vicious and ignorant whites."[64] It was not so much that the law was aimed at blacks, but rather that it was aimed at ignorant citizens.

The conclusive proof is in the following pudding. If Root and Wood had genuinely intended to suppress Afro-Cubans, or any Cubans for that matter (both had extremely high illiteracy rates), they would not have had begun the immediate, rapid, and extensive development of schools, something Southerners were hesitant to do for blacks in the U.S., and still do. The gravest critique of Spanish colonialism was the sheer ignorance they kept the population under—for centuries.[65] If there was any genuine suppression, it was in the Spanish system which the Americans so gravely criticized. It was not that Root and Wood set up criteria well-knowing that nobody would be able to fulfill the criteria. Rather, they not only established standards, but also provided the means to fulfilling these standards. In a 'personal' letter to Paul Dana, Root writes,

> I do not believe any people, three-fourths of whom are contented to remain unable to read and write, can for any very long period maintain a free government. It is proposed immediately to extend opportunities to the entire Cuban people for elementary education, and even with such facilities as there are now the blacks evince fully as much desire to learn to read and write as the whites….[66]

Having fought for a nation's freedom, however meritorious that action might be, to Root also did not in and of itself guarantee membership in the political process. "It should be noted that the Cuban army consists mostly of blacks, so there can be no just charge of a color line in the proposed basis of suffrage."[67] These two rather contradictory stances were adopted because of ideal standards held for political participation. On the scale of human values, literacy was placed above militancy. Regardless of how we may judge such values, they were the ones under which Root operated. Within this framework, that Root should have adherently stuck to them is an indication of his noble character rather than its ignobility. Men cannot be judged for the things they did not try to do.

Nonetheless, it is important to note the following. Given the close contact with Wood, one might postulate that Root was anything but racist. That Wood defined most Cubans as Afro-Cuban, (i.e. that Cuba lied in the black belt of Latin America) meant that Root must have had this awareness too. Root was legitimately trying to purposefully reform and renovate an entire African community which had been beset, according to him, by a colonial Spanish heritage. Root assumed that the Cuban race—alluding to both biological and cultural mean-

ings—was ultimately malleable. It was not inhibited by biological traits (as a racist would assume), but rather by social ones. Only through a reformation of the social system, in particular of such things as the values and information which permeated that society, would Cuba become free for herself. Rather than depriving Afro-Cubans of their liberty, Elihu Root sought to bestow upon them the freedoms of a permanent republic.

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Racism did not affect in any significant manner U.S. colonial policy towards Cuba between 1898 and 1902. If some claim otherwise, they are projecting our modern concept of 'race' as biologically defined to the turn of the century concept of 'race' which incorporated both cultural and biological elements.

Ironically perhaps, we might even characterize turn of the century Cuba as a modern ghetto; the metaphor would not be inappropriate. Americans discovering Cuba were discovering a world where its members (a majority of whom were of African descent) did not have much political control or social control. The economy was devastated by reactionary leaders; few jobs were to be had, and people made do with what they could. The great necessity of everyone encouraged a very giving spirit amongst certain groups in the populace. The urban infrastructure had deteriorated to the point where living was unbearable. There were poor sanitary conditions; garbage, filth, and unnamable were strewn everywhere. The young died by garbage cans. People mistrusted each other. There was a scarcity of reliable information, and informal oral communication networks spread information throughout the system. Turn of the century Americans reading about Cuba felt genuine pity and a strong desire for help. They could not believe what Spain had done to such a people. The critique of such a chaotic world was complex—they recognized that not only values played a role but urban infrastructures and social ones greatly affected circumstances as well. Wood had, in a few months, to repave roads that had not been mended for centuries. Help the 'Negroes' they certainly did try.

Cuba, however, was not within the domestic mainland but was rather a foreign country adjacent to the United States. National security interests in light of nineteenth century imperialism greatly determined the constraints which policy makers such as Root worked under. These external realities and projected concerns meant that Cuba would not be dealt with as an ally or friend, but rather as a conquered territory. It would be the definitive terms of their relationship.[68] Though the intentions toward Cuba were democratic, foreign realities placed

their relationship not as one of equals but rather as one between lord and vassal, metropolis and subject state. Concerns with regard to German expansive ambition, whether legitimate or not, overwhelmed the democratic tendencies of the American republic.[69] The Cuban problem was not one of the African race, but rather of the international politics. While Cubans, looking at the U.S. towards their future ideal (and judging U.S. conduct by such standards of democracy), the United States was looking elsewhere, concerned about trying to preserve the liberties which could likely have been encroached upon. This lack of shared perspective lead to a grave misunderstanding in Cuban-American relations, and have characterized much of the scholarly literature since the time. It would mean that Cuba would continually perceive America as the aggressor, without taking into consideration that the 'offensive' postures had a 'defensive' intent. At the same time, it would mean that relations would be undemocratic, not only because of misunderstanding, but because they genuinely tinged with dictatorialism. The political stability maintained by the checks and balances of power in the republic would not exist in U.S.—Cuban relations. The constitution did not extend abroad and Cubans, like Puerto Ricans, could not appeal when man's egoism got the better of him. Elihu Root was so overwhelmed by foreign aggression, that he failed to consider domestic aggressors as well. The Cuban "problem" was simply much more complicated than what racist explanations as Aline Helg's suggest.

ENDNOTES

[1] James A. LeRoy, "Race Prejudice in the Philipines" *Atlantic Monthly* 90, 537 (July 1902), 102.

[2] Philip S. Foner, *The Spanish-Cuban-American War and the Birth of American Imperialism*. 2 vols., (New York: Monthly Review Press, 1972); Aline Helg, *Our Rightful Share. The Afro-Cuban Struggle for Equality, 1886-1912.* (Chapel Hill, University of North Carolina Press, 1995); Louis Pérez Jr. *Cuba Between Empires, 1887-1902.* (Pittsburgh, PA: University of Pittsburgh Press, 1982); John L.Offner, *An Unwanted War: The Diplomacy of the United States and Spain over Cuba, 1895-1898* (Chapel Hill, NC: University of North Carolina Press, 1992). This literature is very negative of the Platt Amendment, often distorting the meaning of "dollar diplomacy-a term which really alludes not to 'U.S. greed' but rather to U.S. concerns with regard to the Cuban debt and its potential repercussions on international relations and internal political stability. Please consult the following books for a more mature analysis of the Platt: Lester D. Langley, *The Cuban Policy of the United States; a brief history* (New York: Wiley, 1968); Lester

D. Langley, *The United States and the Carribean in the twentieth Century* (Athens, GA: University of Georgia Press, 1982); Dana Munro, *Intervention and Dollar Diplomacy in the Caribbean, 1900-1921* (Princeton: Princeton University Press, 1964); James Harold Hitchman, *Leonard Wood and Cuban Independence, 1898-1902*. (The Hague: Nijoff, 1971); Hugh Thomas, *Cuba; The pursuit of freedom* (New York: Harper and Row., 1971). Kennedy does suggest that racism was the predominating factor leading to the Platt Amendment, but he prove that such was the case. While he describes and reinterprets, he provides no evidence to the fact. see Philip W. Kennedy, "Race and American Expansion in Cuba and Puerto Rico, 1895-1905," *Journal of Black Studies* 1,3 (March 1971), 306-316.

[3] Crittenden Marriott, "The Character of the Cubans," *Review of Reviews* 19, 2 (Feb 1899), 176.

[4] Foner, 450; Helg, 92-3.

[5] Marriott, 177. He points out that the theft was done by many residents of the island, and not necessarily by the Cuban army which the U.S. was helping, although this seems to be wishful claim. Fred W. Atkinson, "The Educational Problem in the Philippines," The Atlantic Monthly 89 (June 1902), 360-365.

[6] Ibid., 176.

[7] Even Pettit, who gives a very unfavorable description of Puerto Ricans, also goes at some length at explaining why they were they way they were. Although regarding them as an inferior race (p.636), Pettit describes the preceding social circumstances which influenced their behavior. Under the Spanish Colonial system, "Official favoritism meant the difference between wealth and bankruptcy" for farmers during tax assessment. Also, the Guardia Civil were "judge, jury, and executioner combined"; and his license to shoot at free will was abused. (640). Pettit's racism is also moderated by an understanding of the existing social circumstances. William V. Pettit, "Porto Rico," *The Atlantic Monthly* 83,499 (May 1899), 636, 640. Geo G. Groff, "Characteristics of the Porto Ricans," Independent 53 (2744 (July 1901), 1552-1600.

[8] James A. Leroy, "Race Prejudice in the Philippines" *The Atlantic Monthly* 90, 87 (July 1902), 109.

[9] Ibid., 104-5.

[10] Dorothy Stanhope, *The New York Times*, (Sept. 16, 1900), 5.

[11] Ibid.

[12] Ibid.

[13] Wilson report 4, 17, in John. Brooke, *Civil Report of Major General John R. Brooke, Military Governor of Cuba.* 3 vols. (Havana: 1899).

[14] Leonard Wood, *Civil Report of the Military Governor*. (Havana, 1903), 7.

[15] O. H. Platt, "Our Relation to the People of Cuba and Porto Rico," *Annals of the American Academy of Political and Social Science* 18 (July 1901), 153.

[16] Jorge Ibarra, *Cuba 1898-1921: Partidos Politicos y Classes Sociales* (Habana: Editorial de Ciencias Sociales, 1992); Helg, passim.

[17] Kennan, discussing the 'wide prevalence of dishonesty in the private, official, and commercial life of the Cuban people', cites Wood's address to the trustees of the Cuban Orphan Fund. George Kennan, "The Sanitary Regeneration of Santiago," *The Outlook*. (1899), part I, 963. When Wood was later running for president, he voiced concerns that many immigrants to the United States did not share the values of North America, and that they would upset the so.

[18] This fear was a recurrent theme throughout the journals and magazines of the time.

[19] Anybody who has been to Miami will be surprised at how valid some of these observations hold true today.

[20] "…the women sometimes show a capacity for maternal devotion and self-sacrifice that is extremely unusual if not unparalleled in other countries.", p.961

[21] Kenan, 963. Leonard Wood himself said, "You would be amazed at the frankness of some of the people who want to buy favors and influence. They are so absolutely corrupt." in Hermann Hagedorn, *Leonard Wood: A Biography*. 2 vols. (New York: Harper and Brothers Pub., 1931), 207.

[22] Kenan, ii, 1017, 1018.

[23] Descriptions of Spanish culture at the time showed many common patterns between the two. See Babbit's article.

[24] Kennan, p 963., part I. When Wood was later running for president, he voiced concerns that many immigrants to the United States did not share the values of North America, and that they would upset the so.

[25] A few of many examples are the following. Charles M Pepper, "Spanish population of Cuba and Puerto Rico", p. 167 He writes "The Spanish race has taken root there [Cuba]" ; Nichols in his article on Cuban character refers to how Moors "melted away before Spanish cruelty, but they melted into the Spanish race." (p 707); In "byways, outlook article", refers an American who criticizes to white senoritas who stay in balconies rather than associating with crowd, that reading would improve their "race". (p504) (Obviously only upper class whites in protected their young maiden as in Cuba); Groff, in his article on Puerto Ricans, writes that the attitude of not giving assistance was "a characteristic of the Spanish race." (1554)

[26] For an example, see Verena Martinez-Alier, *Marriage, Class and Colour in Nineteenth-Century Cuba. A study of Racial Attitudes and Sexual Values in a Slave Society* (Ann Arbor: Univeristy of Michigan Press, 1989).

[27] Nicols, 711.

[28] Nicols, 712.

[29] Groff., 1553,1554.

[30] Mark W. Harrington, "Porto Rico and the Porto Ricans," *Catholic World* 70, 416 (Nov. 1899), 175.

[31] Helg., 94.

[32] Helg., 97.

[33] Leonard Wood, "Statement of Major General Leonard Wood, Military Governor of Santiago," *Commitee on Military Affairs of the United States Senate regarding Affairs, Civil and Military, in the Island of Cuba.* (Washington D.C.: G.P.O., 1899.), 19.

[34] Hagedorn, vol 1, 322. He cited from the *Atlanta Constitution*, August, 26, 1900.

[35] One should here note that Hagedorn, who wrote the book in the 1920's, also refers to the 'Spanish' as its own distinct race. p. 269.

[36] Hagedorn., 203, 216.

[37] Hagedorn., 189. 193, 265; Kenan, passim.

[38] Hagedorn., 332. The reason was Spanish tanteo; even this sum was half of what the Public Works department had originally agreed to, i.e. $500,000.

[39] Hagedorn, 261. Brooke's requests seem to have been even more vague. See Pérez.

[40] One of the implicit issues dealt with in Hagedorn is precisely this—Wood's executive, judicial, and 'legislative' powers which seemed to contradict the American 'civilizing' mission. Wood was in conflict between the powers of autocracy (and the need to establish order), while at the same time guiding Cubans toward democracy. Town-hall meetings with Wood presided where thus an odd mix of representative and absolutist government. Wood, acutely aware of this problem, tuned down his power. While Brooke limited the press when critical of him, Wood did not. He was also aware of the inherent paternalistic need in his prescribed goals. These conflicts between autocracy and democracy are central dilemmas in the formation of all governments—was true of the United States as it was of Chile.

[41] See Louis Pérez Jr.'s works on Cuban history.

[42] Ibarra, passim.

[43] Dana Munro, *Intervention and Dollar Diplomacy in the Caribbean, 1900-1921 (*Princeton: Princeton University Press, 1964).

[44] Munro., 9, 14. Shippe had actually argued, using the archives in Germany which had been 'opened' explicitly for that purpose, that Germans did not have expansionary activities. That his article was written prior to the Second World War made it a bit ludicrous. L.B. Shippe. "Germany and the Spanish-American War." *American Historical Review* 30 (July 1925), 754-777.

[45] Ibid.

[46] Root believed Germany to be a 'predatory nation'. According to him, "You cannot understand the Platt Amendment unless you know something about the character of Kaiser Wilhelm the Second." Philip C. Jessup, *Elihu Root*. 2 vols., (New York: Dodd, Mead and Co., 1938), vol. 1, 314.

[47] Philip W. Kennedy, "Race and American Expansion in Cuba and Puerto Rico, 1895-1905," *Journal of Black Studies*. 1,3 (March 1971), 306-316. The problem is that everything is so shaded by race, that actions and their impacts are twisted.

[48] And this would be an understatement. In fact, it seems that most scholars place the blame for all of Cuba's ills on the Platt Amendment without even a consideration as to how this amendment prevented much more harmful historical outcomes from occurring. All blame is placed on 'them' without a due consideration of their criticisms. Never is the question asked, "Did the Americans have a legitimate concern with regard to the affinity between U.S. political institutions and Cuban culture?" That such a question was not even worth considering is itself worthy of consideration.

[49] Albert Gardner Robinson, "Cuban Cause of Offense," *Independent* 53, 2729 (March 21, 1901), 671-674; Ogden, R., "Multiplying difficulties in Cuba," *The Nation* 67, 1727 (August 4, 1898), 84-5; "Cuban Renovation," *The Nation* 69, 1787 (Sept.28, 1899), 237-8; "Distrustful Cuba," *The Nation* 71,1843 (Oct. 25, 1900), 324.; "The Overreaching of Cuba," *The Nation* 71, 1850 (Dec. 13, 1900), 454; "The Failure in Cuba," *The Nation* 72, 1868 (April 18, 1901), 308; "Breaking the Faith with Cuba," *The Nation* 72,1861 (Feb. 28, 1901), 168; "The Tariff Bribe for Cuba," *The Nation* 72, 1865 (March 28, 1901), 248; "Explain it to the Cubans," *The Nation* 72, 1869 (April 25, 1901), 330; Richard Olney, "Growth of our Foreign Policy," *Atlantic Monthly* 85, 509 (March 1900), 289-301.

[50] J.E. Stevens, "Review of 'The Philippine Islands and their People'," *The Nation* 67,1744 (Dec. 1, 1898), 416. We find the same lack of racialist justification in Atkinson. Although both articles are not about Cuba, they do reveal that animosity was mainly due to educational reasons (i.e. literacy rates). As such, it would fit into Adas's overarching historical model for the causes of racism. Fred. W. Atkinson, "The Education Problem in the Philippines," *Atlantic Monthly* 89, 533 (March 1902), 360-365; Michael Adas, *Machines as the Measure of Men: Science,*

Technology, and Ideologies of Western Dominance (Ithaca: Cornell University Press, 1989); M. L. Todd, "Civilization and Barbarism in Luzon," *The Nation* 73 1890 (Sept 1901), 221-2.

[51] *Congressional Record*. 56th Congress, 2nd Session. Vol. 34, part 4. (Washington D.C.: U.S. GPO, 1901), 3332, 3333, 3346, 3347.

[52] Ibid., 3333.

[53] Leonard Wood, "Statement of Major General Leonard Wood, Military Governor of Santiago," *Committee on Military Affairs of the United States Senate regarding Affairs, Civil and Military, in the Island of Cuba* (Washington D.C.: G.P.O., 1899), 18.

[54] Helg, 276, footnote 43. Helg does recognize that "they are not highly reliable, especially on racial classification."

[55] Ibid., 427.

[56] Jessup., 304.

[57] Foner's description of Calixto Gomez.

[58] Lejeune Cummins. "The formulation of the Platt Amendment," *The Americas* 23, 4 (1967), 370-389; James H. Hitchman, "The Platt Amendment Revisited: A Bibliographical Survey," *The Americas* 23, 4 (1967), 343-369. Also in Pérez., (1982), passim.

[59] Platt. O. H., "The Pacification of Cuba" *Independent*. 53 (June 27, 1901),1468.

[60] Ibid., 1467.

[61] Platt., "Our Relation…"., 18.

[62] It is curious to point out that in the Philippines, reporters observed that Southerners were actually less racist of the Filipinos than were Northern soldiers. It was hypothesized that because they had more experience with other races, they were more socially adapted to living with them. James A. LeRoy, "Race Prejudice in the Philipines." *Atlantic Monthly* 90, 537 (July 1902), 100-112.

[63] Geogre W. Carey, *The Federalist: Design for a Constitutional Republic* (Chicago: University of Illinois Press, 1989), 12-15,18-19, 54-6, 77, 155-60; William Thomas Jacobks, *Human Nature and its Political Consequences in the Federlaist and the Anti-Federalist Writings* (Ph. D. diss., University of Texas, Austin, 1985), 54, 68-9; John D.Lewis, ed. *Anti-Federlists versus Federalists; Selected Documents* (San Francisco: Chandler Publishing Co., 1967).

[64] *The Outlook*., 487.

[65] Under the system, knowledge had an extremely high value because it was such a scarce commodity. One might then argue that one of the very reasons for the Cuban tendency to purposefully distort information was because this information had an excessive value. Those who possessed reliable knowledge tended to be in the upper social ladder. Economic status was to some degree intimately interconnected with information storage. Consequently, it was to an individual's social self-interest to provide unreliable information (a pattern which persists in such communities). By doing so, they not only maintained their position, but maintained it at the expense of others. In the process, wealth accumulation was perceived as zero-sum game with respect to information. But information is not innately zero sum. Giving away information does not deprive the giver of that information. One can place restriction on this statement, however; it depends on the availability of this information. One might then argue that the more readily available information is, there will be a reduced likelihood of a zero-sum situation, and in turn will reduce the pressures leading to information distortion.

[66] Jessup., 305. Letter written on January 16, 1900.

[67] Ibid.

[68] Elihu Root, *The Military and Colonial Policy of the United States: Addresses and Reports*. ed. by Robert Bacon and James Brown Scott (Cambridge: Harvard University Press, 1916)., passim.

[69] Root believed Germany to be a 'predatory nation'. According to him, "You cannot understand the Platt Amendment unless you know something about the character of Kaiser Wilhelm the Second." Philip C..Jessup, *Elihu Root*. 2 vols. New York: Dodd, Mead and Co., 1938), 1, 314.

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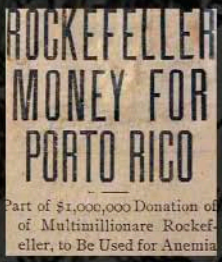
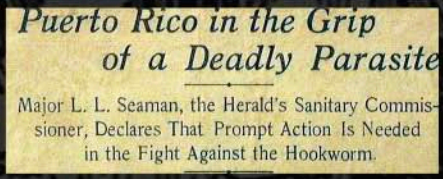
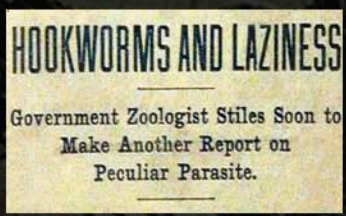
HISTORY





Medicine has long framed race-relations in the Carribean—that basin where African and European cultures have encountered each other for centuries. Whether it was Sir Hans Sloane, who as a physician in Jamaica wrote about African medical beliefs and practices in the seventeenth century, or Dr. Leonard Wood, a doctor who served as military governor to Cuba two hundred years later, medicine and its practitioners have played a key role in the perception of the African Other. While it may not be surprising that colonial physicians often failed to acknowledge the same errors in their own Western medical practices as those found in African therapeutics, the natural empathy felt by many practitioners towards their patients nuanced many of the conclusions drawn from their unique cultural encounters.

Rodrigo Fernós teaches at the University of Puerto Rico (Rio Piedras), and is Director of ICTAL, *Instituto de Ciencia y Tecnología en América Latina* (www.ictal.org). He studied at Brandeis University, the University of Texas (Austin), and the University of Minnesota (Minneapolis). His books include *Science Still Born*, (2003) and *En busca del fénix: la ciencia y su historia en América Latina* (forthcoming).



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