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Governing through Malaria: Biopolitics, Health Discourses, and Mining/Border Communities in Post-Colonial Suriname

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This thesis is dedicated to my beloved wife and life companion, Maria Alejandra, and my daughter, Audrey Renatta, both are my most pure sources of love and inspiration.

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ABSTRACT

This research work investigated how emerging health discourses on malaria are revamping colonial legacies and turning them into structural violence in contemporary Suriname. By critically surveying the colonial past and ongoing post-colonial transitioning in Suriname, using a biopolitics-theory approach and recent medical anthropology to depict health discourses and structural violence, and tapping on the field of Critical Discourse Analysis as ethnomethodology, thirteen medical reports–issued from 2010 to 2014–were examined in order to demonstrate how a discourse of exclusion, inequality, and 'social wrong' endures colonial violence in post-colonial Suriname. Throughout the examination of these contentious medical reports produced by operative medical research units inside and outside Suriname, it is challenged the claim 'man-made malaria' employed by these medical research units to negatively designate some Surinamese mining/border communities, treating them not only as a marginalized

endemic social group but, more problematically, as unsanitary/illegal populations infected with a presumably 'drug-resistant malaria,' an allegation mainly supported upon an elaborated biomedicalized anti-malaria narrative. After building an analytical category designated 'biopolitical configuration,' in combination with a discourse analysis framework, all medical reports were assessed through a *coding matrix*–exclusively designed for this purpose–to make legible those textual markers that, rhetorically articulated, produce a language of exclusion against the targeted populations. The conclusion presents important and disturbing connections found in this emerging biomedical narrative of exclusion, entangling not only legacies of post-colonial legacies in Suriname, but also the purportedly invisibilation of this Latin American sub-region by global intervening forces related to large biomedical complexes.

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INTRODUCTION: MAN-MADE MALARIA IN SURINAME

"(...) Nearly half a billion people get malaria each year. More than a million die. After decades of neglect, the world is renewing its fight against the disease."

***Malaria, Stopping a Global Killer*.**

National Geographic, July 2007.

The beginning of the 21st century has witnessed a dramatic readjustment in today's anti-malaria global politics. This is a fight that dates from the early malaria outbreaks and anti-malarial treatments registered worldwide throughout the routes of European conquerors and missionaries, to the contemporary global efforts to control malaria-vector and infection's patterns under the umbrella of international development projects coming out after the World War II (Cueto, 2013). But today, anti-malaria initiatives are walking through an interesting biomedical renewal, mainly consisting of a new generation of biotechnologies that are enhancing control and surveillance on the old disease *via* human body. However, at a high social cost: in some places it implies the profiling of new subaltern identities. By the beginning of 21st century, thus, such a renewal consists of applying new medical and health definitions beyond vector-control and anti-malaria campaigning and logistics; it is reconfiguring the relation human-vector-space relations and, with it, a new set of contentious assumptions: a change from a 'vector-disease' conception to a humanly modified disease, namely, the emergence of a 'man-made

malaria.' But most interesting, this contentious perspective suggests conceiving malaria not as a fabric of these pervasive biomedical endeavors, but as a new type of socioeconomic challenge to the health authorities, pharmaceutical industries and, hence, to the modern state itself. This is a conception that not only reaffirms the disease's colonial nature through today's health campaigning systems, which keep placing malaria in the body of impoverished populations inhabiting the margins of the state, but also turns malaria–and its endemic subjects and places–into a kind of problematic agents and spaces requiring special health measures. This is the birth of a new 'biopolitics of malaria.'

Recently revamped with the sensationalist tag of 'global killer'–as so publicized by the National Geographic's July-2007 edition–current anti-malaria actions are evolving around a 'biomedical industrial complex,' consisting of the unfolding of an updated microbiology of malaria in connection with new state responses, licensed/non-licensed vaccination policies, global corporative investors and their multi-interest agendas, new national-healthcare protocols, and a renovated crew of scientific and medical agents working out malaria from a biomedical depiction. But more problematically, this process also entails the reconfiguration of the endemic subject, serving as the living body upon which this new biomedical complex addresses its efforts. Therefore, defined here as the 'biopolitics of malaria,' as being currently practiced in contemporary Suriname, this research seeks to understand how some health/disease discourses are performed in countries still walking through failed post-colonial transitions. Suriname, a historically neglected nation in the Northeastern part of South America, with a long-term malaria endemic region, holds a historically marginalized population whose current malaria-

sanitation campaigns are being revamped into quite different and contentious circumstances. The targeted populations are represented by Maroons, former runaway slaves dwelling the forest since the 16th century, after surviving bloody slave-hunts, but also Amerindian communities, and more recently joined by illegal immigrants coming from French Guiana and Brazil, mostly dedicated to informal gold mining, logging, and smuggling. Altogether, they constitute the Surinamese populations upon which a new biopolitics of malaria is being unfolded.

Thus, the biopolitics of malaria in Suriname, as the central topic examined in this work, will be approached from an interdisciplinary perspective, although mainly rooted in the growing fields of medical anthropology and critical discourse analysis. Drawing from a Foucauldian tradition, biopolitical thinking is intended to screen health/disease discourses in its biomedical textual form, relying on the phenomena of discourse formation as a typically sociocultural process, incorporating the utilization of critical methodology based on a discourse analysis framework. From this viewpoint, the sociocultural analyst of health/disease narratives–as the scientific subject responsible for appropriately interpreting theoretical and empirical material–is here conceived as a key critical reader of the everyday social and cultural contradictions residing in the practice and embodiment of biomedical languages upon which the social reality of health and diseases is problematically built and shaped by health communities historically contextualized in post-colonial societies.

So, in order to study how a new biopolitics of malaria are taking place in Suriname, this research work will focus on the following set of research questions: What is a medical anthropological definition of the 'biopolitics of malaria'? How do they entangle with the legacies of violence, inequality, and exclusion *via* health/disease discourses in Suriname? How can they be comprehensively detected in specific biomedical anti-malaria narratives? And, more concretely, how do these findings redeem Surinamese mining/border communities from state and structural violence? Therefore, looking at this set of questions through different theoretical, historical, and analytical views, *this work intends to examine the connections between the contemporary biomedicalization of anti-malaria narratives and the ongoing, but yet troubling positioning of Suriname as a post-colonial state, regarding the use of discursive designations and narrative strategies for profiling allegedly endemic groups through medical reports.* It is assumed that contemporary post-colonial Suriname has failed its transitioning to a more stable form of modern state by continuing its historical politics of exclusion against forest peoples, nowadays entangled with the contentious global political economy of gold mining and forest smuggling in the Surinamese interior territories. A process that becomes legible in the undergoing biomedicalization of anti-malaria narratives while reflecting the colonial legacies of violence, inequality, and exclusion.

While responding to the above set of questions, on the basis of a critical anthropological approach, this thesis project has been disposed in four chapters, each of them portraying historically, theoretically, or analytically each of the research inquiries. The first chapter aims to draws the historical development and colonial origins of

political and structural violence in Suriname, by targeting two specific but overlapping sociopolitical moments: first, the colonial Suriname itself, beginning with its traumatic foundational moment; and second, the enduring marks of these legacies of violence in contemporary colonial transitioning as exercised over mining/border populations, assumed as former runaway slave communities. It is particularly considered the way in which the Dutch colonial administration, with focus in the legacies of the Dutch West Indies Company, conveys with the 20th century global mining industries and their impact in the Surinamese socioeconomic history. Special attention is given to the problematic evolution of 'Negro bush' identities and other border subjectivities, and their even more contentious incorporation in the modern/post-colonial politics of Suriname. The second chapter focuses on the anthropological and critical foundations of the contemporary 'biopolitics of malaria,' presenting the medical anthropological debates and some theoretical assumptions that help framing the topic. Essentially departing from a Foucauldian perspective of biopolitics, it addresses the intersectionality of health, disease, state formation, and structural violence. But most importantly, this second chapter introduces the notion of *biopolitical configuration*, a key analytical category used for biopolitically interpreting the formation of health/disease discourses that will turn legible those rhetoric strategies embedded in scientific narratives.

In order to find out the way in which the category of *biopolitical configuration* makes legible the 'social wrong' within the biomedical anti-malaria text, the third chapter offers an overview of the relevance of discourse analysis, again, from a Foucauldian interpretation updated through contemporary discourse theorists. Here it is introduced

central definitions and methodologies proposed by the Critical Discourse Analysis approach, and how they conform to the biopolitical thinking of health/disease discourses in Surinamese anti-malaria narratives. This chapter also paves the way to understanding and applying critical reading techniques to biomedical language in the contemporary social construction of realities through contentious forms of modernity. The fourth and last chapter, on the other hand, builds upon the previous historical, theoretical, and analytical frames to examine the empirical material and present findings as contained in a set of medical reports. To ethnologically depict the alleged 'social wrongs' embodied in the sourced material, this section is divided into three parts: an introductory one that presents the methodological strategies applied to the empirical materials, as well as the design and presentation of the *coding matrix* as the key instrument for tapping into the empirical material; an analytical intermediary section which explains the direct results after the application of a *coding matrix*; and a final discussion about the findings and evidence that reconstructs socially, historically, and culturally the evolution of a biomedical anti-malaria narratives displaying biopolitical configurations. All the matrixes containing the text analysis were organized in the 'Appendix 2' section, respectively. This research concludes by reflecting on the contentious statement of 'man-made diseases' and the case of malaria in Suriname, exploring how some forms of anti-malaria narratives intersects biomedicalization and the continuation of colonial legacies of violence. This final part also discusses the strength and limits of a biopolitical thinking, and how it endeavors to identify and interpret the political subjection allegedly encoded in some genres of malaria narratives. In order to avoid the continuation of the 'social wrong' in its form of exclusion, inequality, and stigmatization, additional critical anthropological and

historical analysis will be unfolded to fight the invisibilizing curtain veiling the contemporary Suriname.

CHAPTER 1. COLONIAL AND POST-COLONIAL SURINAME: RECONFIGURING BODIES AND PLACES

> **'What are you doing there, my friend, in that horrible state?' - 'I am waiting for my master, the famous merchant Monsieur Vanderdendur.' - 'Was it Monsieur Vanderdendur,' said Candide, 'who treated you in that way?' - 'Yes, sir' said the negro, 'it is the custom. We are given a pair of cotton drawers twice a year as clothing. When we work in the sugar-mills and the grindstone catches our fingers, they cut off the hand; when we try to run away, they cut off a leg. Both these things happened to me. This is the price paid for the sugar you eat in Europe.'**
>
> **Voltaire, *Candide: or, The Optimist*. 1958, p.89.**

In order to attain a critical interpretation of the problematic claim 'man-made malaria,' upon which most of the analyzed empirical material seem to be grounded, this chapter will examines the troubling historical background of colonial Suriname, how the colonial legacies of violence endure contemporary post-colonial Suriname, and, finally, how the social production of malaria as a colonial disease may also be endorsed through allegedly philanthropic global anti-malaria initiatives. It must be stressed, however, that the main analytic problem faced in this research project is the lack of a comprehensive historical and anthropological accounts that study malaria in the specific geographical context of Suriname from a sociocultural perspective. Informal historical narratives have been carried out in the production of some medical reports, mainly for the need to contextualize their own biomedical anti-malaria articles, as exemplified in the brief

historical reviews contained in Hiwat et al. (2011) and Breeveld et al. (2012), both works included as empirical material for critical examination in this research.

As it will be demonstrated in chapter four, much of this historical accounts: on one hand, lacks important historical and social facts or, on the other, most of them endorse discomforting claims in which it is openly dismissed the political and structural violence experienced by the population medically profiled, such as gold mining communities or interior villages in Suriname, targeted as an endemic population, and even stigmatized with the designation of 'malaria-resistance reservoirs.' By addressing issues like their tapping on paramedical practices and non-authorized vaccines for treating malaria, by inhabiting border areas or making a living of informal mining, or just by lacking minimal sanitary conditions, the authorized medical voices behind biomedicalized reports seem to be projecting a colonial malaria over the *social body* of mining/border populations in Suriname, ignoring clear patterns of structural violence and current human rights violations.

Portraying Colonial Suriname

Among Latin Americans and peoples from elsewhere in the world, Suriname constitutes a nation not only scarcely represented in the Latin American system, but also erased from the Latin American imaginary, probably followed by French Guiana, Guyana, and Belize. In cultural terms, nonetheless, the Surinamese people is considered the most diverse society in the region, actively professing at least five religions–

Christianity, Hinduism, Islam, Judaism, and Indigenous and African-derived religions (World Dict. of Minorities, 1997:114)–and speaking several languages, categorized by Carlin and Arends (2000) in three ethno-linguistic groups: (a) Amerindian groups, constituted by pre-colonial Amazonian inhabitants, with eight languages registered, and spoken by different Cariban and Arawakan tribes; (b) Creole languages, mostly–but not exclusively–spoken by former enslaved populations, and capitalized by the comprehensive dialect of 'Sranatongo,' is considered the lingua franca in Suriname, including three vernacular variations present among Maroons communities; and (c) the Euroasian group, consisting of those languages that arrived with the colonizers: on one hand, Dutch (the official-colonial language, but far from being considered the most spoken one in Suriname), and on the other Sanarmi, Kejia, and Surinamese Java, these last three actively spoken in Suriname since the mid 18th century, after the arrival of indenture laborers from India, China, and Java, respectively (Carli & Arends, 2000:1-2). In term of facts, Suriname possesses a sovereign territory of 163,821 sq km, with a number rounding the 550,000 inhabitants as for 2015, and a GPD grow of %1,8, with a economy dominated by the mineral and oil sector, being regarded as a country with the best 'performing economies over the last decades' in the region, especially taking notice of an expected growth in the oil production and gold mining sector for 2016, according to the World Bank's Country Data Reports (WB-Country Data Report-Suriname, 2015). However, as the only Dutch ex-colony in continental Latin America, having attained just very recently its independence from the Netherlands, Suriname stands as a nation with a unique colonial experience and history in a region poorly known and, most importantly,

experiencing a contentious post-colonial transitioning, as well poorly examined and registered by social sciences, starting with its incipient colonial formation period.

Suriname's foundation was the result of fierce European open battles and skirmishes for the control of commercial routes and strategic land possessions all over the Atlantic Ocean. Although formally acquired as a Dutch colony in 1667, Suriname was first forged after the clashes of different European colonial forces in the transatlantic region as an explicit outcome of commercial expansionism, intensified by the recently born Dutch Republic and its belligerent disposition against the Spanish and Portuguese crowns, and occasional but also fierce antagonism with France and England. According to Oostidie and Hoefte (1999), the Dutch colonialism had already several decades of presence in the Caribbean and Atlantic region, including small settlements in the Guyanese shores, but with Curacao in the Caribbean as their standpoint for slavery and other commodities, and Recife–in Brazil–as their main plantation domain mainly dedicated to the production and shipping of sugar to Europe, most trading posts being founded in the first half of the 17th century (Ootidie & Hoefte, 1999:606-607). However, it was with the unstable mercantile system of the Dutch republic, including the regulars collapses of the West India Company, and the heath of the Anglo-Dutch wars in Europe and elsewhere, when the Dutch Empire negotiated in 1667 its leave from Recife, and relocating their sugar plantations to Suriname, now formally settled as Dutch colony in exchanged for New Amsterdam with the British Empire–currently Manhattan (Hart, 1989:666; Price, 2010).

When analyzing Suriname as a colonial society, from its early formation at the beginning of the 17th century up to the apex of the Dutch Atlantic colonialism by the end of the century, it must be said that the Dutch colonial administration overseas was always exercised with trembling hand, pragmatism, and political indifference toward their colonies. In the mid-16th century, it seemed that the main goal of Dutch expansionism was to get established in the shores of Bahia, to take control of the Portuguese plantations, and start up the production and shipping of sugar to the Netherlands (Emmer, 2006:17). However, a rearrangement of the Portuguese crown, and of whole Europe in general, destabilized this Dutch possession and shook off the Dutch with their Portuguese plantation systems, which implied to disparately seek new plantation economies (Emmer, 2006:20). Its retreat to Suriname, although it proved viable and quite profitable as a productive plantation at its early moments, it happened in a period of declining positioning for the Dutch in the Atlantic area, given the constant conflict with the English. This troubling situation made of Suriname a set scattered villages with powerful but isolated plantations, the last bastions assimilating the remnants of the slavery-trading, with poorly functioning harbor and sporadic economic growth, rapidly turning into a place of decaying colonial importance. At the end of the 18th century, the Dutch Guyana's society had just become arenas for the metropolitan disputes of the Dutch crown, at this point transitioning again to a centralizing monarchy (Postma, 1990:177).

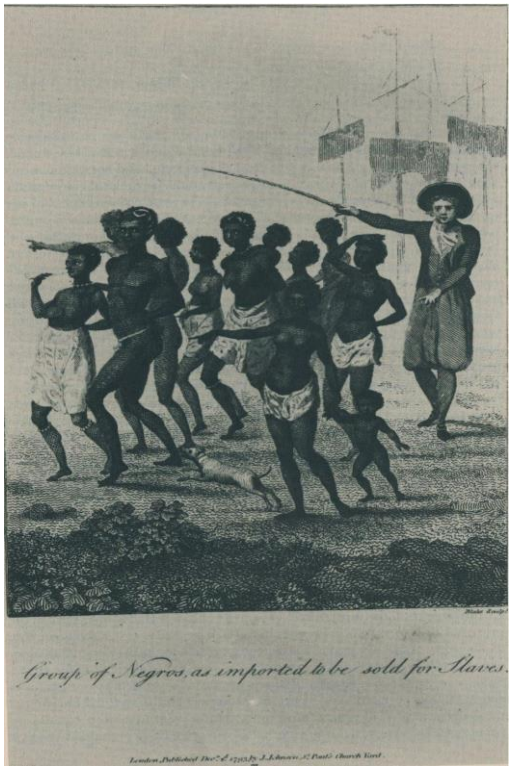
Besides its Amerindian population interned deep in the forest–whom the Dutch occasionally traded with or fought against–and the African slaves brought in by the Dutch cargos from the Dutch trading posts in West Africa shores, mainly imported from

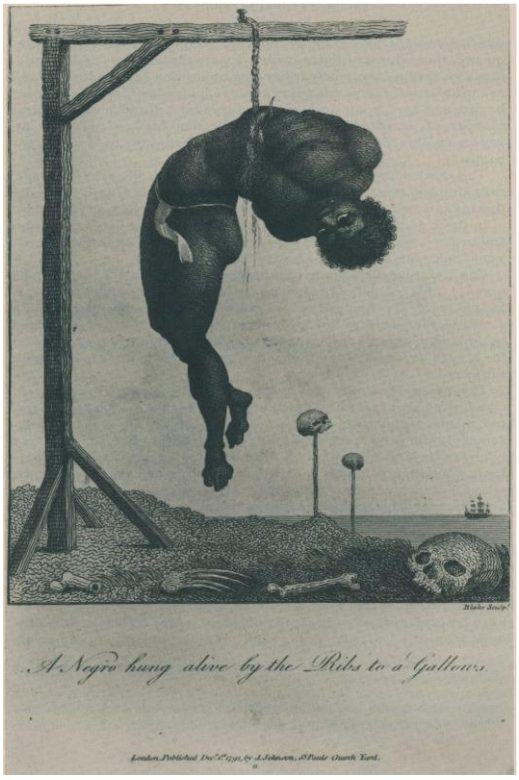
Elmina and Accra, Surinamese colonial villages became a territory also inhabited by an isolated and particularly violent non-Dutch colonial population, consisting not only of German, French, and Danish peoples mobilized and fleeing from political, ethnic, or religious conflicts in Europe; but also inhabited by a much more paradigmatic social group instrumental to the Dutch Atlantic expansionism: the Sephardi Jews, fleeing Spain and Portugal, and addressing The Netherlands after the Reconquista and the Catholic Inquisition (Gonsalves 1958; Klooster 2006; Vilk 2010). This atypical group of colonial subjects became a especially violent ruling class of non-Dutch white planters–focusing mainly on sugar plantations–in the colonial Suriname who, disenfranchised of the sovereign right to access key positions the Dutch colonial administration, displayed an astonishing violent system of plantation overseeing addressed not only toward the slave population, but also toward the attacks bewildered by English, French, and even runaway and Caribs against their plantation, living in a permanent state of war. The non-Dutch white planters constituted, thus, a colonial establishment that relied their colonial authority on the coercive power of the plantation system. Much of this infamous colonial violence was registered in the literature of salient European writings such as Voltaire's *Candide*–quoted at the beginning of the chapter–as well as in the chronicles of 'illustrious' European mercenaries like the *Narrative of a Five Years Expedition against the Revolted Negros in Suriname* (an edition curated from the original manuscript dating from 1790, by R. Price & S. Price, 1988), written by the Dutch-Scottish militia-man John Gabriel Stedman during his military journey to Suriname in the 1770s, to help content runaways slaves revolts against planters, and at the same time reporting in detail the brutality of planters' executions and torturing methods (see ***Images 1***):

> "(...) No long ago /continued he/ I saw a black man hang'd alive by his ribs, between which with a knife was first made an insision, and then clinch'd in Iron hook with Chain-in this manner e kept living three days hanging with his head and feet downwards and catching with his tongue the drops of water /it being in the raining season/ that were flowing down his bloated breast while vultures were picking in the putred wound, notwithstanding all this he never complained and even upbraided a negro for crying while he was flog'd below the Gallows (...)" (Stedman, 1986[1790]:103)

In this way, as it will be indicated further in the next section, the slaves and runway-black communities became subjected to this unbearable coercive institutions, legitimately justified and exercised over them, a stigmatizing violence that would remain relatively untold and unconscious in Suriname post-colonial history.

Images 1: Left-image, an Overseer conducting newly arrived African slaves to Paramaribo; Right-image, a hanged black slave as described above by Stedman. Both images taken from Stedman's* Narratives*, illustrated by Price & Price (1986).





The historical obliviousness around this cruel wounds of suffering may have also remained silenced, on the other hand, in the fact that the end of the slavery system and colonization did not historically coincided, holding a time difference of almost one hundred years in between both processes: with the Abolition taking place in 1863, but being totally accomplished after a 10-years mandatory transition period; and, later on, came colonial independence from the Netherlands, in 1975, regarded more as a colonial administration release after strain yielded from local political parties and internationalization trends. In addition, soon after Abolition, came labor indenture bringing a new kind of colonial subject: the Hindustani, Chinese, and Javanese indented

laborer who replaced black slavery in the ongoing plantations, producing a massive mobilization of black populations to Paramaribo. By the beginning of the 20th century, with the emergence of indenture laboring, of a new class of impoverished freed Black work-force, and the rising internationalization of global industries, Suriname became a targeted territory for mining exploitation, massive deforestation, and eventually oil production, yet under Dutch control up until 1974 (Dew, 1978:5). Bauxite exploitation rapidly grew as a key industrial sector, becoming the third economic sector of importance in Suriname by the end of the 1960s. And with the industrialization of Bauxite and other branches of economy, especially invigorated by the World War II from where mining economy emerged rapidly, also did the labor mobilizations and nationalization movements, producing the first ethnic/labor-oriented political parties that drove the nation to a pacific decolonization process, but with weakened and inexpert democratic institutions (Dew, 1978:50). But in 1980, five years after obtaining independence from the Netherlands, Suriname entered an authoritarian regime led by a military Junta, which would last 10 years and would include a stark political repression and the systematic violation of human rights. In such a context, the biopolitics of malaria appears as an undergoing social process of producing a disease being built upon the intersection of undeniable remnants of violent colonial legacies, the political economy of global mining industry operating since the beginning of the 20th century in the interior territories of Suriname, and the failed process of articulating a post-colonial modern state. From this scenario malaria emerges as a colonial disease with long presence in Suriname, but narrated from a partial and oblivious perspective, deeply medicalized but uncritical to the Surinamese social history.

Colonial Legacies of Violence in Post-Colonial Transitioning

As discussed in the previous section, a brief review of the colonial and slavery history of Suriname, during the Golden Age and Decadence of the Dutch imperial expansionism on the Atlantic World, results critical for the understanding of Suriname's slavery society as a community of violence, a historical and analytic category that overlaps with the social production of malaria itself in biopolitical terms. Considered a colonial disease with long presence in Suriname as well, thus, malaria's definitions of its endemic subjects and areas appear to intersect with Suriname's violent colonial past. The distinctive brutality with which the Dutch colonial expansionism and slave system seized Suriname, either by slave trading or by plantation system, remains as an emblematic symbol of Dutch presence in the Guyanese region since the 17th century, in spite of its lack of historical examination among Latin American intellectuals or Human Rights historians in the region. And as a result of this violent process, and contrary to the alleged structural communalities between the Dutch slavery system and other colonial-slave societies, the production of Dutch colonial subjects–especially non-European ones–walked through a different historical path that has had a distinctive impact in the formation of the contemporary Surinamese identities, turning today evident in the problematic definition of Suriname's citizenship and, hence, who holds the right to and who is alienated from public health assistance.

From this perspective, these legacies of violence can be traced up from two incipient aspects rooted in the colonial Suriname up until its contemporary post-colonial transitioning. First, the colonial formation of Suriname relied on an unstable and uncertain colonial state-building process rooted in the incipient emergence of a commercial republic in The Netherlands, which–as mentioned above–materialized in its dependence to the financial and political upheavals of para-state corporations, such as the Dutch Western Indies Company (Oostindie & Hoefte, 1999:612), whose rise and fall determined the fate of Suriname's future as a structurally decadent colony up until the 20th century, connecting with the contemporary global mining industry as the inheriting agent of Dutch neocolonial presence in Suriname. Second, the subsequent dislodging process of Suriname's colonial identities either, in the realm of the Dutch colonialism and within the Surinamese territory, intensified with the shrinking of the Dutch presence in the Atlantic, with the recurrent crises and bankruptcy of a non-Dutch White colonial elite, and the problematic emergence of a runaway black community resisting the colonial state or the arrival of an ethnically different socioeconomic group in the mid-19 century (Dew, 1978:21-22; Oostindie & Hoefte, 1999:605-6). Thus, the process of configuring a Surinamese post-colonial identity, disguised today with the neoliberal label of 'cultural diversity' or 'multi-ethnic society,' still distills the resisting colonial subjectivity loosely coinciding with the contemporary Suriname's nation-state and its modernizing institutions. On the contrary, and as a fact, the imaginary of runaway slaves movements and communities are still alive in the post-colonial state, with its ancient forms of fierce plantations, against who it is necessary to remain hostile, in challenging attitude. This contending colonial subject has evolved as an antagonistic agent to the colonial

administration not only by succeeding in playing ancient and new guerrilla warfare against planters, militias and colonial apparatuses, but also while residing in the densely forested interior territories of Suriname.

Thus, according to anthropologist Richard Price (1975), the Surinamese *Bush Negros*–like the surviving Samarakas, Ndjukas, and other four Maroon tribes–appear in the history of Afro-America as a society capable of succeeding in both, the colonial and forested hostile environments, defining them as "all the groups of runaway slaves in the New World [that] succeeded in establishing viable, independent societies which are still flourishing today" (Price, 1975:21). Price highlights the uniqueness of these Maroon communities for escaping from the violent plantations of the coastal Suriname in the late seventeenth and early eighteenth centuries evolving, all along, during the evolution of the Surinamese colonial state, into dynamic guerrillas units warring against the Dutch colonial administration at different periods. But in spite of their alleged isolationism, Maroon communities also developed important commercial rapports with coastal settlements, which evolved intermittently from "raiding plantations during the wars to receiving periodic 'tribute' from the government following the peace treaties, and finally trading, logging, and wage labor on the coast during the last hundred years" (Price, 1975:22). As stated in a more recent work, Richard Price (2011) portrays the contemporary Maroon society as social group in possession of unique warring and survival skills who are not anymore an 'exoticized other,' but they have evolved into a contentious skilled indigenous society still capable of resisting the enforcing induction of an emergent nation-state project. This coincides with others historians in highlighting the

relevance of understanding slave and post-slave black identities in the Americas as 'quintessential cosmopolitans,' although not necessarily in mimicking colonial/post-colonial bourgeoisie styles (Berlin, 1996; Waldstreicher, 1999).

Images 2: Description of a Free Negro Ranger in Suriname, in 1795. Taken from Stedman's* Narratives*, illustrated by Price & Price (1986).

So, it has been a series of political reforms and modernizing plans yielded by this emerging Surinamese sovereign-state that, based on a transnational economy and its associated conflicts and contradictions, entangled the Maroon society with a wider range of contemporary global actors and interests inside and outside Suriname, and brought

about a troubled postcolonial transitioning, between the 1950s and the 1970s. According to this, Price asserts:

> "For Saramakas, the culminating moment of their history as a people come in 1762, when after nearly a century of warfare with the colonists, their ancestors accepted Dutch overtures for peace and signed a definitive treaty (...) For nearly 200 years, that peaceful entente endured. Then the government announcement: the dam, at the northern edge of traditional Saramaka territory as defined in the treaty, would create an artificial lake flooding half of the Saramaka lands, including some forty-three villages–home to 6,000 inhabitants" (Price, 2011:38).

The building of a dam in Maroon's territories not only implied their absorption as work force for the dam's construction, but also an important replacement of Maroons communities, and more pressure to relocate them into costal and urban spaces. Thus, with the dam building in the mid-20th century, and other large international projects, the life-style of Maroons and Amerindians communities in Suriname where dramatically affected by modernity: the French space center project in the town of Kourou, French Guiana, in the 1960s, "with Saramakas providing the single largest contingent" (Price, 2011:41); or in the form of new corporative mining industries, under the brand of Shell/Billinton and Alcoa/Suralco, transnational firms dedicated to exploitation of bauxite/aluminum and important economic actors in the Suriname's post-colonial transitioning (Dew, 1994:67). All these global economic enterprises relied on Maroons and indigenous groups for clearing the forest, doing carpentry, construction, mining, building bridges, roads, power plants and airports; transforming once more this society into a 'quintessential transnational' men, although still reduced to live into shacks on stilts with no sanitation or

other amenities (Price, 2011:43), impoverished populations with dislodged identities, but yet discredited by contemporary city Creoles.

Another critical stage in the troubling making of the Surinamese forest communities' identities has been the *political momentum* during which the Suriname's decolonization process took place. In his work on Suriname's decolonization politics, Edward Dew (1994) offers an interesting view of how Maroon communities were not only politicized, but also armed, militarized and turned into active clandestine guerrillas, legitimating the old legacies of colonial violence in their bodies and culture, revamped in the heath of new political conflicts that incorporated them as an armed tool for now national and international interests. In the 1980s, at the beginning of the post-colonial era, forest communities were already identified in the new national politics with 'jungle commandos,' a set of growing guerrilla organizations settled in the southern and southeastern part of the country (Dew, 1994:120). Their introduction into the political arena was product of a growing militarization during the unstable post-colonial transition, led by Desi Bouterse, a controversial military figure–and current president of Suriname, democratically elected since 2010–who previous to his final coup d'état in 1980, supported and coalesced with Maroon militias seeking his personal benefit (Thorndike, 1990:40; Dew, 1994:122; Hoefte, 2014:149). According to Dew, the Jungle Commando was contracted first as a Pretorian guard by Bouterse himself, who priced their ancient and well recognized warring skills, under the leadership of Ronnie Brunswijk, a Maroon descendent from the Ndjuka community, particularly known for their fiery warrior spirit. But this Maroon-militia rapidly evolved into a dissident group, considering themselves a

'liberation army,' after a dispute between Brunswijk and Bouterse for political and economic counter-interests, a disagreement later embittered by Brunswijk and his guerrilla's alliances with the Dutch government against the Surinamese *de facto* government, and ultimately translating into an open struggle to resume and control Dutch-American financial aid, or their political favor, on the promise of building a liberal democracy once in power. All these political events historically contextualized during the end of the regional version of the Cold War, which also involved international communist countries like Cuba and Libya (Thorndike, 1990:58; Dew, 1994:123). On this respect, however, Price goes further by denouncing that much of these alliances were already tainted with Narco-traffic business and the control of smuggling routes in the forest, as the actual reason behind much of these political enmities (Price, 2011:63).

Now, in addition to the increasing ethnic tensions and open discrimination against forest peoples moved to coastal areas and the city margins, brought about by the Brokopondo Dam project and the impact of other industries in the inner territories: the forest peoples resumed to be subjected to the sate military rule, now hunting guerrilla members, openly violating their human rights and remilitarizing their territories (Price, 2011:66). In the middle of an open civil war forced detentions, tortures, summary executions, and even massacres have been reported during the *de facto* period, intensified between 1986 and 1992, and some of them known after different names: the 'Massa Day,' standing for the killings of fifteen people in the Christmas night of 1982, committed in the form of forced arrests and summary executions in the prison (Thorndike, 1990:42); the 'Aloeboetoe Incursion,' the torture and killing of six civilians from the forest

communities and buried in road (Price, 2011:66); and 'The Moiwana massacre,' where the army killed nineteen forest people, including children and women, in search of guerrilla members (Dew, 1994:127).

CHAPTER 2. THE BIOPOLITICS OF HEALTH AND HEALTH/DISEASE DISCOURSE FORMATION

"(...) He had no learning, and no intelligence. His position had come to him–why? Perhaps because he was never ill... He had served three terms of three years out there in the Camp. Because triumphant health in the general rout of constitutions is a kind of power in itself."

Joseph Conrad, *Heart of Darkness*.

The second chapter aims to build a theoretical framework for defining what it stands for 'biopolitics of malaria.' In a first section, it is unfolded the notion of 'biopolitics' as derived from Foucauldian post-structuralism, stemming in Foucault's most salient works and developments on the topic. The discussion is, then, further with more resent updates provided by medical anthropologists and contemporary philosophers, most of them revamping 'biopolitics' in terms of a contentious 'politics of life.' The next section is devoted to present a central idea in this research project: the design and unfolding of four critical categories for interpreting biopolitically health/disease discourses, namely, *biopolitical configurations*. Following important works and debates in resent critical medical anthropology, this attempts to introduce the instrumental importance of these categories for depicting critical aspects in the biopolitics of health and disease in its cultural form of social discourse. In the final section, it is offered a brief analysis of how malaria has been 'biopoliticized' at a global stage, since the mid-20th century onward. By

tapping on the works of M. Locke & V. Nguyen (2010) and M. Cueto (2013), special attention is paid to the processes and definitions upon which anti-malaria campaigns have evolved, from early medicalization and sanitation of colonial territories, to an entailing model of 'global governance of malaria' in which a change of actors, practices, objects, and interventions, demonstrating how recent biomedicalization of malaria is impacting and politicizing this old disease in the form of biased health discourses and ideologies.

Biopolitics of Health and Medical Anthropology

In the realm of neatly formatted and carefully organized medical discourses, *health issues* and *diseases* constitute powerful categories utilized to some profile endemic or suffering entities in permanent interplay with allegedly maximizing strategies of life enhancement. As encoded in these contemporary medical practices and endeavors, these texts are instrumental in problematizing human biologies when entangle with diseases and health issues at the preeminent insight of the medical gaze. From a critical anthropology perspective, however, *health* and *disease* are represented in a less positive fashion: both categories are examined as the outcome of a new political economy of life, entangled with histories of violence, and updated with current forms of social suffering and structural inequalities–likes poverty and marginality, armed conflicts, deficient or inexistent welfare state, or dehumanized medical practices–resulting in the eventual making of disposable or marginalized human beings (Patterson, 1982; Farmer 1996; Whitehead, 2004; Sanal, 2004; Conrad, 2005; Giroux, 2006; Fassin, 2009; Povinelli, 2011). Hence, this work holds that the case of contemporary medical management of

malaria in Suriname demands an updated revision and adequate contextualization in a critical anthropological perspective. Since malaria already recounts a long history of colonialism and medicalization, it becomes, more than urgent, to uncover the way malaria's old colonial stamp is currently being subtlety reabsorbed by contemporary medical practices such as sanitary interventions, pharmaceutical production and distribution, and even in the making of new cartographies for malaria reservoirs, each of them crucial medical practices embedded in complex reconfigurations of global and local biomedicine. Thus section will lay the theoretical foundations for examining health/disease discourses, while shaping malaria and anti-malaria actions, through the lenses of contemporary critical anthropology and biopolitical thinking.

The notion of 'biopolitics of malaria' builds upon an updated view of an old Foucauldian assumption, namely: the growing reduction of life to a political economic transaction in the context of contemporary Western and Westernized societies (Foucault, 2007:361). From this perspective, the biopolitical thinking, inaugurated by Foucault in his late lectures taught in the *College de France* on biopolitics (*Defending the Society*, Lectures of 1975-76; *Security, Territory, Population*, Lectures of 1975-76; *The Birth of Biopolitics*, Lectures of 1978-79), has helped critical anthropology to better problematize such categories as life, death, and body when considering health issues and disease as the outcome of state power and a global political economy, rendering visible the functioning of biopolitical technologies, power relations, and governmentalities as continued forms of managerial control over health and life (Fassin, 2006 & 2009). In this respect, contemporary philosophers like Giorgio Agamben provide an important ontological

stance from where biopolitical thinking, for example, is necessary framed into a 'politics of life' through which a political life–understood in terms of politically meaningful citizenship–is opposed to a dehumanized treatment of social live–understood as 'bare lives' (Agamben, 1998:10). By reframing Foucault, Paul Rabinow and Nikolas Rose (2006) situate their biopolitical thinking in terms of observing how these forces are 'situated and exercised at the level of life,' in forms of interventions over the vital characteristics of human existence (Rabinow & Rose, 2006:196). Nikolas Rose (2007), on his own, proposes the category of 'politics of life itself' regarding the intense biomedicalization of life (Rose, 2007:10-11). Meanwhile, Didier Fassin, another outstanding figure in contemporary medical anthropology, presents the idea of 'life as such' in order to speak of legitimate biopolitical interventions (Fassin, 2009:50). On the other hand, Lisa Stevenson speaks of 'life beside itself,' in which it is denounced the uncertainty of living accordingly for some marginalized social groups to a full humanly life (Stevenson,2014:3). So, when applied to contemporary health issues and diseases, biopolitical thinking challenges reductionisms while discerning diseases like malaria, moving away from commonsense assumptions on its diagnosis, such as: a disease just transmitted after infectious processes caused by a vector transporting *falciparum malaria*; or relating malaria to specific endemic geographies–forested reserves, marginalized zones, or unsanitary areas; or by presenting it as a political challenge in the global public health's agendas and humanitarian programs for underdeveloped areas. Malaria, as its deadly sisters (HIV/AIDS, cancer, tuberculosis, and many other family-vector diseases), is here apprehended as an outcome of a complex set of political economic transactions

that entangle social, political, economic, cultural, and technological issues, all conflated at different levels, and intended to govern malaria in its human form.

In order to make sense of biopolitics as an applicable approach, however, it should be asked by what means this biopolitical thinking contends and debriefs health/disease discourses, as put into practice in the case of anti-malaria narratives. Since the 1990s, social research associated to medical anthropology and biopolitics has been proposing encompassing models for depicting health issues and disease crises beyond formal medical research or global public health agenda, offering outstanding analytical frameworks to render legible the governmentality of endemic populations. Nikolas Rose, when describing contemporary biopolitics in terms of a biomedicalization of life, for example, refers to a set of specific actions and activities intended to biomedicalize society as a whole, through the concrete forms of: molecularization, optimization, subjectivization, somatic expertise, and economies of life (Rose, 2007:5-6). In similar terms, therefore, the construct of *biopolitical configuration* is here intended to designate those social processes through which biopolitics informs health/disease narratives in the form of discursive strategies. Following Rose, the present work comes up with the category of *biopolitical configurations* as a key analytical tool, adapted from the Foucauldian biopolitical thinking and contemporary critical anthropology in order to make sense of health/disease discourses resulting in the exclusion on certain endemic populations and misrepresented peoples. As an analytic tool, thus, *biopolitical configurations* will be hereon utilized as a conceptual framework to identify, examine, and depict health/disease discourses in contemporary anti-malaria initiatives, with special

regard on its unfolding in post-colonial societies. In practical terms, this category is here purported to render legible the 'biopolitics of malaria' as a social phenomenon operating in contemporary biomedical anti-malaria narratives, in the form of health research publications.

The Category of 'Biopolitical Configuration'

Although malaria is internationally recognized as a colonial disease with a deep stigmatizing effect over former colonial regions and, more recently, over marginalized social groups, it lacks appropriate categories of sociocultural analysis that provide critical evidence of how malaria has being reconfigured as a technology of governance, and instrumentalized under the guises of medical and political management of such an infectious and widespread disease. As mentioned above, the category of *biopolitical configuration* seeks to help conceiving and developing a comprehensive insight addressing those social processes and political arrangements that articulate into strategies of power within health/disease discourses. But when applied to the analysis of health/disease discourses, this category should enable a critical understanding of those social processes upon which a biopolitical articulation instrumentalizes on the basis of an authoritative medical narrative. The category of *biopolitical configurations*, as used to depict exclusion and inequalities, help featuring, at least, four critical definitions in biased health/disease discourses, namely: first, *stigmatization*, as the possibility of assigning discriminating or degrading marks which may translate into specific negative designations; second, *concealment/erasure*, as the attempt to keep invisible some forms

of violence and social suffering behind medical language or knowledge; third, *biomedicalization*, in which medical power is displayed over populations, consisting in the contentious embodiment of medical-political interventions; and, fourth, *enclosure*, as the process of reducing social-spatial dimensions to biomedical measures, conditioning subjects, objects, and environments there contained. Each aspect is conceived to represent a social process in which a *biopolitical configuration* becomes ideologically or discursively articulated. However, each feature anchors to different but yet compatible set of theoretical backgrounds and approaches that enable, later on in the unfolding of critical analysis over anti-malaria medical reports, an awareness of how malaria emerges as biased health discourses in post-colonial Suriname.

1.- Stigmatization.

Diseases–like malaria, HIV/AIDS, and tuberculosis–are widely considered as stigma-bearer diseases, whose stigmatizing effect over individuals and populations get enhanced when combined with historical and social issues of other kind. Stigmas constitute, on their own, powerful social devices utilized for producing negative difference among individuals or social groups on the basis of physical marks or collective designations among others. As proposed in Erving Goffman's classic work on the subject, the term *stigma* refers to a deeply discrediting attribute in the stigmatized individuals, designating them as subjects in possession of an undesired differentness that would set them apart from generalized expectations of the community, moreover, implying a 'variety of discriminations, through which we effectively, if often unthinkingly, reduce

[their] life chances' (Goffman, 1986:5). But in order to exercise a stigma, it is necessary that the discriminating group or discourse build on certain enunciations or designations upon which it is possible to display the stigmatized persona's inferiority and account for the danger he/she represents, an ideology that turns functional through specific discursive metaphors and imagery. From a more recent medical anthropological perspective, however, and as proposed by S. Lochlann Jail in her work *Malignant* (2013), contemporary stigmatizing diseases can be described as complex social processes in which a set of systematic designations, authoritative enunciations, and formatted surveys–also known as total social facts–function as a disease artifacts to medically and socially produce the diseased persona, a phenomenon called by Jail 'the violence of abstractions,' which always implying its own moral interpretations (Jail, 2013:34). In her perspective, certain diseases are totally immersed in a 'culture of stigma' in which the disease is not just physical, but social and institutional, turning the sole description and classification of that set of disease artifacts the ideological ground where the stigma operates (Jail, 2013:157).

2.- Concealment/Erasure

With roots in Western slavery societies, the social *concealment* and *erasure* of structural violence and social suffering consist in the process of social negation of the different other (Patterson, 1982:38), and now represents a phenomenon of great concern in today's critical medical anthropology. Since the 1990s, renowned medical anthropologists, such as Merrill Singer, Paul Farmer, and Philippe Bourgois, among

others, have been setting the foundations for criticizing and denouncing the systematic invisibilization of structural problems directly impacting and deeply entangled with the epidemic, mortality, and morbidity rates of a disease; a phenomenon also known as the 'magic-bullet approach,' where the increasing biomedicalization of health and use of biotechnologies on life has tended to target the disease, without regard to many other social, economic, and political factors involved in the social production of health (Cueto, 2013:30). The most outstanding fact denounced throughout their works is that the social group most affected by endemic diseases are poor and politically marginalized (Rylko-Bauer et. al, 2009:4); in addition, 'the poor are not only likely to suffer, they are also more likely to have their suffering silenced' (Farmer, 1996:280). And although the process of social *concealment* and *erasure* of violence and suffering may be unfolded through many ways and strategies, when featured as a *biopolitical configuration*, Didier Fassin asserts that "the real issue is whether we are able to recognize violence in social processes that the dominant discourse never articulates in terms of violence" (Fassin, 2009:117). From this perspective, and following Fassin's study on AIDS and violence in South Africa, at least two strategies of concealment/erasure should be highlighted: the 'lack of recognition' of violence or suffering affecting the human dignity of diseased populations, usually replaced by sound discourses evoking historical or national images, or exalting economic, political, or research interests; and the strategy of 'repressed subjectivity,' in which the diseased subject is unable to express their condition–in the actual form of a speaking agent–, or having his/her persona totally erased from the medical discourse (Fassin, 2009:116). As biopolitical strategies, their employ in medical

narratives shows evidence of the invisible exercise of a biopower over the muted biomedicalized populations.

3.- Biomedicalization

As a key biopolitical strategy, *biomedicalization* is broadly conceived as that social process in which the human biology acquires a new cultural form, now reorganized upon the tenets of a political economy of life and death, turning life into an assemblage of political subjectivation, technological intervention, economic commodification, and medical management (Franklin & Locke, 2001; Rabinow & Rose, 2006; Rose, 2007; Fassin & D'Halluin, 2005; Murphy, 2013). When termed 'medicalization,' as originally conceptualized by Peter Conrad (2005), this category was offered to identify the process of "defining a problem in medical terms, usually as an illness or disorder, or using a medical intervention to treat it" (Conrad, 2005:3), in a context in which organizational changes and new or developed arenas of medical knowledge become socially, culturally, and politically dominant. Conrad's category highlights the fact that medicalization processes are made of complex social forces (e.g., medical services, pharmaceutical industries, drugs' markets, managed care, etc.) operating at different levels with the purpose of shaping society. The process of *biomedicalization*, however, seems to move further in problematizing the increasingly medical intervention in human life. Locke and Nguyen, for example, situate *biomedicalization* in the apex of biomedical technologies "achieving unprecedented global governance with microbiology becoming defined as a standard for intervention into individual bodies and populations," first practiced in

European colonies, later on in the form of biomedicine, globally delivered as a Western model of health governance (Locke & Nguyen, 2010:146). But Michelle Murphy (2013) concisely defines *biomedicalization* as the process of featuring "both the elaboration of medicine as a corporate for-profit endeavor and a multivocal appeal to 'responsibilize' individuals as accountable for their own health" (Murphy, 2013:52). Therefore, when evoked through health/disease narratives, *biomedicalization* appears as a set of rationales, images, and even metaphors entangling biomedicine and life on the basis of managerial practices, biomedical technologies, and other forms of medical agenciation that, simultaneously, enhances and justifies biomedical interventions over the *body social*, but avoiding responsibilities on the structural violence. When taken as a biopolitical configuration, thus, *biomedicalization* should be assessed in its multiplicity *via* medical narratives, when implying uncritical acceptance of allegedly authoritative voices on the basis of engineered medical governmentality, seeking the legitimation of biopower through health/disease discourses.

4.- Enclosure

As proposed by Foucault in *Discipline and Punishment* (2008), biopolitical configurations involve not only the enforcement of such practices as normalization, discipline, registered care, and surveillance, but also their careful display in specific locations and places. The process of spatializing control and governmentality, therefore, address to the notion of 'enclosure' (Foucault, 2008:228). James Ferguson and Akhil Gupta (2002) examined spatialization in the context of state sovereignty in its attempt to

straighten out the governance of health, where "These mundane [state] practices often slip below the threshold of discursivity but profoundly alter how bodies are oriented, how lives are lived, and how subjects are formed" (Ferguson & Gupta, 2002:984). And biopolitics, as a research field for 'politics of life,' has caught interesting and updated critical observations condemning how some contemporary care systems and health bureaucracies, deeply rooted in the state, with their extreme policing methods, seem to be unnoticeably returning to the hideous notions of 'enclosing camps,' in allusion not only to the overlooked suffering currently experienced in the prison complex, but also in refugee camps, displaced settlements, hospitals, and machiladoras (Agamben, 1998; Redfield, 2005; Adams, 2013). More aligned with emerging political ecological approaches, however, the term has been revamped regarding the contemporary but problematic overlapping of human mobility and sovereignty enforcement, from where *enclosure* becomes also "the social process that delimit and restrict movement of specific goods, people, and ideas" (Cunningham & Heyman, 2004:293). From this viewpoint, *enclosure* is viewed as a political economical strategy to contextualize specific social-spatial interactions within health/disease discourses where–by looking at the political, economic, and social structures–it is possible to understand the power relationships that reinforce inequities in health decision-making at a variety of scales in terms of spatial dimensions. Therefore, as a biopolitical configuration, the notion of *enclosure* allows the analyst to recognize political landscapes and certain space-formation processes inside medical narratives that affect health-decision making, informing so the logic of larger political processes like global health governance and state sovereignty.

Revamping Colonial Diseases: The Contemporary Biopolitics of Malaria

In accordance with the medical establishment, malaria is a borne-vector disease in which the parasite *Plasmodium Falciparium*–as just one variety–is transmitted into the human blood stream provoking a biological reaction that destabilizes the body up to a deathly collapse, after experiencing fever, vomiting, seizures, and coma. Although current medical advancements have not led to total eradication or a definitive vaccine, malaria has become a medically and socially manageable disease when observing proper health protocols and investment in medical research, especially designed to govern the illness's impact in the *body social*. According to this ideology, malaria may not come to represent a deathly menace to public health, at least not in those regions where political willingness and economic development collaborate to overcome this disease, as demonstrated in the long history of successful anti-malaria programs at different colonial and post-colonial periods of the modern state's evolution, as well as successfully endeavored within the industrialized world. Nevertheless, the contemporary high prevalence of malaria in the Global South seem to contrast with the growing complexity of a global political economy around malaria, also evident in the *assemblage* (Montoya, 2011:3) of medical procedures, pharmaceutical industries, international funds, large medical staff and bureaucracy, technologies, plans, campaigns, protocols, and managerial proceedings to intervene in the local forms of this disease in the Global South. From a medical anthropological perspective, therefore, malaria is read as a disease with a long colonial and political history in its behind. Its historical development through the European expansionism has been featured with an intense biomedicalization after the

emergence of the first epidemic crises during colonial territorialization. The 20th century's biomedicalization of malaria reengineered the disease on the basis of new medical epistemologies and new social and political concerns, now problematized in terms of new biologies (microbiology, germs, pathogens, medical routines), new risks (epidemics, pandemics), new subjects (natives, non-natives), new geographies (margins, borders, tropics), and power relations (state-colonial administrations, markets, industries, exploitations).

More explicitly, the work of Margaret Lock and Vinh-Kim Nguyen (2010) explains how early processes of biomedicalization of malaria overlap with colonial governance, involving the use of biomedical technologies that facilitate the political, economic, and cultural entanglement of metropolis-periphery relations. From their viewpoint, the biomedicalization of diseases like malaria included a stigmatizing pattern stemmed in early biomedical practices such as pasteurization (Lock & Nguyen, 2010:148). Although consisting mainly in the reengineering of microbiological research within metropolitan research centers, these medical practices constituted an extension of a growing global political economy of the colonial administration in the form of sanitary institutions: in Foucauldian terms (Foucault, 2008:231), they became spaces of enclosure for scientific prophylaxis and governmental surveillance, with the purpose of eradicating or controlling tropical diseases for paving the way to the political territorialization of the colonial state (Lock & Nguyen, 2010:151). Through sanitary institutions, metropolitan centers drew on colonies as research fields and medical laboratories for their experimentation on sanitation and endemics controlling operations, resulting later on in much more complex

forms of health governance. Much of those technologies derived in structured medical campaigns, being conducted by experts from metropolis, and historically associated, first, to colonial administrations and sanitary units and health missions, then, to national and international health enterprises (Lock & Nguyen, 2010:178). More dramatically, such health campaigns got totally resignified by the introduction of a microbiological perspective: they were accompanied with a spatialization of endemic areas where to campaign against the disease and diseased bodies, now turned into 'reservoirs' of infectious microorganisms and pathogens – where the term 'reservoir' itself would play a central function in labeling certain endemic populations and space according to new criteria of risk assessment. As Lock & Nguyen stated it, "The Pastorian shift toward a microbial theory of disease causation structured a powerful imaginary of the colonies as vast laboratories where the enactment of hygienic measures could be tested, and the results compare across time and space" (Lock & Nguyen, 2010:179).

Following Marcos Cueto's critical views on the malaria biomedicalization (2013), the development of anti-malaria campaigns in the second half of the 20th century seem to show an important revamping pattern in its globalizing strategies, addressing the 'worldwide malaria eradication campaign' (Cueto, 2013:32). In these terms, malaria has been resignified as a global health 'critical event' (Locke & Nguyen, 2010:147) since the 1950s, and as such, it has sought to operate under new global health markets and rules in order to promote its medical routinization, in which one of them deals with the political redefinition of the diseased subject; the other, with the global maximization of health campaigns and their governmental instrumentation. Regarding the former, and when

analyzing the case of an epidemic outbreak of cholera in the basins of the Orinoco river, Charles Briggs and Clara Martini-Briggs (2003) identify the opposing categories of 'sanitized citizenship' against 'unsanitary subjects' as a key discursive mechanism upon which public health institutions and other state apparatuses tend to rely on to designate diseased populations and make health-decisions (Briggs & Martini-Briggs, 2003:10). From this stance, the political identity of diseased population becomes mediated by the possibility of actual citizens to be scanned through marketed sanitary processes and disciplinary hygienic practices, which also indicate the emergence of a social gap between both, sanitized and endemic populations and, hence, an institutionally legitimate inequality backing the development of neoliberal health markets and industries on the basis of a unjust social production of health (Briggs & Martini-Briggs, 2003:312). This gap also indicates the overlapping of the social and the biological when distinguishing diseased and non-diseased populations as part of large biomedical enterprises, and how it disguises the growing inequality in between. As pointed by Michael Montoya (2011) in relation to the biomedicalization of diabetes among Mexican-American populations, endemic diseases are highly sensitive of turning into key instruments to produce influential social categories–'ethnobiologies'–employed by state-corporative apparatuses through the medical-scientific complex (Montoya, 2011:8-9)

Regarding the globalization of health campaigns against old endemic diseases, 'international campaigns' have been reconceived and reorganized according to new actors, objects, technologies, and strategies, and most importantly, how they develop in interplay with space and time. With this new generation of anti-malaria initiatives, malaria

corresponds with an international biomedical upgrading of global health sanitary actions on the basis of up-to-date medical technology and expertise would eliminate it (Cueto, 2013:33). Then, global anti-malaria campaigns get international legitimation through different international actors and dynamics, especially since 1950s: with the World Health Organization heading almost any 'initiative' against malaria, in association with national agencies and pharmaceutical industries. From this perspective, anti-malaria global campaigns progressed moving back and forth from total disease 'eradication' to primary health care 'controls' over the disease. According to Cueto, each strategy has implied different trends in global health leadership and management – whether neoliberal or prudent-skeptical – as well as variegated alliances, initiatives, and actors, varying from scattered (anti)malaria programs between 1960s to 1980s, to Global Malaria Control Strategy (Amsterdam, 1992), Multilateral Initiative on Malaria (Dakar, 1996), Medicines for Malaria Venture (1999, in global action), Roll Back Malaria (as a WHO's pre-Millenium initiative), and the so-called PPP (the neoliberal Public-Private Partnership) that permeated most ventures since the 1980s, and as it has been recently exemplified by the financial and institutional intervention of the Bill Gates' charity foundation. The 'eradication-control' debates mainly dealt with the utilization and marketing – or not – of different biomedical procedures, programs and devices, such as: insecticides (DDT sprayings), insecticide-treated mosquitos nets (ITNs) or bednets, Primary Health Care programs (as passive malaria surveillance), Special Programs for Research and Training in Tropical Disease (launched by China and WHO), anti-malaria drugs (Chloroquine, Mefloquine, Artemisinin, and Artemisinin combination therapies or ACTs), etc.

In sum, those four features of biopolitical configurations help to identify how global governance of health malaria, and its contentious political contextualization, takes place in contemporary health/disease discourses. This work will show that the governance of a disease necessarily relies on biopolitical configurations of power that directly or indirectly tend to hide its power relations behind power/knowledge discourses. In the case of malaria in Suriname, contemporary anti-malaria biomedical narratives seem to be still enduring colonial legacies of violence and projecting forward a failed post-colonial transitioning.

CHAPTER 3. DISCOURSE ANALYSIS: A CRITICAL METHODOLOGY FOR INTERPRETING BIOPOLITICAL CONFIGURATION

"660 (1885-1886): *The Body as a Political Structure*. The aristocracy in the body, the majority of the rulers (struggle between cells and tissues). Slavery and division of labor: the higher type possible only through the subjugation of the lower, so that it becomes a function (...)"

Nietzsche, *The Will to Power*.

In this chapter it is sought to lay the methodological foundations for examining how *biopolitical configurations* function and are unfolded within some anti-malaria narratives, leading to produce exclusion, inequality, and subjection on the basis of colonial legacies, structural violence, and stigmatization as exercised over allegedly diseased mining/border communities at contemporary Suriname. The first section will frame this work's research problem into an anthropological perspective, with focus on the Foucauldian model of discourse analysis, setting down the pinpoints upon which *biopolitical configurations* can be made legible. Moving from this theoretical grounding to a more applicable level of discourse analysis, the second section will center in presenting and adapting the categories of *biopolitical configurations* to a Critical Discourse Analysis framework, by relying on the model of 'narrative genre/language ideology' proposed by Michail Bakthin, Norman Fairclough, and Terry Locke, on one hand, and Judith Irvine and Susan Gal, on the other. From this viewpoint, the Critical Discourse Analysis methodology is assumed

as an ethnomethodology by its own, which helps depicting the contentious meanings behind the biomedical anti-malaria narratives, in representation of a biased health ideology that can be understood and disentangled through a critical approaching. Finally, a third section is intended to formulate the methodological strategies and its functioning previous to their application in chapter four.

Framing the Category of 'Biopolitical Configurations' into the Field of Discursive Analysis

Common sense and popular conceptions about health and disease issues, particularly in developing countries with large traditions of populist but unstable governments, usually takes for granted that medical modernization and progressive health programs are exempted from political instrumentation or maneuvering. As asserted in chapter one, however, some health/disease discourses and practices have proven to hidden many forms of violence, inequalities, and other strategies of state surveillance. And as it will be demonstrated, authorized medical voices can endorse contentious assumptions overlapped with medical research and health initiatives in the form of elaborated reports and sound scientific essays, by problematizing certain bodies and populations that do not fit with the historical subject modeled after the nation-state. Disguised as a pathologized social group or profiled as wrongdoers, thus, some health/disease discourses are able to carry and display these social disparities uncritically, having a huge impact in local and global health-decision making cycles, on the basis of biased diagnoses, inadequate accounts of sanitary conditions, or misreported or distorted denouncement of actual perils of endemic propagations. To prove these connections, it is

held that some contemporary health/disease discourses, as allegedly evidenced in some anti-malaria narratives addressing Suriname's public health issues, are fueled with a series of misrepresentations, designations, descriptions, and concealments that may be considered inadequate and detrimental to specific human groups, as it seems to be the case of mining/border populations, implicating an unequal provision of health services, or even disregarding the basic human rights language and provisions stated in the international declarations and political constitutions (UDHR: Articles No.21, No.24, and, notably, No.25).

Thus, as proposed early in this research work's introduction, all these political issues around the social making of health/disease discourses pose relevant questions: how can these forms of covert violence, inequality, and exclusion be detected in contemporary health/disease discourses on malaria? How can this structural violence and its purportedly everyday use over mining/border communities be demonstrated? Furthermore, how can these damaging discursive patterns in contemporary anti-malaria program in Suriname be recognized as an actual 'social wrong' in order to be challenged and remediated? Conceived as a set of social processes addressing issues of power relations, subjection strategies, and 'social wrong' at an ideological level of the social imaginary, *biopolitical configurations* must be approached as social constructs embedded in the domain of discourse phenomena, and should be methodologically approached through the field of discursive events. Thus, a discourse analysis framework will be tapped as a methodological tool to treat and make legible *biopolitical configurations* within a set of medical texts. Rooted in the Foucauldian/post-structural thinking, the discourse analysis

methodology as applied in this research work is intended to make speak the implicit language behind the formal text by tapping into the unconscious level of the social discourse, aiming to depict the formal meanings beyond the explicit presentation of the sign, which is usually displayed to endure or even foist disciplinary rules and behavioral norms through the portrayed social reality invoked in the text (Foucault, 1981[1966]:363).

By relying on this psychoanalytic level of interpretation to reveal the social meanings contained in a discourse, then, a set of analytic procedures will be utilized to describe and depict the *biopolitical configurations* in their form of problematic utterances or 'statements' within the analyzed medical reports. Therefore, said that much of this configuration are represented as statements disposed in a determined form or 'occurrence' within the text –referring to the Foucauldian category 'statement/event' (Foucault, 1972:28)–those constructs here designated as *biopolitical configurations* can become legible by the identification of the appropriate textual 'markers' disguising specific notions or beliefs conveying with structural violence, inequality, and subjugation under the format of authoritative medical narrative. Then, according to original Foucault's propositions, with particular attention to *Archeology of Knowledge* (1972), a 'statement/event' will consist of a comprehensive analytical tool that aims to decipher the problematic meaning behind the text by making visible the 'interplay of relations' among statements (Foucault, 1972:29). By identifying this set of textual patterns within the examined text, the discourse analyst should be able to depict the power relations at play behind the problematic meanings in a given health/disease discursive–proceeding in

accordance with a key Foucauldian notion of 'relational power': "as the support which these force relations find in one another, thus forming a chain or a system (...)" (Foucault, 2008[1976]:89; Lynch, 2011:19). In order to perform this level of critical discourse analysis in a more updated key, nonetheless, it is necessary to resort to more encompassing category of discourse in which the critical reader is able to capture the linguistic system where a specific discourse is displayed.

For accomplishing this goal, it is necessary to examine health/disease discourses within the frame of narrative *genre* from where health and disease issues are formatted– and, therefore, the material level of the text–in a set of discursive and narrative strategies like thematic content, style, and compositional structure (Bakhtin, 1986:60), aiming to interpret the social reality through concrete social lens. According to the field of discourse analysis, with special reference to the discourse theorist Michail Bakhtin (1986), *genre* is conceived as "one order of speech style, a constellation of systematically related, co-occurent formal features and structures that serves as a conventionalized orienting framework for the production and reception of discourse" (Bauman, 2000:84). When taking *genre* as a analytic category, social texts are assumed as written material coding social reality through a particular formatted construal, consisting of an 'assemblage' of specific features intended to produce a social reality. From this perspective, *genre* will turn into a key analytic category to make sense of anti-malaria narrative as a written representation of a certain type of health/disease discourse.

Depicting Biopolitical Configurations through Critical Discourse Analysis

The proposed methodology to depict *biopolitical configurations* in health narratives is the Critical Discourse Analysis (CDA) approach, as proposed and updated by the New Zealander author, Terry Locke (2004). Following the developments of renowned discourse theorists, such as Teun van Dijk and Norman Fairclough, Locke defines CDA as a methodology:

> "aiming to systematically explore often opaque relationships of causality and determination between (a) discursive practices, events, and texts, and (b) wider social and cultural structures, relationships, and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power" (Locke, 2004:1).

Then, according to Locke, the CDA constitutes a critical methodology deeply rooted in the Foucauldian tradition seeking "(...) the systematic analysis and interpretation of the texts as a potentially revelatory of ways in which discourses consolidate power and colonize human subjects through often covert position calls" (Locke, 2004:2). Locke sees CDA's potential as a critical project intended to map the origin and development of ways of thinking which shape modern attempts to constitute human beings as objects of scientific inquiry or state and economic apparatuses (Locke, 2004:27). But, most importantly, Locke asserts that "CDA is concerned with the ways in which the power relations produced by discourse are maintained and/or challenged through texts and the practitioners which affects their production, reception, and dissemination" (Locke, 2004:38), implying that by examining a text through CDA means arising 'awareness' on

how certain narratives mediate and perpetuate power configurations in the form of discursive technologies, as a product of the exalted 'cultural reflexivity' in the late modernity (Fairclough & Wodak, 2004:370). On this respect, Norman Fairclough (2012) speaks of the social reality discursively produced as inescapably conceptually mediated by discourse formations (Fairclough, 2012:9) from where it is deduced that social reality has a reflexive character on the basis of a dual 'material-semiotic' nature, in permanent dialectic interaction with that reality, which explains its pervasive effect in the way society imagine itself.

But, how do this apply concretely to written material? As assumed in this research work, CDA will be here resorted to interpret *written texts* containing detrimental contents that affect the human condition, identified under the form of social 'social wrong' (Fairclough, 2012:13). Where the *written text* is taken as the operationalizing artifacts that: at a 'semantic level,' instantiate discourses for the unfolding of purported social meanings; and at 'material level,' makes them appear in a specific format within which the social discourse mobilizes and turns tangible those meanings (Fairclough, 2012:12). So, *biopolitical configurations* should be sought as a set of social constructs trying to express specific social meanings in formatted texts within which the different biopolitical processes of stigmatization, concealment, biomedicalization, and enclosure can be found by identifying specific textual 'markers' disposed along the text.

On this respect, Irvine and Gal (2000) propose assert that discourses should be approached as *ideologies*, assumed as dynamic social schema of reality shaped socially and linguistically by interactions intended to articulate a given social order (Irvine & Gal, 2000:35). These two authors examine the formation of 'linguistic differentiation' produced by discourse-ideologies as powerful conceptual schemes within a given sociolinguistic system. According to Irvine and Gal, at a semiotic level, this differentiation process within the text can be found in the articulation of specific meanings intended to build a social order, namely: (a) by noting the exaltation and homogenization of a particular set of signs (*iconization*); (b) by articulating an strategic dichotomist projection of certain linguistics features to set collective identities, normalizing or discriminating different social groupings (*fractal recursivity*); and (c) by creating strategic exclusion, marginalization or ignoring patterns considered disruptive to the normalized or homogenized ideological scheme (Irvine & Gal, 2000;37-38). Therefore, this semiotic criteria may facilitate a reframing of the different articulations contained under the category of *biopolitical configurations* in order to address the ideological scheme in which health/disease discourses operate, and from which it is possible to texturize the contentious process of identity formation in biomedicalized anti-malaria narratives. From this view point, the biopolitical categories of 'stignamtization,' 'concealing/erasure,' biomedicalization,' and 'enclosure' overlaps with Irvine and Cal's model of *iconization/fractal recursivity/erasure* as expressed in the following table:

Table 1. Reframing Biopolitical Configurations into the Irvine & Gal's 'Model of Linguistic Differentiation.'

Biopolitical Configuration (Categories)	***Iconization***	***Fractal Reflexivity***	***Erasure***
Stigmatization		X	
Concealment/Erasure			X
Biomedicalization	X		
Enclosure	X	X	

As noted above, the reference to the Irvine & Gal's criteria for approaching the semantic level of a discourse/ideology scheme, allows the critical reader depict in his discourse analysis the different biopolitical configurations articulated within the text as related to the complex process of identity formation when producing political subjection, exclusion or a particular form of social wrong. In the next chapter it will be display a *coding matrix* that would serve as the key instrument for analyzing different medical reports as textual material by applying the different discourse analysis criteria proposed above. In the 'Results' section it will be considered in detail how biomedicalized anti-malaria narratives operate as a material, functional, and semantic level in order to produce an endemic subject and space.

CHAPTER 4. ORGANIZING AND EXAMINING THE EMPIRICAL DATA: ANTI-MALARIA NARRATIVES AS CONTENTIOUS HEALTH DISCOURSES IN POST-COLONIAL SURINAME

> **"Art.25: (1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."**
>
> ***Universal Declaration of Human Rights*.**

This chapter examines a series of medical reports in which anti-malaria narratives are analyzed through a CDA approach, combining Foucauldian perspectives on discourse formation with more recent views on discourse analysis and sociolinguistics. The outcomes resulting from unfolding these methodological criteria, as proposed in chapter three, consist in the application of a *coding matrix* as a heuristic tool to facilitate the identification of *biopolitical configuration* within textual material. The purpose of this appraisal is to respond to one of the research question formulated in the introduction, namely: How can *biopolitical configurations* be comprehensively detected in biomedical anti-malaria narrative? How can these social constructs be found and proved by applying a CDA approach from a biopolitical perspective? As held in the theoretical and historical developments at previous chapters, contemporary health/disease discourses on malaria have been susceptible to be instrumentalized in post-colonial Suriname to endure political

and structural violence by articulating some discursive *genres* to designate endemic subjects and spaces. Thus, in this part, it will be first presented how analytical frameworks were applied and to what results their application conducted. In a first section, clarification will be provided to explain the criteria with which the empirical material–the *written text*–was selected, organized, and disposed for the application of a CDA review. This includes a functional description of the *coding matrix*, as the analytic tool upon which most text contents will be downloaded and examined. A second section, will report on the application of the analytic tool, and the most salient outcomes and findings. Finally, a third section will present the results of this research work: an explanation of how the evidence of a biopolitical construal confirms the rehearsal of political subjection through specific forms of health/disease discourse within post-colonial Suriname.

The Medical Reports and the Application of a Coding Matrix

The examined material consisted in a set of 13 medical reports selected from five recognized medical publishers, namely, the *Malaria Journal*, *Parasite & Vector Jourrnal*, *American Journal of Tropical Medicine & Hygiene*, *Memorias do Instituto Oswaldo Cruz*, and *Infection & Drug Resistance*, and all accessed digitally through larger medical databases like: *BioMed Central*, *DovePress*, and *PLOS-One*. However, all reports where organized accordingly to the following selection criteria:

1.- *Thematic/publishing criterion*: all samples have been selected regarding the ongoing medical-scientific research on regional/global malaria. Their discussion or research

topic centered, then, around or in relation to Suriname's anti-malaria actions, strategies, or polemics, which has resulted in its delimitation to four major aspects: malaria entomology, vector ecology, programs deployment, drug-resistance issues, and vaccination licenses.

2.- *Timing criterion*: All samples were collected in a timeframe of five years: starting in 2010, with not detailed medical-research publications specifying on malaria; 2011, with an incipient but paradigmatic report authored by two key researchers; 2012, as the most important year in which a large literary production and detailed debate takes place around malaria in Suriname, counting up to six reports; 2013, year in which a global health-decision makers' report reorient the research criteria on malaria in Suriname and Guyana; and 2014, marked by a paradigmatic medical report sealing the problematic nature of a biomedicalized anti-malaria narrative on Suriname.

3.- *Regional/local encompassing criterion*: The samples were organized and presented by sets according to the geographical unfolding of an anti-malaria narratives referring exclusively or partially to Suriname, namely: *Set-A*, exclusively devoted to Suriname; *Set-B*, dedicated to Suriname and Guyana; *Set-C*, nor related to this region representing a different anti-malaria discursive *genre*; and *Set-D*, regional scope: Guyanese region or Amazon basins. (See **Table 2**.)

4.- *Critical reading criterion*: The samples will be all read for a critical scope seeking to depict the biopolitical assumptions behind some anti-malaria narratives when evidencing a narrative entangled with the power relations unfolded by an emergent post-colonial state and an international apparatus of global health governance. This

discussion, thus, addresses the problematic claim of 'man-made malaria' upon which, a vector-oriented narrative is changing into a man-made disease within the Surinamese context, relocating infection risks, propagation modes, pharmaceutical protocols, and even drug-resistance issues on the human body and its social stigmatization. From this perspective, a 'critical reading' will focus in understanding the logic of the social, economic, and political in holding responsible socially excluded and historically marginalized mining/border peoples.

Table 2. Number of Reports Reviewed Distributed: by Year and by Set.

Period	Set–A	Set–B	Set–C	Set–D	Total Rp./YY.
P-2010	-	-	1 Report	1 Report	*2 Reports*
P-2011	-	-	-	1 Report	*1 Report*
P-2012	3 Reports	2 Reports	-	1 Report	*6 Reports*
P-2013	2 Reports	-	1 Report*	-	*3 Reports*
P-2014	1 Report	-	-	-	*1 Report*
Total Rp./Set	*6 Reports*	*2 Reports*	*2 Reports*	*3 Reports*	***13 Reports***

In order to examine each report's content, a *coding matrix* was designed that would help as analytic tool to depict the different narratives encompassing discursive *genre* on malaria in Suriname. Visually represented as a detailed 'text analysis form' (see **Appendix I**), the *coding matrix* was framed into two discourse levels–a 'material' level and a 'semantic' level'–as proposed by Fairclough and Irvine & Gal in the previous chapter, although counting on an additional intermediary level–a 'functional' level–in

order to better portray the intersectionality implied in the identification of the textual markers inside the text, matching with the biopolitical categories intended to describe patterns of exclusion, inequality, or political subjection. More concretely, each level of the *coding matrix* has been featured as follow:

(1) The 'material level' addresses two salient aspects of the text: (a) *Overall Data*, in which detailed elements of the report can be specified to articulate visually and formally the topic, i.e., publisher, issuing dates, topic, composition, and access policy; and (b) *Authoring Strategy*, as an attempt to make legible the way authors strategize their written work by indicating their number, brief background information, research community representing, involved countries, authors' networking strategies, and intended audiences.

(2) The 'functional level' of the *coding matrix* focuses on the most critical moment of this analysis: the identification, and listing of most salient (c) *Markers* present at the text, captured through key terms, designations, or sentences, and briefly defined as found within the text patterning *biopolitical configurations*.

(3) The 'semantic level,' in which: a (d) *Report's Excerpt* presents the focus of the examined narratives, evidencing or not a biopolitical pattern; (e) a *Statement Interplay/Interconnection* section, consisting in a set of comments identifying patterns after the critical reading and among the findings; and (f) a final section of *Evidence of Political Subjection*, in which it is confirm or deny the evidence of instrumentalizing an anti-malaria narrative to produce social wrongs.

Analysis of the Medical Reports: Applying the Coding Matrix

According to the application and outcomes of the *coding matrix* to a group of 13 medical reports, from 2010 to 2014, the findings tossed by the analytical tool suggests that a number of specific markers and patterns present in the examined texts confirm the existence of *biopolitical configurations* discursively patterned and intended to produce certain type of political subjugation or exclusion by articulating, directly and/or indirectly, a set of narrative strategies and language intended to stigmatize, invisibilize, biomedicalize, and/or enclose mining/border peoples assumed as malaria endemic populations in Suriname. As mentioned above, the *coding matrix* produced three kinds of evidence framed in the three different levels: first, a material level, concerning with some specific text features and authoring strategies; second, a functional level, in which *biopolitical configurations* are sought through the articulation of a group of textual markers representing each a form of 'social wrong': stigmatization, concealment/erasure, biomedicalization, or enclosure; and third, a semantic level in which it was attempted to identify the central utterances allegedly presenting or formulating biased narrative, after being contrasted with the markers found within the texts.

At the *material level*, the medical reports presented the following patterns:

(1) Although the majority of the reports were published by *Malaria Journal* (a total of 7 items), the remaining 5 reports (published by: *Parasite & Vector Jourrnal* [2], *American Journal of Tropical Medicine & Hygiene* [2], *Memorias do Instituto Oswaldo* [1] *Cruz,* and *Infection & Drug Resistance* [1]) did not offered major

variations in text format, discursive styles, and authoring strategies, being all open to public access guaranteed by their digital publisher (*BioMed Central*, *DovePress*, and/or *PLOS-One*, through *Creative Commons Attribution License*).

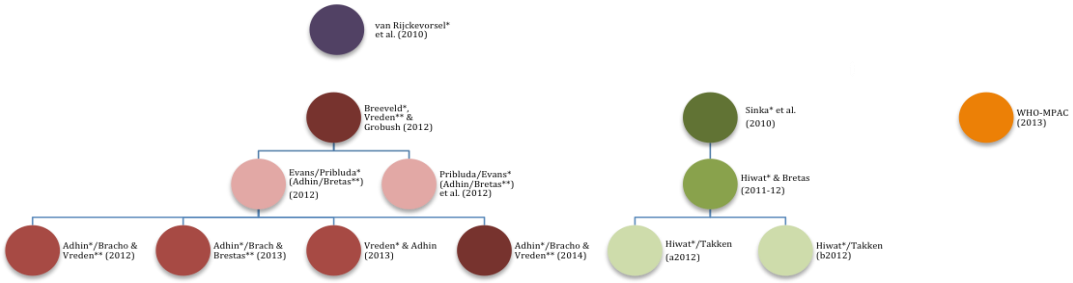
(2) The reports were formatted in two types of discursive styles, all rooted in an anti-malaria narrative, namely: as a literary/historical review or description of medical treatments and campaigns over the diseased populations or areas, or typically as the presentation of scientific researches and findings.

(3) Most reports, but not all, relied on graphics and statistic tables to present the results, with special emphasis on: the strategic use of maps of Suriname or of the region; and/or statistic tables and descriptions referring to the pharmaceutical/chemical/genetic properties and specimens analyzed in laboratory; although demonstrating a poor use of 'keywords' identifiers–only 5 out of 13 had offered 'keywords.'

(4) In their majority, the reports followed up a distinctive authoring pattern in relation to the case of malaria in Suriname and the region on the basis of scientific, but also key political and institutional rapports, starting up with the early entomological research launched in the Hiwat & Bretas's piece, in 2011, and evolving toward a greater topic complexity and authoring maneuvering with foci on enterprising anti-malaria campaigns, featuring pharmaceuticals, and biogenetical approaches, and including key representatives from global, regional, and Surinamese health sector–both, public and privates–with universities and research units playing a central role in producing synergies around anti-malaria endeavors from inside and outside Suriname.

(5) More concretely, two grouping patterns around authors' research became visible within the analyzed material: one evolving from H. Hiwat's authored pieces– entailing: ***Report #1***, ***Report #3***, ***Report #4***, and ***Report #9***–in which entomological and pro-anti-malaria campaigning approaches can be identified; and another research criteria evolving from S. Vreden, G. Bretas, and M. Adhin, all three present in one way or another in the rest of the pieces published from 2012 to 2014 (except for: the ***Report #2***, contextualized in the Netherlands; and ***Report #11***, authored by WHO-MPAC) , and supporting more contentious perspectives regarding diagnosis, determination, and treatment protocols for specific diseased populations and areas in connection with Surinamese mining/border areas. (See ***Figure 1***.)

Figure 1: The Evolvement of Different Anti-Malaria Narratives Styles within the Examined Reports;

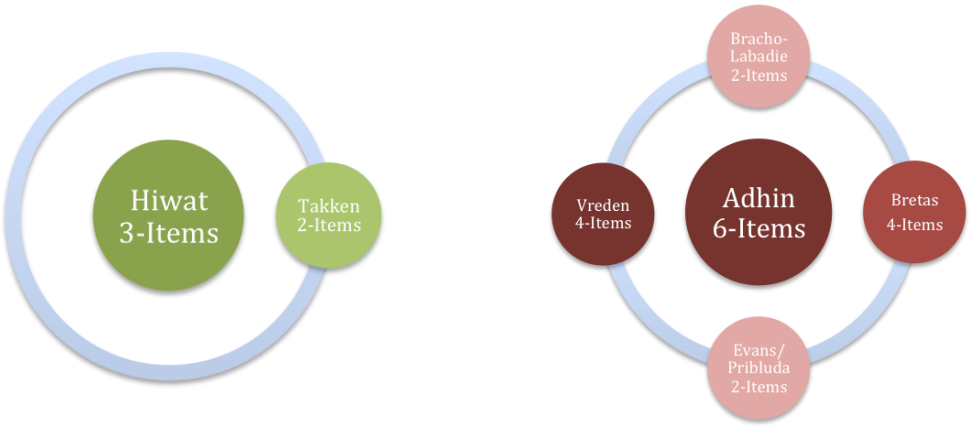


(6) Another salient feature in this sections is associated to the 'country of origin,' authoring, founding sources, and research foci yielded the following patterns: (a) cases studies with focused on Suriname tended to problematize endemics in

mining/border communities; (b) the different reports did not agree on precise geographical categories beyond anti-malaria posts and labs location, without precision on specific areas and communities, except for clarifications provided in ***Report #9***; and (c) the lack of or poor references to explain broader social and political forces, as well as indications about the specific roles of national and international agencies.

(7) Finally, the category of 'audiences' revealed an important pattern: Hiwat's reports (entailing three reports) seemed to address anti-malaria campaign's planners and entomological research community; meanwhile, Vreden-Adhin-Bretas' pieces (encompassing seven reports) seemed interested in attaining the attention of private and public health-decision makers, pharmaceutical investors, and global health industries. (See ***Figure 2***.)

Figure 2: Number of Reports in Relation to Authoring Patterning: First Grouping, H. Hiwat and W. Takken; Second Grouping S. Vreden, M. Adhin, and G. Bretas.



In its functional level, the *coding matrix* reported important patterns in connection with the potential and actual articulations of *biopolitical configurations* within the examined texts. Accordingly to the four types of markers, the text analysis indicated:

(1) Although all reports evidenced some type of biopolitical mark in their discursive strategies, not every report can be judged as holder of an accurate or structured model of *biopolitical configuration*.

(2) Regarding ***Table 3***, 8 out of 13 reports showed positive evidence of developing *biopolitical configurations* leading to some kind of political subjection and social wrong, with the remaining cases presenting negative results –***Report #1***, ***Report #3***, and ***Report #9***– or did not promptly applied as classified the row of 'Set-C'–***Report #2*** and ***Report #11***.

(3) ***Table 3*** also indicates that some negative cases, although possessing evident marks of biomedicalization, medical enclosure, or even the four types of markers, not necessarily their narrative evolved into *biopolitical configurations*, requiring appropriate rhetoric articulations and author's readiness to produce subjectification: e.g., in Hiwat & Bretas (***Report #3***), the marker '***imported malaria***' is employed once, but not further developed neither in Hiwat's and nor even in Bretas's pieces.

Table 3. Number and Distribution of Reports by Period (Year), According to Findings

Period	Positive Evidence	Negative Evidence	Other Type of Evidence	Total Rp./Per.
P-2010	-	*Report #1*	*Report #2*	*2 Reports*
P-2011	-	*Report #3*	-	*1 Reports*
P-2012	*Report #4* *Report #5* *Report #6* *Report #7* *Report #8*	*Report #9*	-	*6 Reports*
P-2013	*Report #10* *Report #12*	-	*Report #11*	*3 Reports*
P-2014	*Report #13*	-	-	*1 Reports*
Total Rp./Evic e	*8 Reports*	*3 Reports*	*2 Reports*	***13 Reports***

(4) Considering the markers in relation to the designated 'social wrong' in ***Table 4***, the most referenced social process within the texts is 'biomedicalization (with 19 markers),' followed by 'stigmatization' (14 markers), 'enclosure' (13 markers), and 'concealment/erasure' (12 markers), all which indicated: (a) 'biomedicalization' constituted an central trope in current anti-malaria narratives on Surinamese case studies, specially visible in Vresen-Adhin-Bretas's pieces as an attempt to biomedicalize malaria in Suriname; (b) that 'stigmatization' and, in less proportion, 'concealment/erasure' constituted key markers for determining if an anti-malaria narrative actually developed *biopolitical configurations*; and (c) that markers related to 'enclosure' became significantly important in determining the problematic use of space categories in the Surinamese anti-malaria narrative, evidencing the conflict among regional ('Latin/South America,' Amazon basins), inter-border categories

(French Guiana-Suriname border, Guyana-Suriname Border, 'trans-border areas'), or even in Surinamese sovereign spate ('interior territories,' 'Maroon/Amerindian villages,' 'mining/border communities,' or 'private/informal mining areas,' *'Garimpos'*).

(5) It is relevant to indicate that the biopolitical category of concealment/erasure' requires further improvements when applied in discourse analysis, especially because the elusive nature of medical and scientific thinking when managing sociopolitical categories and historical or cultural data, besides their convenient overconfidence on the 'objectivity' of medical and scientific knowledge.

Table 4. Number of Markers per Report, According to Their Distribution by Year and Set.

Report	M-S Stigmatizat.	M-C Concealment/ Erasure	M-B Biomedicaliz.	M-E Enclosure	Evid.	Total M/Rep.
Report #1	1	1	1	1	Neg	*4*
Report #2	3	1	1	1	*	*6*
Report #3	-	-	-	1	Neg	*1*
Report #4	2	3	2	3	Pos	*10*
Report #5	2	4	2	1	Pos	*9*
Report #6	2	1	3	1	Pos	*7*
Report #7	-	-	3	2	Pos	*5*
Report #8	1	1	2	1	Pos	*5*
Report #9	-	-	1	-	Neg	*1*
Report #10	1	1	2	1	Pos	*5*
Report #11	(1*)				*	-
Report #12	1	-	1	1	Pos	*3*
Report #13	1	-	1	-	Pos	*2*
Total M/Cat.	*M-S: 14*	*M-C: 12*	*M-B: 19*	*M-E: 13*		***M: 58***

Finally, the 'semantic level' of this discourse analysis over anti-malaria narratives targeting Surname's malaria. In this part, three aspects are considered for interpreting the alleged biopolitical meanings behind the reports: the 'report's focus,' the 'statement interplays/connections' presented in the form of a comment on the findings provided by the previous the markers identification, and the final 'positive/negative assessment' on evidence of political subjectivation in the examined health/disease discourse. According to these, results declare:

(1) All the excerpts taken from each sample offer in a quite simple way the nature and purpose or orientation of each report. The most salient aspect after reviewing these excerpts are the consistent correlation in presenting malaria with a sort of 'evil agency' coinciding with positive results in the final evidence assessment–especially in terms of 'drug-resistance,' 'predominance,' 'risk,' 'informal,' 'propagation,' 'illegality,' or any other marker related to danger or menace against a sanitary condition entangled with the national interest, economic development, or biogenetic/pharmaceutical emergency. The excerpts allow the critical reader capturing the rhetorical strategy with which the anti-malaria *genre* discursively conjures up the troublesome disease's agency.

(2) The part of 'statement interplays/connections' and 'Evidence of health/disease subjectivation' are critical in determining how most of the texts, particularly considering the diagnosis and treatment of malaria in Suriname, shifted dramatically from a 'vector-centered' anti-malaria narrative to a 'man-made malaria,' with focus on mining/border social group. This relevant change of pattern implied no only assuming an increasing biomedicalized interventions–mainly pharmaceutical and biogenetical–

but particularly in invoking a sort of 'state-of-emergency' by assuming that criminalized and pathologized social groups represent the source of endemic malaria in the now sanitized Surinamese territory, especially enforced by markers of concealment/erasure: 'the elimination of malaria,' 'successful campaigns,' 'imported malaria,' or 'burden malaria.' Additionally, it worth noticing that in this part most of the Vreden-Adhin-Bretas's anti-malaria narratives were embedded in a larger political economy of the disease, always exposed to an audience composed of health-decision leaders and global health investors, as proved in the WHO-MPAC's reports (***Report #11***) in whose case a global authoritative voice dismissed allegations of existence of 'drug-resistance malaria' in Suriname.

(3) Finally, as assessed in the 'Evidence' section, it was possible to appreciate how most of the reports produced or relied on biased claims tending to biomedicalize malaria by disguising authors' own agency–in the form of institutional power or economic interests–behind political subjection and exclusion, overly exercised upon the poor and the marginalized subjects, historically and contemporarily left out by the failed post-colonial transitioning of the current Surinamese state.

Interpreting Results from a Biopolitical Perspective

When looking at the results after applying the *coding matrix* to 13 medical reports, the evidence suggests important patterns confirming the articulation of *biopolitical configurations* within the biomedical anti-malaria narrative sampled from the examined material. It seems that the examined anti-malaria narratives from texts sampling in case

studies of malaria in contemporary Suriname, indicates the presence of important forms of political subjection and exclusion by resorting to biomedicalized health/disease discourses. In order to appropriately interpret these results, they will be worked out through three analytic aspects, namely: (1) a 'Time-Evolving Features; (2) a 'Discourse/Subject Formation Perspective'; and, finally, a (3) 'Critical/Biopolitical Criterion.'

(1) *Time-Evolving Features*: The most salient aspect that offers the results is its fast-paced evolvement pattern. According to the collected evidence at the 'material level' of the discourse analysis, the rapid evolvement of a biomedicalized anti-malaria research-agenda–framed in a time period of four years–makes evident that a post-colonial anti-malaria narratives in Suriname constitutes itself quite a recent and fast-growing discursive and social phenomenon. Although the rapid spring of biomedicalized research activities devoted to prove outbreaks of contagious 'drug-resistance malaria' among mining/border communities caught large national and international interest, such rapid-growing interest seems not to match with an actual attempt to solve the long data malaria crisis in the mining/border regions, instead, problematizing it. Endorsed by important researchers from the biomedical community in Suriname and outstanding medical figures from different countries representing global health institutions, all reports issued between 2012 and 2014 proved to focused on extensive biomedicalization processes, even including the early dichotomy between the Hiwat-Takken research group and the Vreden-Adhin-Bretas research group. More concretely, in a short term of three years, the second group managed to get involved in important anti-malaria medical research projects with international

visibility, funded directly and indirectly from pharmaceuticals and international development projects with open neoliberal stance, a process akin to the international health articulations denounced by M. Cueto in chapter one. It is also telling the WHO-MPAC's official position in ***Report #11***, in its role as a global health-decision maker, from where it dismissed in 2013 the rapid results with which the Vreden-Adhin-Bretas research group was building an intense biomedicalized anti-malaria research agenda for Suriname. Their last report, ***Report #13*** (Adhin et al., 2014), can be taken as a representative evidence of a strong disposition to keep on with this research agenda pathologizing mining/border population by relying on an allegedly genetic evidence of 'drug-resistance malaria,' a research project developed out of the studied population's social and political context.

2) *Discourse-Subject Formation Perspective*: From a discourse/subject formation perspective, it is relevant to notice how most of this anti-malaria reports rely on an poorly defined endemic subject, mostly situated in a marginal space, lacking assertive explanations of the social and historical context from where this populations emerges, in addition to the fact of being held responsible for current malaria propagation and even mutation. Malaria is represented within this medical narrative as a disease now a 'man-centered' disease in which endemic subjects are profiled as passive infectious populations whose embeddedness in an informal economic activity or illegal status turns them sources of disease, as proposed in all Vreden-Adhin-Bretas research group's reports. From this perspective, it seems manifest how medical anti-malaria narrative in Suriname rapidly emerged in the last four years as a new and growing discursive *genre* mainly relying on biomedicalized literature and a-historic endemic

subjects; a narrative that unfolds upon their tainted human biologies, without awareness on their historic marginal social, political, and cultural condition.

(3) *Critical/Biopolitical Viewpoint*: From a biopolitical perspective, the results help rising some understanding on the contentious claim of 'man-made malaria,' as the background notion for designing and unfolding extensive anti-malaria initiatives and campaigns as that described by Hiwat et al. (2012) in ***Report #4***. As held in chapter 3, following Fairclough and Wodak's ideas on the importance of CDA: contemporary social reality builds upon an extensive culturally reflexivity, 'conceptually mediated.' Disciplinary and normalizing discourses as that produced by the medical establishment are not embedded in state-systems, but also in dynamic international political economies, constituting themselves key sources for reaffirming the state sovereignty, political spatialization, legal/sanitized identities, and urbanized areas. Considering the biomedicalized revamping of anti-malaria narratives, it seems that a 'biopolitics of malaria' has emerged again, producing new forms of stigmas on and enclosures over allegedly endemic non-urban populations. Although all reports coincide in portraying malaria as a dangerous disease, they also coincide in viewing malaria as a disease challenging emerging Surinamese modern-state, and this is probably the reason why anti-malaria actions are not addressed against the biology of the vector-disease, but in targeting endemic non-urban populations whose colonial and contemporary history remains untold. From this perspective, as critically proposed in the historical review of the chapter 2, ongoing anti-malaria narratives can even today derive in revamped instrument of the emerging Suriname's post-colonial modern-state.

CONCLUSIONS

"641 (1888-1888): A multiplicity of forces, connected by a common mode of nutrition, we call 'life.' To this mode of nutrition, as a means of making it possible, belong all so-called feelings, ideas, thoughts; i.e., (1) a resistance to all other forces; (2) an adjustment of the same according to form and rhythm; (3) an estimate in regard to assimilation and excretion."

Nietzsche, *The Will to Power*.

In this research work it is assumed that some anti-malaria narratives can become biopolitically configured discourses intended to interpret health and disease with specific intents to health-decision instances and other biomedical communities, hence, turning it into a sensitive process with actual effects on the life condition of vulnerable social groups. As a biopolitical discourse, thus, certain anti-malaria narratives have the capacity to subjectify some populations beyond an allegedly diseased or sanitary condition. From a discourse analysis approach, on the other hand, these anti-malaria discourses are produced and displayed in formatted 'statement/events' modeled after the interests of biomedical industries, like pharmaceuticals or global funding, as proposed in Cueto and Conrad's critiques on biomedicalization of malaria and society (Cueto, 2013; Conrad, 2005). And as evidenced in the present case study, this biomedicalization of anti-malaria discourses has been found operative in the context of contemporary post-colonial Suriname, in which their biomedical subjectivation capacity of mining/border

communities seem to be entangled with unsolved colonial legacies and ongoing structural violence.

Traditionally treated as a borne-vector disease set in endemic Amazonian territories of the Dutch empires, and nowadays redefined as the margins of the Surinamese state, the contemporary anthropogenic transformation of malaria into a 'man-made disease' in Suriname holds unjustly responsible informal gold mining communities and historical border villagers, as a contentious economic activity historically driven in the forest territories, first, under a Dutch-colonial status, and then, under the effect of a contentious state modernization in interplay with new global players. After the examination of a set of anti-malaria medical reports issued from 2012 to 2014, and authored by a controversial medical research unit identified as 'Vreden-Adhin-Bretas'–holding 7 out of 13 reports–it can be affirmed that the ongoing anthropogenization of malaria inappropriately portrays this old disease over the allegedly targeted populations. Whereas it is inexorably true that much of the most recent behavioral changes and generic mutations in vector-borne diseases like malaria–which also entails other vector-disease family in alarming grow like zika, chikunguya, and Dengue–are due to the impact of man's presence and nature-exhausting economic activities in this area, it is not true at all the way some current anti-malaria narratives designate mining/border populations as the focus or 'sources' of malaria. By relying on a poorly supported idea of 'imported malaria' taken from a colonial-biased discourse used by Dutch public health institutions (evidenced in ***Report #2***-"Declining incidence of imported malaria in the Netherlands, 2000-2007"), most of the subsequent Surinamese-based research papers attempted to hold true malaria's

condition as an 'imported disease' in today's Suriname (***Report #3***-"Ecology of *Anopheles darlingi* Root with respect to vector importance: a review," ***#4***-"Novel strategies lead to pre-elimination of malaria in previously high-risk areas in Suriname, South America," and ***#13***-"Gold mining areas in Suriname: reservoirs of malaria resistance"), in addition to alleged mutating qualities (***Report #5***-"History of Malaria research and its contribution to the malaria control success in Suriname: a review," ***#8***-"Status of potential *Pf*ATP6 molecular markers for artemisinin resistance in Suriname," ***#10***-"Molecular Surveillance as Monitoring Tool for Drug-Resistant *Plasmodium falciparum* in Suriname," ***#12***-"Evidence of an increased incidence of day 3 parasitaemia in Suriname: an indicator of the emerging resistance of *Plasmodium falciparum* to artemether" and ***#13***-"Gold mining areas in Suriname: reservoirs of malaria resistance"), brought in to Suriname by neighboring tainted subjects, carrying out informal economies, or just by endemic dwelling the forest. Such assumptions are defined here as typically biopolitical constructs, built on the basis of a biased 'public health ideologies' that wrongly portrays this populations as unsanitary and illegal subjects in contemporary post-colonial Suriname. A critique based on Charles Briggs and Clara Martini-Briggs' work (2003) with focus on the case of cholera outbreaks in Venezuela's Orinoco basins, in the 1990s, where the authors denounced the problematic ways how emerging modern states imagine their social subjects by contrasting homogeny legal/sanitized citizens *versus* illegal/unsanitary subjects and, hence, misrepresenting them in a distorted medical account of social reality upon which health decisions are medically produced and institutionally managed (Briggs & Martini-Briggs, 2003:318).

Therefore, by drawing on a set of analytical categories proposed as *biopolitical configurations*, it was sought in this work to approach the problematic nature of emerging anti-malaria narratives entangled with the failed post-colonial transitioning experienced in contemporary Suriname. With focus on the field of medical anthropology, and by relying on a Critical Discourse Analysis framework to depict medical texts, it was possible to observe the formation of contentious health/disease discourses of malaria during an actual short period of time–in less than five years–confirmed in the sudden biomedicalization of anti-malaria narratives, and supported with other author's strategies like institutional partnering and the use of biomedical facts for producing those reports. More interesting, these authoring strategies evidence the building of an important network of relevant national and global health-decision institutions as well as biomedical industries totally active behind the current biomedicalization of malaria, namely: Pan American Health Organization, United Stated Agency for International Development (USAID), Amazon Malaria Initiative (AMI), la Red Amazonica de Vigilancia de la Resistencia a los Antimalaricos (RAVREDA), Amazon Malaria Initiative, United States Pharmacopeia (USP), the Ministry of Health of Suriname, the Malaria Board of Suriname, Academic Hospital of Paramaribo, University of Suriname, etc. In this line of facts, it was also proved how most of these medical reports, in advocating for a rapid biomedicalization of malaria in Suriname, were always conceived to address health-decision makers and global pharmaceutical investors not only as evidenced in the actual accounts and textual markers, but also by observing their institutional interaction with other anti-malaria narratives, like that yielded by the World Health Organization - Malaria Policy Advisory Committee–in ***Report #11***-"Malaria Policy Advisory Committee

to the WHO: conclusions and recommendations of March 2013 meeting"–in which disagreement came out after the 'Vreden-Adhin-Bretas' research unit claimed holding genetic evidence of 'drug-resistance malaria.'

Another salient pattern in the findings consisted in the lack of interest among the biomedical community responsible for these anti-malaria narrative, in providing any explanation in regard of the historical background, political context, or the social conditions that pushed these populations to make a living on informal mining, for in crossing the Surinamese borders, or just by dwelling in the borders or in the forest. Furthermore, the anti-malaria biomedical community responsible for producing the examined medical reports seems to neglect the relevance of these social facts. As noticed by Price in his critical view of human rights violation contemporary Suriname:

"And in summer 1992, the head of physician at the French hospital of St. Laurent (just over the border with Suriname), who has treated sick Maroons routinely for years there, described to me his shock, during a medical inspection he and a team of specialists had made to monitor the medical situation of Paramaribo, at the 'utter disdain' shown by urban, educated Surinamers–including physicians and public health officials–for Maroons. 'They see them,' he said, 'as the lowest of the low, as hardly human, and they firmly believe the French have been spoiling the Maroons on their side of the river.'" (Price, 2010:60).

From this contentious comment, it can be assumed that the recent biopolitization of malaria in Suriname obeys to a revamping of colonial practices now carried out by the nation-state, a process that has implied a reengineering of malaria by problematizing, first, the disease as a national risk, and then inducing an anthropogenization of the disease

exercise over unwanted national subjects. In this context, it would be possible for the global biomedical complex to get positioned and control new anti-malarials markets, as proposed in ***Reports #6***-"Quality of anti-malarials collected in the private and informal sectors in Guyana and Suriname" ***and #7***-"Implementation of basic quality control tests for malaria medicines in Amazon Basin Countries: results for the 2005-2007," in which exclusive rights for selling and distributing state-licensed drugs overlap with the reterritorialization of Suriname as a troubled modern-state.

In sum, after critically examining anti-malaria narratives in search of *biopolitical configurations*, by applying Critical Discourse Analysis as an ethnomethodology to understand cultural change in contemporary modernity, it was possible to make legible actual forms of exclusion, inequality, and structural violence against marginalized populations in Suriname in certain health/disease discourses. As a young nation still transitioning a post-colonial period, Suriname constitutes as an interesting case study for observing emerging trends in biomedicalization of malaria as a result of a larger and still problematic process of state formation within which legacies of violence endures in the form of stigmatization and exclusion of border peoples like Maroons, Amerindians, and most recently illegal immigrants. Furthermore, this entangling sociocultural phenomenon of exclusion and social erasure through health/disease discourses results critical for understanding how Latin American politicians and intellectual communities lack categories for including or explaining the complexity of the Suriname, as a non-traditional post-colonial society, and the Guyanese region as liminal space itself where the 'politics of life'–biopolitics–becomes compromised by ongoing colonial tights.

APPENDICES

APPENDIX 1: ***Coding-Matrix*** **MODEL**

<table>
<tr><td colspan="5">REPORT #: Year / SET-#</td></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>:

<u>Publisher</u>:

<u>Date Public.</u>:

<u>Area/Field/Topic</u>:

<u>Keywords</u>:

<u>Graphic Repres. Data</u>:

<u>Audience</u>:</td><td colspan="2"><u>Number of Authors</u>:

<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>:

<u>Main Countries Involved</u>:

<u>Authors' Networking Strategy</u>:

<u>Intended Audiences</u>:</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>M-S#1: (…)

M-S#2: (…)</td><td>M-C#1: (…)

M-C#2: (…)</td><td>M-B#1: (…)

M-B#2: (…)</td><td>M-E#1: (…)

M-E#2: (…)</td></tr>
<tr><td></td><td>Total/Markers–S: #</td><td>Total/Markers–C: #</td><td>Total/Markers–B: #</td><td>Total/Markers–E: #</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpt</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">(Excerpt)</td><td colspan="2"><u>Findings</u>:
(Notes)

Evidence of Political Subjection on the Basis of an Anti-Malaria Discourse:

<u>Negative/Positive</u>: (Comment).</td></tr>
</table>

APPENDIX 2: Applying the *Coding Matrix*

Period 2010: Two Reports

<table>
<tr><th colspan="5">REPORT #1: 2010 / SET-D</th></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "The dominant Anopheles vectors of human malaria in the Americas: occurrence data, distribution maps and bionomic precis"
<u>Publisher</u>: Parasite & Vectors / BioMed Central
<u>Date of Publication</u>: 16 August 2010
<u>Area/Field/Topic</u>: Malaria – Medical Research
<u>Keywords</u>: No Mentioned (Bionomics; Occurrence/Distribution; Atlas Project))
<u>Graphic Representation of Data</u>: 9 tables of statistics; 1 map of the American Hemisphere, highlighting Endemic Regions in Central and South America.
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution)</td><td colspan="2"><u>Number of Authors</u>: 10
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: M.E. Sinka*,A. Patil, W.H. Temperley, P.W. Gething, Th. Van Boeckel, S. Hay–Spatial Ecology & Epidemiology Group, Oxford University.
<u>Main Countries Involved</u>: UK
<u>Networking Strategy</u>: No further connections.
<u>Intended Audiences</u>: Anti-Malaria campaign's planners and managers; malaria medical-research community (entomology).</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>M-S#1: dominant vector species (DVS) of human malaria (Sinka et al., 2010:Abstract;2).</td><td>M-C#1: occurrence database/records (Sinka et al., 2010:Abstract;2;6).</td><td>M-B#1: bionomics of vector's history and behavior, or vector-human interaction (Sinka et al., 2010:Abstract;2;7;12-19;20).</td><td>M-E#1: integral vector management (IVM) or distribution map of occurrances (Sinka et al., 2010:Abstract;2;3;9).</td></tr>
<tr><td></td><td>Total/Markers–S: 1</td><td>Total/Markers–C: 1</td><td>Total/Markers–B: 1</td><td>Total/Markers–E: 1</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpts</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">" An increasing knowledge of the global risk of malaria shows that the nations of the Americas have the lowest levels of Plasmodium falciparum and P. vivax endemicity worldwide, sustained, in part, by substantive integrated vector control. To help maintain and better target these efforts, knowledge of the contemporary distribution of each of the dominant vector species (DVS) of human malaria is needed, alongside a comprehensive understanding of the ecology and behavior of each species" (Sinka et al., 2010:Abstract).</td><td colspan="2"><u>Findings</u>:
All contents are modeled after an ecological vector-centered analysis. However, much of the content of this report will be used later on as referential material on the building of a Surinamese anti-malaria narrative.

Evidence of Political Subjection through Anti-Malaria Discourses:
<u>Negative</u>: The report exclusively focuses on an entomological analysis of vector behavior, although much of the entomological models will be further used to endure the idea of enclosure in endemic areas humanly inhabited, and mainly associated with the terms of 'occurrences.'</td></tr>
</table>

REPORT #2: 2010 / SET-C

MATERIAL LEVEL

Overall Data:

Title: "Declining incidence of imported malaria in the Netherlands, 2000-2007"
Publisher: Malaria Journal / BioMed Central
Date Public.: 28 October 2010.
Area/Field/Topic: Malaria - Medical Research
Keywords: N/M (Surveillance; Chemoprophilaxis; Imported Malaria)
Graphic Repres. Data: 2 tables of statistics; 6 tables of graphic statistics.
Audience: Official Open Access (licensed by *Creative Commons Attribution*)

Authoring Strategy:

Number of Authors: 9
Author/Institution Proxy (Principal/s*)(key figures)**: MG.G.C. van Rijckevorsel*, G.J.B. Sonder, R.B. Geskus, R. Ligthelm, L. Visser, M. Keuter, P. van Genderen, A. van den Hoek–*Public Health Service Amsterdam, Department of Disease Amsterdam/Malaria Working Group of Nat. Coord. Center for Traveller's Health Advice Amsterdam/Academic Medical Center.*
Main Countries Involved: The Netherlands
Authors' Networking Strategy: No further connections.
Intended Audiences: Dutch health-decision makers; malaria medical-research community (entomology).

FUNCTIONAL LEVEL

Markers–S

M-S#1: ***'Imported malaria'*** (van Rickevorsel et al., 2010:*Abstract*).

M-S#2: ***'Travelers/immigrants visiting friends or relatives'; 'VFR imports'; 'travelers visiting malaria endemic countries'; 'unprotected travelers'*** (van Rickevorsel et al., 2010:*Abstract*).

M-S#3: ***'Ethnic origin'*** (van Rickevorsel et al., 2010:*5*).

Total/Markers–S: 3

Markers–C

M-C#1: '***Importation of malaria'*** accompanied with 'region of infection' and 'reason for travel' (van Rickevorsel et al., 2010:*Abstract;3;5*).

Total/Markers–C: 1

Markers–B

M-B#1: ***'Malaria chemoprophylaxis'*** and ***'data on malaria chemoprophylaxis description'*** (van Rickevorsel et al., 2010:*Abstract;2;10*).

Total/Markers–B: 1

Markers–E

M-E#1: ***'National surveillance data'*** program launched by National Institute for Public Health and the Environment (RIVM); Malaria Working Group of the Dutch National Coordination Centre for Travelers' Health Advice (LCR) (van Rickevorsel et al., 2010:*Abstract*).

Total/Markers–E: 1

SEMANTIC LEVEL

Report's Focus: Excerpt

"To describe the epidemiology and trends of *imported malaria* in the Netherlands from 2000 through 2007" (van Rijckervorsel et. al., 2010:*Abstract*).

Statement Interplays/Interconnections:

Findings:
It is provided an exhaustive profiling of malaria-infected subjects, distinguishing among Dutch and non-Dutch subjects traveling abroad.
Extensive focus on health/disease surveillance techniques and databases is examined in this piece.
IMPORTANT: the term 'drug-resistant' or 'resistant parasite' in relation to malaria is not used in this report.

Evidence of Political Subjection through Anti-Malaria Discourses:

Positive–but no directly related to Suriname:
There is strong evidence of use of **health/disease subjectivation** on the basis of metropolis/periphery relations, and in regard of national sanitary enclosure.

Period 2011: One Reports

<table>
<tr><th colspan="5">REPORT #3: 2011 / SET-D</th></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "Ecology of Anopheles darlingi Root with respect to vector importance: a review"
<u>Publisher</u>: Parasite & Vector / BioMed Central
<u>Date Public.</u>: 16 September 2011
<u>Area/Field/Topic</u>: Malaria Data Review
<u>Keywords</u>: N/M (Anopheles darlingi; vector behavior; America/Amazon ecology)
<u>Graphic Repres. Data</u>: 1 map (same used in Item '2010/#1/Set-4').
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution)</td><td colspan="2"><u>Number of Authors</u>: 2
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: H. Hiwat* (Laboratory of Entomology, Wageningen University/Malaria Program, Ministry of Health in Suriname) & G. Bretas** (No identified his connection to any institution in this piece).
<u>Main Countries Involved</u>: The Netherlands and Suriname.
<u>Authors' Networking Strategy</u>: Both authors will appear latter in controversial viewpoints, but moving away (*)(**) from each other, with different approaches regarding malaria treatments.
<u>Intended Audiences</u>: Anti-Malaria campaign's planners and managers; Surinamese health-decision makers; malaria medical-research community (entomology).</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>Not Found</td><td>Not Found</td><td>Not Found</td><td>M-E#1: Vectorial Capacity (Hiwat & Bretas, 2011:Abstract;5).</td></tr>
<tr><td></td><td>Total/Markers–S: 0</td><td>Total/Markers–C: 0</td><td>Total/Markers–B: 0</td><td>Total/Markers–E: 1</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpt</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">"This paper aims to provide information on the importance, ecology and behavior of Anopheles darlingi. It reviews publications that addressed ecological and behavioral aspects that are important to understand the role and importance of An. darlingi in the transmission of malaria throughout the area of distribution" (Hiwat & Bretas, 2011:Abstract).</td><td colspan="2"><u>Findings</u>:
The report focuses on a literary review (both historical and narrative) of an entomological analysis of malaria vector. Not special vocabulary, terminology, designation, or evidence of an elaborate anti-malaria genre is evident in this report, in contrast with the previous two reports. IMPORTANT: There are not references to the terms 'imported malaria,' 'drug-resistant' or 'resistant parasite' yet that allows thinking in further connections with future independent works of Hiwat or Bretas.
Evidence of Political Subjection through Anti-Malaria Discourses:
<u>Negative</u>: There is no evidence of use of health/disease subjectivation. Its vector-centered perspective makes evidence of an anti-malaria narrative still unfolded from the disease's biology.</td></tr>
</table>

Period 2012: Six Reports

<table>
<tr><td colspan="5">REPORT #4: 2012 / SET-A</td></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "Novel strategies lead to pre-elimination of malaria in previously high-risk areas in Suriname, South America"
<u>Publisher</u>: Malaria Journal / BioMed Central
<u>Date Public.</u>: 9 January 2012.
<u>Area/Field/Topic</u>: Malaria - Case Report
<u>Keywords</u>: Malaria control; Suriname; Insecticide-treated nets; Pre-elimination.
<u>Graphic Repres. Data</u>: 1 map of Suriname indicating actual sites of entomological surveillance; 2 tables of statistics; and 1 table of graphic statistics.
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution).</td><td colspan="2"><u>Number of Authors</u>: 4
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: H. Hiwat* and L. Hardjopawiro, (Malaria Programme, Min. Health Suriname, Bureau of Public Health Suriname); W. Takken** (Lab. of Entomology, Wageningen Univ.) L. Villegas (International Public Health Advisor, Paramaribo)
<u>Main Countries Involved</u>: Suriname and The Netherlands.
<u>Authors' Networking Strategy</u>: During the making of this report, Hiwat seems to be attained an official position as health-decision maker, and this article shows her approaching strategy to international players and anti-malaria experts.
<u>Intended Audiences</u>: Anti-Malaria campaign's planners and managers; Surinamese health-decision makers.</td></tr>
<tr><td rowspan="3">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>M-S#1: 'Malaria transmission risk shift from the stabile village communities to the mobile gold mining communities' (Hiwat et al., 2012:Abstract).

M-S#2: 'Gold miners illegal status': "The gold miners, about 15,000 people, generally do not seek malaria treatment due to their illegal status and/or the high local transportation costs"(Hiwat et al., 2012:10).</td><td>M-C#1: 'The challenge is to further reduce malaria using the available strategies' (Hiwat et al., 2012:Abstract).
M-C#2: 'Population of the interior' or 'Surinamese human migration' are designations described in social and economic, but not historical or political terms (Hiwat et al., 2012:2).
M-C#3: 'Imported malaria': Today, malaria cases reported from the interior are almost all originating from gold mining areas (...). Many of the recent malaria patients in the country work in gold mining areas in French Guiana, but seek diagnosis and treatment in Suriname (imported malaria)" (Hiwat et al., 2012:2).</td><td>M-B#1: Medical Mission Malaria Programme (MM-MP) and its 'Interventions' as the system for the prevention, vector control, case management, (human) behavioral change communication (BCC)/ information, education and communication (IEC), and strengthening of health system (surveillance, monitoring and evaluation, and epidemic detection) (Hiwat et al., 2012:Abstract;2;4-8).

M-B#2: 'Black market of anti-malarial and other drugs' in Gold mining communities (Hiwat et al., 2012:5;10).</td><td>M-E#1: 'Intelligent surveillance' as detection and response to epidemics (Hiwat et al., 2012:5;8).

M-E#2: 'Gold mining populations most at risk for malaria' and 'eastern border region with French Guiana' as 'high risk areas' (Hiwat et al., 2012:5;10).

M-E#3: 'malaria-free Suriname' as a Surinamese government's strategic plan (Min.of Health and Nat. malaria Board) to 'eliminate malaria in 2020 (Hiwat et al., 2012:5;10).</td></tr>
<tr><td>Total/Markers–S: 2</td><td>Total/Markers–C: 3</td><td>Total/Markers–B: 2</td><td>Total/Markers–E: 3</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpt</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">"In the current paper, the MM-MP is evaluated both on account of the targets established within the programme and on account of its impact on the malaria situation in Suriname. Malaria vector populations, monitored in sentinel sites, collapsed after 2006 and currently the number of national malaria cases decreased from 8,618 in 2005 to 1,509 in 2009. Malaria transmission risk shifted from the stabile village communities to mobile gold mining communities, especially those along the French Guiana Border." (Hiwat et all., 2012:Abstract).</td><td colspan="2"><u>Findings</u>: The report carries out a dramatic shift of discourse, from a 'vector-oriented' analysis to a 'man-made disease' perspective, showing a seemingly narrative digression when changing from describing a successful anti-malaria program ('MM-MP'), to targeting a 'emerging' infectious population from economic activities (mining/imported malaria).
The 'MM-MP' programme presents an important overlapping of anti-malaria campaigns and political spatialization of Suriname's sovereign territory.
It uncritically profiles 'interior populations' (Maroons, Amerindians, and 'Garimpeiros') (Hiwat et al.,2012:2).
IMPORTANT: No reference to malaria drug-resistance.

Evidence of Political Subjection through Anti-Malaria Discourses:
<u>Positive</u>:
This report is critical in offering an emerging 'man-made disease' perspective regarding malaria in Suriname, with few but significant marks of health/disease subjectivation on the basis of an articulated anti-malaria narrative.</td></tr>
</table>

REPORT #5: 2012 / SET-A

MATERIAL LEVEL

Overall Data:

Title: "History of Malaria research and its contribution to the malaria control success in Suriname: a review"
Publisher: Malaria Journal / BioMed Central
Date Public.: 29 March 2012.
Area/Field/Topic: Malaria Data Review.
Keywords: Artemisinin-based combination therapy, Control, Elimination, Eradication, Gold mining, Malaria Resistance, Suriname.
Graphic Repres. Data: 1 graphic scheme of control/elimination operation; 1 table of graphic statistics.
Audience: Official Open Access (licensed by *Creative Commons Attribution*)

Authoring Strategy:

Number of Authors: 3
Author/Institution Proxy (Principal/s*)(key figures)**: F. Breeveld*(*Center for Tropical Medicine and Travel Medicine, Dept. of Infectious Disease, Univ. of Amsterdam*); S. Vreden** (*Academic Hospital of Paramaribo*); and M. Grobusch (*Institute of Tropical Medicine, Univ. of Tubingan*)
Main Countries Involved: Netherlands, Suriname, & Germany.
Authors' Networking Strategy: S. Vreden will appear again in the reports '2012/#5/Set-1' and '2014/#1/Set-1', with contentious arguments around malaria's genetic mutation and resistance.
Intended Audiences: Anti-Malaria campaign's planners and managers; International health funding sectors; & pharmaceutical investors; International/Surinamese health-decision makers.

FUNCTIONAL LEVEL

Markers–S	***Markers–C***	***Markers–B***	***Markers–E***
M-S#1: '***Gold mining industry workers'*** (Breeveld et al., 2012:*Abstract*). **M-S#2**: '***Malaria burden'***: "Paul Flu, Professor of Tropical Hygiene and Parasitology and director of the Institute of Tropical Medicine in Leiden, the Netherlands (...) In one of his reports of a research trip to Suriname, he stated that one of the main reasons why Suriname could not bloom at that time, despite its natural resources and possibilities, was the continuous burden of malaria, disabling people in its most productive years (Breeveld et al., 2012:3).	**M-C#1**: ***Malaria reduction in Suriname:*** 'internationally awarded achievement' and 'a successful story' (Breeveld et al., 2012:1). **M-C#2**: ***Malaria 'elimination' in Suriname as a health policy:*** (Breeveld et al., 2012:1). **M-C#3**: ***'Historical background'***: "The first malaria in Suriname was most likely imported through enslaved people shipped from western Africa around 1620. In the following years, many missionaries died from symptoms typical for '*malaria tropica*' (Breeveld et al., 2012:2). **M-C#4**: '***Conflict disruption'***: (Breeveld et al., 2012:3).	**M-B#1**: ***Anti-malarials' types and use, and 'Drug-Resistance':*** 'artemisinin-based combined therapy' (ACT); chloroquine and DDT; rapid diagnostic test (RDT); "The decision to make the switch to an ACT (...) was in accordance with WHO recommendations. It proves to be highly effective at this stage, the questionis for how long this will bee the case in view of first hints at emergin artemisinin resistance from South-East Asia" (Breeveld et al., 2012:*Abstract*;4). **M-B#2**: '***National Malaria Board'***: Installed in 1995: 'It consists of representatives from the Ministry of Health, Ministry of Regional Affairs, Ministry of Defense, the Bureau of Public Health, Malaria Medical Missions, NGOs (Breeveld et al., 2012:4).	**M-E#1**: '***Malaria burden in border regions,'*** between Suriname and French Guiana along the Maroni river (Breeveld et al., 2012:*Abstract*;2).
Total/Markers–S: 2	*Total/Markers–C: 4*	*Total/Markers–B: 2*	*Total/Markers–E: 1*

SEMANTIC LEVEL

Report's Focus: Excerpt

- "Knowledge of historical developments in malaria research and epidemiology in Suriname can provide guidance for future, and possibly other countries, too" (Breeveld et al., 2012:1).

Statement Interplays/Interconnections:

Findings:
Biased and nationalist historical accounts on anti-malaria programs development, evidencing colonial legacies and their connection with contemporary global/local anti-malaria campaigns, are abundant in this report.
The 'drug-resistance malaria' question is introduced in the Surinamese anti-malaria narrative with this report, becoming a recurrent topic in next reports in spite of no actual evidence in Suriname or the region, but most importantly, triggering a new age of biomedicalization of malaria assumed as a potential drug-resistant parasite in the marginal *social body*.

Evidence of Political Subjection through Anti-Malaria Discourses:

Positive:
There is strong evidence of a use of **health/disease subjectivation** on the basis of a biased and colonial account of malaria evolution in Suriname, besides an invisibilization of critical contemporary social, political, and economic issues in the country, and in addition to introducing a biomedical agenda in the coming anti-malaria actions and narratives.

REPORT #6: 2012 / SET-B

MATERIAL LEVEL

Overall Data:

Title: "Quality of anti-malarials collected in the private and informal sectors in Guyana and Suriname"
Publisher: Malaria Journal / BioMed Central
Date Public.: 15 June 2012.
Area/Field/Topic: Malaria - Medical Research
Keywords: N/M (Interior endemic areas, formal/informal economic operations, circulating anti-malarials medicine)
Graphic Repres. Data: 1 map of sampling sites in Guyana; 1 map of sampling sits in Suriname; 1 table of pharmaceutical analytical methods; 1 statistics table.
Audience: Official Open Access (licensed by *Creative Commons Attribution*)

Authoring Strategy:

Number of Authors: 14
Author/Institution Proxy (Principal/s*)(key figures)**: L. Evans III/V. Pribluda and research team* (*Promoting the Quality of Medicines Programs, U.S. Pharmacopeia/USAID*) (+N. Ceron**–*Pan American Health Organization–Guyana*); G. Bretas** (*Pan American Health Organization–Ecuador*); M. Adhin** (*Univ. of Suriname*).
Main Countries Involved:
Authors' Networking Strategy: Ceron, Bretas, and Adhin will remain active in future reports, together and independently, but all three supporting a biogenetization of malaria in Suriname.
Intended Audiences: Anti-Malaria campaign's planners and managers; International health funding sectors; pharmaceutical investors; Guyana-Suriname health-decision makers; malaria medical-research community (pharmacology).

FUNCTIONAL LEVEL

Markers–S	***Markers–C***	***Markers–B***	***Markers–E***
M-S#1: ***Private vs. Informal economic sectors:*** "availability of therapy not compliant with national treatment guidelines (Evans III et al., 2012:*Abstract*). **M-S#2**: ***'Itinerant behavior of people inhabiting the hinterland regions (indigenous peoples, miners, and loggers)':*** as conductive to risky self-medication and purchasing from alternative sources (Evans III et al., 2012:*Abstract*;6).	**M-C#1**: ***'Quality issues':*** licensed vs. non-Licensed anti-Malarials (Evans III et al., 2012:*Abstract*;3).	**M-B#1**: ***Anti-Malarials availability,'*** understood as 'risk of access to medicines' among the private and informal sectors of gold mining and logging (Evans III et al., 2012:*Abstract*). **M-B#2**: ***'Assessing access to anti-Malarials and epidemiological data,'*** rending the informal sector accountable for the distribution and source of non-licensed medicine (Evans III et al., 2012:4-5). **M-B#3**: ***'Training and sampling'*** for tracking non-licensed and smuggled anti-malarials (Evans III et al., 2012:2)	**M-E#1**: ***The 'quality of circulation of anti-malarial medicine,'*** in the interior of Guyana and Suriname, especially in mining and logging areas (Evans III et al., 2012:*Abstract*).
Total/Markers–S: 2	*Total/Markers–C: 1*	*Total/Markers–B: 3*	*Total/Markers–E: 1*

SEMANTIC LEVEL

Report's Focus: Excerpt

"The findings of the study in both countries point to significant problems with the quality of anti-malarial medicines available in private and informal sector facilities as well as the availability of therapy not compliant with national treatment guidelines" (Evans III et al., 2012:*Abstract*).

Statement Interplays/Interconnections:

Findings:
With a focus on pharmaceutical assessment of anti-malarial medicines, and its formal/informal access as a key problem, this report evidences the impactful biomedicalization of malaria in Suriname and Guyana: firstly, by criminalizing non-licensed circulating anti-malarials; and secondly, exalting state power by standardizing medicine guidelines to avoid allegedly drug-resistant malaria propagation.

Evidence of Political Subjection through Anti-Malaria Discourses:

Positive:
There is strong evidence of **health/disease subjectivation** as the question of formal/informal access to anti-malarial medicine, if not adequately 'regulated' by the state, may result in the 'risk of drug-resistant malaria' in areas related to this informal sector (mining and logging), endorsing the thesis of a 'man-made disease' by blaming this marginal population.

<table>
<tr><th colspan="5">REPORT #7: 2012 / SET-D</th></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "Implementation of basic quality control tests for malaria medicines in Amazon Basin Countries: results for the 2005-2007"
<u>Publisher</u>: Malaria Journal / BioMed Central
<u>Date Public.</u>: 15 June 2012.
<u>Area/Field/Topic</u>: Malaria - Medical Research
<u>Keywords</u>: N/M (Quality of basic control tests, Promotion of Quality of Medicine programme, country-specific protocols, portable mini-lab)
<u>Graphic Repres. Data</u>: 4 descriptive tables.
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution)</td><td colspan="2"><u>Number of Authors</u>: 25
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: V. Pribluda/L. Evans III and international research team* (Promoting the Quality of Medicines Programs, U.S. Pharmacopeia/USAID/Pan Amer. Health Org.: Colombia, Bolivia, Brazil, Venezuela, Morocco) (+N. Ceron**–Pan Amer. Health Org.–Guyana); G. Bretas** (Pan Amer. Health Org.–Ecuador); M. Adhin** (Univ. Suriname).
<u>Main Countries Involved</u>: Pan American Collision.
<u>Authors' Networking Strategy</u>: (view previous report)
<u>Intended Audiences</u>: Anti-Malaria campaign's planners and managers; International health funding sectors; pharmaceutical investors; International health-decision makers; malaria medical-research community (pharm.).</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>N/F</td><td>N/F</td><td>M-B#1: 'The Promotion of Quality of Medicines (PQM) programme' or 'quality monitoring programmes' for the treatment of malaria under supervised and control conditions (Pribluda et al., 2012:Abstract;1).
M-B#2: 'Trained personnel' for the application of basic tests, and the visual and physical inspection of licensed, manufactured and labeled medicines (Pribluda et al., 2012:Abstract).
M-B#3: The production of regular 'Medicine Quality Assessment Reporting Guidelines' as integral part of anti-malaria medical assessment (Pribluda et al., 2012:1).</td><td>M-E#1: The articulation of 'National Malaria Control Programmes' (NMCP) and countries' 'Official Medicine Control Laboratory' (OMCL) for the development of country-specific protocols that encompass sampling methods, sample analysis, and data reporting in the national territory (Pribluda et al., 2012:Abstract).

M-E#2: 'Sampling methodologies in the field' in preparation for performing inspection and application of basic tests (Pribluda et al., 2012:3-4).</td></tr>
<tr><td>Total/Markers–S: 0</td><td>Total/Markers–C: 0</td><td>Total/Markers–B: 3</td><td>Total/Markers–E: 2</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Paraphrases</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">The quality of anti-malarial medicines as a concern in developing countries entangled with limited human and financial resources and allegedly required quality assurance and quality control on tests and medicines applications (Pribluda et al., 2012:1).</td><td colspan="2"><u>Findings</u>:
This piece evidences the sudden formation, preparation, and introduction of anti-malarials markets among the Amazonian basin's countries. The main strategy displayed centered in enforcing national enclosures for the circulation of licensed medicines and test application, constraining malaria treatment to a commodified pharmaceutical industry.

Evidence of Political Subjection through an Anti-Malaria Discourses:
<u>Positive</u>:
Although this report does not present markers of stigmatization or concealment/erasure, instead, it endures a health/disease subjectivation by reducing anti-malaria narrative to an intense pharmaceutical biomedicalization of the disease.</td></tr>
</table>

REPORT #8: 2012 / SET-A

MATERIAL LEVEL

Overall Data:

Title: "Status of potential *Pf*ATP6 molecular markers for artemisinin resistance in Suriname"
Publisher: Malaria Journal / BioMed Central
Date Public.: 11 September 2012.
Area/Field/Topic: Malaria - Medical Research
Keywords: N/M (Genetic polymorphism; artemisinin resistance; Suriname)
Graphic Repres. Data: 2 tables of labs/pharmaceutical application protocols.
Audience: Official Open Access (licensed by *Creative Commons Attribution*)

Authoring Strategy:

Number of Authors: 3
Author/Institution Proxy (Principal/s*)(key figures)**: M. Adhin* (*Faculty of Medicine, Dept. of Biochemistry, Univ. Suriname*); M. Labadie-Bracho** (*Institute for Biomedical Science, Paramaribo*); S. Vreden** (*Academic Hospital of Paramaribo*).
Main Countries Involved: Suriname.
Authors' Networking Strategy: Adhin & Labadie-Bracho and Vreden are here authoring their first report together in support of a 'drug-resistant malaria' thesis in Suriname.
Intended Audiences: Anti-Malaria campaign's planners and managers; pharmaceutical investors; International health-decision makers; malaria medical-research community (pharmacology/biogenetics).

FUNCTIONAL LEVEL

Markers–S

M-S#1: ***The use of 'Counterfeit-Drugs (non-licensed anti-malarials)'*** among mining/border populations, *via* smuggling, is presented as part of the Surinamese malaria parasite's genetic mutations (Pribluda et al., 2012:2).

Total/Markers–S: 1

Markers–C

M-S#1: ***The mutation statement behind 'artemisinin resistance' and 'DNA analysis***: The presentation of genetic mutation coming from French Guiana's samples taken from allegedly mining/border people (Pribluda et al., 2012:2).

Total/Markers–C: 1

Markers–B

M-B#1: ***'Polyphormism analysis of*** **Plasmodium falciparum** ***parasites in Suriname'*** as a way to prove genetically the existence of artemisinin resistance in Suriname's malaria by mutation (Pribluda et al., 2012:*Abstract*).

M-B#2: ***'Parasite resistance'***: biogenetization of malaria in Suriname after compering it with proven resistance development of malaria parasite in South-Eastern Asia (Pribluda et al., 2012:1-2).

Total/Markers–B: 2

Markers–E

M-E#1: ***'active trans-border migration'*** as cause of circulating non-licensed medicines and the emergence of genetic mutations (Pribluda et al., 2012:2).

Total/Markers–E: 1

SEMANTIC LEVEL

Report's Focus: Excerpt

"Since 2004, the use of artemisinin combination therapy (ACT) was introduced as first-line treatment of the uncomplicated malaria cases in Suriname. The aim of this research was to determine changes in Suriname in the status of the polymorphic markers in the *PfATP6* gene before and after the adoption of the adoption of the ACT-regime, particularly of the S769N mutation, which was reported to be associated with *in vitro* Artemether resistance in the neighboring country French Guiana." (Adhin et al., 2012:*Abstract*).

Statement Interplays/Interconnections:

Findings:
By referring to the cases of resistant malaria parasites in South-Eastern Asia, the authors attempt to demonstrate a possible genetic mutation that took place in Surinamese samples as a consequence of French Guiana's migration and the circulation of non-licensed medicines.
In this piece, the thesis of an emerging drug-resistant malaria as a cause of 'man-made disease' turns more evident, especially in relation to marginal populations.

Evidence of Political Subjection through Anti-Malaria Discourses:
Positive:
In this report the process of **health/disease subjectivation** is biogeneticalized in order to prove an alleged contemporary mutation coming from mining/border zones, and inscribed in the bodies of immigrants from French Guiana, ignoring a long history of social, cultural, and ecological communalities.

REPORT #9: 2012 / SET-A

MATERIAL LEVEL

Overall Data:	***Authoring Strategy:***
Title: "Collapse of *Anopheles darlingi* Populations in Suriname After Introduction of Insecticide-Treated Nets (ITNs); Malaria Down to Near Elimination Level" **Publisher**: The American Journal of Tropical Medical & Hygiene **Date Public.**: November 4, 2012. **Area/Field/Topic**: Tropical Medicine - Malaria **Keywords**: N/M (Longitudinal study of malaria in Suriname; vector behavior; decrease to pre-elimination levels; collapse of malaria vector populations; interior of the country) **Graphic Repres. Data**: 2 tables of statistics; 4 tables of graphic statistics. **Audience**: Internet Free Access, through PLOS - One Data base.	**Number of Authors**: 6 **Author/Institution Proxy (Principal/s*)(key figures**)**: H. Hiwat* (*Malaria Programme, Min. Health Suriname, Bureau of Public Health Suriname*); S. Mitro, A. Samjhawan, P. Sarjoe, & T. Soekhoe (*Entomology Dept., Bureau of Public Health, Suriname*); W. Takken** (*Lab. Entomology, Wageningen Univ.*). **Main Countries Involved**: Suriname and The Netherlands. **Authors' Networking Strategy**: Hiwat and Takken return both to an entomological perspective, detaching from and even criticizing highly biomedicalizing approaches. **Intended Audiences**: Anti-Malaria campaign's planners and managers; International health-decision makers; malaria medical-research community (Entomology/Biogenetics).

FUNCTIONAL LEVEL

Markers–S	***Markers–C***	***Markers–B***	***Markers–E***
N/F	**N/F**	**M-B#1: *'Introduction of Insecticide-Treated Nets (ITNs)'***: it is held that a community-oriented set of logistics and non-invasive anti-malarial practices may contain the disease (Hiwat et al., 2012:*Abstract*;649-650). **M-B#2: *'Parasite Collapse'***: from an entomological perspective, the research outcomes indicated that a decline in *Anopheles darlingi* population has resulted in the plumbing of malaria reported cases in interior villages (Hiwat et al., 2012:*Abstract*;649;654).	**N/F**
Total/Markers–S: 0	*Total/Markers–C: 0*	*Total/Markers–B: 1*	*Total/Markers–E: 0*

SEMANTIC LEVEL

Report's Focus: Excerpts	***Statement Interplays/Interconnections:***
In 2006, "Malaria transmission decreased to pre-elimination levels. It is concluded that the combination of ITN and the climatic events has led to the collapsed of malaria vector populations in the study sites in the interior of the country. The results are discussed in relation to the stability to malaria transmission in areas with low-density human population" (Hiwat et al., 2012:*Abstract*). Report's conclusion: 'Epidemiological data show that current malaria transmission in Suriname is specially a problem of gold mining areas. Most Maroon and Amerindian villages have been free of malaria for a number of years. (...) The challenge will be to prevent malaria transmission in the village populations and ensure that anopheline populations from elsewhere cannot become established in the former endemic zone(s). In addition, work on decreasing transmission in the mobile gold mining populations should receive high priority" (Hiwat et al., 2012:654).	**Findings**: • The markers issued above (M-B#1 and M-E#1) are not conductive to actual forms of biopolitical configurations, they are just indicating regular practices upon which anti-malaria initiative rely on or are minimally set. • Differing from the '2012/#1/Set-1' Report, Hiwat et al. have returned to the entomological thesis as in the earlier '2011/#1/Set-4' report, focusing on the vector's behavior in interaction with interior communities and supporting the thesis that a collapse of malaria vectors has actually impacted morbidity in this border area. • There is not allusion to 'drug-resistance' malaria as health issue among the potential endemic population examined in this report. • This report's conclusions challenge previous assumptions held in Breeveld et al., Evans III et al., and Pribluda et al pieces, with focus on an intense biomedicalization of malaria treatment, and a stigmatization of the different endemic populations. ***Evidence of Political Subjection through Anti-Malaria Discourses:*** **Negative**: This report avoids a **health/disease subjectivation** by returning to a community-based explanation on the basis of the regular vector-human interactions.

Period 2013: Three Reports

<table>
<tr><td colspan="5">REPORT #10: 2013 / SET-A</td></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "Molecular Surveillance as Monitoring Tool for Drug-Resistant Plasmodium falciparum in Suriname"
<u>Publisher</u>: The American Journal of Tropical Medical & Hygiene
<u>Date Public</u>: July 8, 2013.
<u>Area/Field/Topic</u>: Tropical Medicine - Malaria
<u>Keywords</u>: N/M (Translational study; molecular surveillance of genetic polymorphism; parasite drug resistance; Suriname)
<u>Graphic Repres. Data</u>: 1 statistic table.
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution)</td><td colspan="2"><u>Number of Authors</u>: 3
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: H M. Adhin* (Faculty of Medicine, Dept. of Biochemistry, Univ. Suriname); M. Labadie-Bracho** (Institute for Biomedical Science, Paramaribo); G. Bretas** (Pan Amer. Health Org.–Ecuador).
<u>Main Countries Involved</u>: Suriname (Financial Support: USAID/RAVREDA).
<u>Authors' Networking Strategy</u>: By partnering with again Adhin, Bretas endorses the thesis of a 'molecular surveillance' to treat malaria endemics.
<u>Intended Audiences</u>: Anti-Malaria campaign's planners and managers; International health-decision makers; malaria medical-research community (Entomology/Biogenetics).</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>M-S#1: 'Antimalarial drug-resistance' argument evolves here as a concealing strategy to endure a biogenetization of malaria, and avoid the entomological and community-based data (Adhin et al., 2012:Abstract;312).</td><td>M-C#1: 'Antimalarial drug-resistance' argument evolves here as a concealing strategy to endure a biogenetization of malaria, and avoid the entomological and community-based data (Adhin et al., 2012:Abstract;312).</td><td>M-B#1: 'Molecular Surveillance': "The introduction of molecular monitoring in Suriname will ensure a minimal evidence base to guide timely optimization of national treatment policy to achieve continued effectiveness of antimalarial treatment' (Adhin et al., 2013:Abstract; 312).
M-B#2: Treatment regimes and health-decision making: according to the 'polymorphic' analysis of malaria genes, it is provided a reliable periodic molecular survey that renders legible the parasite from potential mutation, which is assumed as an important determinant in anti-malaria initiative (Adhin et al., 2013:Abstract; 314).</td><td>M-E#1: Building a post-colonial metropolis/periphery relation: "The regions with the highest malaria transmition are Sipaliwinin and Brokopondo. Only 9.8% of the population lives in the interior in small Maroons and Amerindian settlements, but people at risk for malaria infection substantially increased since 1990s, because small golding activities in the interior attracted about 15,000 miners, mostly Brazilians and French Guianese" (Adhin et al., 2012:Abstract;312). Genetic differences coming from different geographic areas (allegedly fron Franch Guiana and Brazil) are supposedly found among the samples (Adhin et al., 2012:314).</td></tr>
<tr><td>Total/Markers–S: 1</td><td>Total/Markers–C: 1</td><td>Total/Markers–B: 2</td><td>Total/Markers–E: 1</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpt</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">"The aim of this translational study was to show the use of molecular surveillance for polymorphisms and copy number as a monitoring tool to track the emergence and dynamics of Plasmodium falciparum drug resistance. (...) After 5 years, 40 samples were assessed to trace temporal changes in the status of pfmdr1 polymorphisms and copy number and showed minor genetic alterations in the pfmdr1 gene and no significant changes in copy number, thus proving scientific support for the prolongation of the current drug policy in Suriname." (Adhin et al., 2013:Abstract).</td><td colspan="2"><u>Findings:</u>
In this report, Adhin et al. intensified the mostly unintelligible biogenetical language by reducing Surinamese malaria to a microbiological field of surveillance striving against the possibility it becomes a drug-resistance menace. On the other hand, the authors keep steadily stigmatizing and profiling mining/border populations as groups infected with potential drug-resistance parasite without final conclusions.
Evidence of Political Subjection through Anti-Malaria Discourses:
<u>Positive</u>:
A steady attitude to resort to a health/disease subjectivation is evident in the over geneticalization of malaria treatments under the label of 'molecular surveillance.'</td></tr>
</table>

REPORT #11: 2013 / SET-C*

MATERIAL LEVEL

Overall Data:

Title: "Malaria Policy Advisory Committee to the WHO: conclusions and recommendations of March 2013 meeting"
Publisher: Malaria Journal / BioMed Central
Date Public.: 20 June 2013.
Area/Field/Topic: Meeting Report / WHO - Global Malaria Programme;
Keywords: WHO, Malaria, Policy making, Treatment efficacy, Fever, Surveillance, Standards, Mosquitos control, Malaria vaccines, Resource allocaiton, Disease elimination, Pregnancy, Prevention. (Special apart devoted to Guyana & Suriname.)
Graphic Repres. Data: No graphic data.
Audience: Official Open Access (licensed by *Creative Commons Attribution*)

Authoring Strategy:

Number of Authors: Global Committee/Consortium – 15 members (no related to previous/future reports here viewed).
Author/Institution Proxy (Principal/s*)(key figures)**: World Health Organization - Malaria Policy Advisory Committee and Secretariat.
Main Countries Involved: Switzerland.
Authors' Networking Strategy: No connections between the
Intended Audiences: Guyanese-Surinamese Anti-Malaria campaign's planners and managers; pharmaceutical sector; Guy-Sur health-decision makers; malaria medical-research community (Pharmacology/Biogenetics).

FUNCTIONAL LEVEL

Standard Markers:

M#1: health-decisions in international policy-making on *'drug resistance'* in Guyana and Suriname:
"Therapeutic efficacy monitoring is an essential step in preventing the emergence of artemisinin resistance. When it last met in June 2012, and during its update to MPAC in September 2012, the Drug Resistance and Containment Technical Expert Group (DRC-TEG) recommended that, although there was at the time no evidence of artemisinin resistance outside the Greater Mekong sub-Region [South-East Asia], nonetheless surveillance on ACT efficacy outside the sub-Region should continue and be identified. It encourages consultations with the DRC-TEG by WHO-Global Malaria Programme whenever new data raise concerns. (...) *MPAC concluded that it cannot be determined if signal of possible resistance is real or an artifact from technical problems*" (WHO-MPAC, 2013:2-3) (*Italic*-shaped phrases is ours).

Total/Markers–S: 0	*Total/Markers–C: 0*	*Total/Markers–B: 0*	*Total/Markers–E: 0*

SEMANTIC LEVEL

Report's Focus: Excerpts

- "The Malaria Policy Advisory Committee to the World Health Organization met in Geneva, Switzerland from 13 to 15 March, 2013. This article provides a summary of the discussions, conclusions and recommendations from that meeting. Meeting sections include: a review of the efficacy of artemisinin-based combination therapy in Guyana and Suriname (...). Policy statements, position statements, and guidelines that arise from the MPAC meeting conclusions and recommendations will be formally issued and disseminated to World Health Organization Member States by the World Health Organization Global Malaria Programme" (WHO-MPAC, 2013:*Abstract*).

Statement Interplays/Interconnections:

Findings:

Different from previous reports, this piece is approached in a different perspective: as a health-decision outcome yielded by an international instance such as WHO.

Although integral part in the building of an anti-malaria narrative or *genre*, a biopolitical understanding of this discourse operates differently, requiring a different analytical treatment, and most probably a total different model, given its distinctive rhetoric style and discursive purpose.

For a contrasting purpose, nonetheless, it is of great value identifying in this work how *biopolitical configurations* are processed, discussed, and contested in international political arenas, and more specifically, coming from a supra-state actor.

In this case, as a legitimizing international actor, the MPAC-WHO seems to dismiss the evidence presented in favor of the 'drug-resistant malaria' thesis, proposed by biomedicalized approach to the malaria question in Guyana and Suriname.

Evidence of Political Subjection through Anti-Malaria Discourses:

N/A:

It just evidenced that the social process of yielding **health/disease subjectivation** is more complex when upraised to a much more politicized global arena, in which *biopolitical configurations* are built upon much more complex scientific and political reasoning.

REPORT #12: 2013 / SET-A

MATERIAL LEVEL

Overall Data:	*Authoring Strategy:*
Title: "Evidence of an increased incidence of day 3 parasitaemia in Suriname: an indicator of the emerging resistance of *Plasmodium falciparum* to artemether" **Publisher**: *Mem Inst Oswaldo Cruz* (Brazil)-USAID/AMI, RAVREDA **Date Public.**: December 2013. **Area/Field/Topic**: Malaria - Medical Research **Keywords**: artemether; artemisinin resistance; *Plasmodium falciparum*; day 3 parasitaemia; Suriname. **Graphic Repres. Data**: 2 schema representing case studies; 2 statistics tables. **Audience**: Official Open Access (licensed by *Creative Commons Attribution*)	**Number of Authors**: 4 **Author/Institution Proxy (Principal/s*)(key figures**)**: S. Vreden* (*Foundation of Scientific Research, Suriname*); J. Jitan (*Min. of Health, Suriname*), R. Bansie (*Dept. Internal Medicine, Univ. Suriname*); M. Adhin** (*Faculty of Medicine, Dept. of Biochemistry, Univ. Suriname*) **Main Countries Involved**: Suriname (Financial Support: USAID/AMI/RAVREDA). **Authors' Networking Strategy**: **Intended Audiences**: Anti-Malaria campaign's planners and managers; International/Suriname health-decision makers; malaria medical-research community (Pharmacology/Biogenetics).

FUNCTIONAL LEVEL

Markers–S	*Markers–C*	*Markers–B*	*Markers–E*
M-S#1: ***'Precluding effect' of migrating populations and gold miners on anti-malarial tests and research***: "Ideally, patients should be treated in an experimental hospital setting where they receive artemisinin monotherapy, e.g., artesunate, for seven days, followed by the administration of an additional drug, e.g., mefloquine. However, this approach may not be feasible for studying emerging resistance in mobile populations" (Vreden et al., 2013:968).	**N/F**	**M-B#1:** ***'Malaria parasitaemia'*** becomes a key medical category in Vreden et al.'s piece (2013) as an attempt to monitor parasite's life in the human body, bringing the medical gaze to a microbiological dimension, and establishing the need for imposing clinical regimes over the diseased patient.	**M-E#1:** ***'Human/malaria parasites mobility in mining/border areas as the cause of disease spread'***: "The study population in 2005/6 included people from rural villages in the interior of the country; therefore, the malaria parasites in the gold miners may not differ from those in individuals from the villages because the patients in both studies resided in the same geographical area along the French Guiana-Suriname border. The mobility of these small gold mining communities can further increase the spread of malaria" tations (Vreden et al., 2013:972).
Total/Markers–S: 1	*Total/Markers–C: 0*	*Total/Markers–B: 1*	*Total/Markers–E: 1*

SEMANTIC LEVEL

Report's Focus: Excerpt	***Statement Interplays/Interconnections:***
• "The emerging resistance to artemisinin derivatives that has been reported in South-East Asia led us to assess the efficacy of artemether-limefantrine as the first line therapy for uncomplicated *Plasmodium falciparum* infections in Suriname. The drug assessment was performed according to the recommendations of the World Health Organization in 2011. The decreasing number of malaria cases in Suriname, which are currently limited to migrating populations and gold miners, precludes any conclusions on artemether efficacy because adequate number of patients with 28-days follow-up data are difficult to obtain. (...)The significantly increased incidence of parasite persistence on day 3 may be an indication of emerging resistance to arthemeter" (Vreden et al., 2013: *Abstract*)	**Findings:** • In the present report, and regarding WHO-MPAC recommendations, the authors focus on the genetic features of malaria in support of the 'drug-resistance malaria' thesis. • In contrast with Hiwat et al.'s specific considerations of the examined population ('2012/#6/Set-1'), this report approach all mining and border people without considering social and cultural differences, as evidence above in the M-E#1. • As well, the category of 'parasitaemia' emerges as a key medical device for transferring the malaria disease to a microbiological level in the problematized mining/border population. ***Evidence of Political Subjection through Anti-Malaria Discourses:*** **Positive**: A **health/disease subjectivation** is performed in a problematized relation human/parasite relation according to a microbiological stance and laboratory regime, in search of evidence for 'drug-resistant' malaria.

Period 2014: One Report

<table>
<tr><td colspan="5">REPORT #13: 2014 / SET-A</td></tr>
<tr><td rowspan="2">MATERIAL LEVEL</td><td colspan="2">Overall Data:</td><td colspan="2">Authoring Strategy:</td></tr>
<tr><td colspan="2"><u>Title</u>: "Gold mining areas in Suriname: reservoirs of malaria resistance"
<u>Publisher</u>: Infection & Drug Resistance / Dovepress
<u>Date Public.</u>: 2014.
<u>Area/Field/Topic</u>: Malaria - Drug Resistance
<u>Keywords</u>: Plasmodium falciparum, gold mining, mutation frequency, Suriname.
<u>Graphic Repres. Data</u>: 1 map of sampling sites in Suriname (mining areas & villages); 1 statistics table.
<u>Audience</u>: Official Open Access (licensed by Creative Commons Attribution)</td><td colspan="2"><u>Number of Authors</u>: 3
<u>Author/Institution Proxy (Principal/s*)(key figures**)</u>: H M. Adhin* (Faculty of Medicine, Dept. of Biochemistry, Univ. Suriname); M. Labadie-Bracho** (Institute for Biomedical Science, Paramaribo); S. Vreden** (Academic Hospital of Paramaribo).
<u>Main Countries Involved</u>: Suriname (Financial Support: USAID/RAVREDA).
<u>Authors' Networking Strategy</u>:
<u>Intended Audiences</u>: Global/Suriname Anti-Malaria campaign's planners and managers; Suriname health-decision makers; malaria medical-research community (Pharmacology/Biogenetics).</td></tr>
<tr><td rowspan="2">FUNCTIONAL LEVEL</td><td>Markers–S</td><td>Markers–C</td><td>Markers–B</td><td>Markers–E</td></tr>
<tr><td>M-S#1: 'Malaria resistance reservoirs': as a paroxysmal category, more political than medical, for classifying populations and spaces infected with drug-resistant malaria: "The illegal nature of activities, alongside the increased migration of persons in and out of gold mining sites, a deficient or absent health care infrastructure, poor housing, and lack of compliance with national treatment policies have been known to increase the incidence of malaria and might promote emergence of drug resistance. (Adhin et al., 2014:112).</td><td>N/F</td><td>M-S#1: The overstated argumentation on 'Drug resistance malaria' in support of intense biomedicalized monitoring and surveillance of malaria: "The historical rapid spread of antimalarial drug resistance and the slow development of new drug resistance to replace artemisinin dictate close monitoring of antimalarial drug resistance" (Adhin et al., 2014:112).</td><td>(Related to M-S#1)</td></tr>
<tr><td>Total/Markers–S: 1</td><td>Total/Markers–C: 0</td><td>Total/Markers–B: 1</td><td>Total/Markers–E: 0</td></tr>
<tr><td rowspan="2">SEMANTIC LEVEL</td><td colspan="2">Report's Focus: Excerpt</td><td colspan="2">Statement Interplays/Interconnections:</td></tr>
<tr><td colspan="2">•"At present, malaria cases in Suriname occur predominantly in migrants and people living and/or working in areas with gold mining operations. A molecular survey was performed in Plasmodium falciparum isolates originating from persons from gold mining areas to assess the extent and role of mining areas as a reservoirs of malaria resistance in Suriname" (Adhin et al., 2014:Abstract). (Whole italic-shaped phase is ours.)</td><td colspan="2"><u>Findings:</u>
•By relying on the same microbiological/biogenetical discourse as in previous reports ('2012/#2/Set-2'; '2012/#4/Set-4'; '2013/#1/Set-1'; '2012/#5/Set-1'; and '2013/#3/Set-1'), in this report Adhin and Vreden stress a contentious assertion: regarding allegedly generic evidence, endemic populations and spaces in Suriname must be considered drug-resistant malaria 'reservoirs,' a term employed here in pathogenically sense, and implying not only stigmatization on the accused endemic population (miners and border people), but also implying clear forms of medical, legal, and economic enclosure in relation with their identities, their labor activities, or living condition.
•This report may constitute the most significant example of a biased 'anti-malaria narrative' regarding its formation and development among a specific medical-scientific community in this country.
Evidence of Political Subjection through Anti-Malaria Discourses:
<u>Positive</u>:
This reports evidence a strong process of health/disease subjectivation based on an intense biomedicalization and stigmatization of mining/border population in Suriname.</td></tr>
</table>

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