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**Medicine in the Margins:  
Access, resistance and health care utilization among the Tuareg of Niger**

**A Thesis Submitted to the  
Yale University School of Medicine  
in Partial Fulfillment of the Requirements for the  
Degree of Doctor of Medicine**

**by  
Teeb Al-Samarrai  
2006**

## Abstract

“MEDICINE IN THE MARGINS: ACCESS, RESISTANCE AND HEALTH CARE UTILIZATION AMONG THE TUAREG OF NIGER” *Teeb Al-Samarrai (Sponsored by Naomi Rogers). Section of the History of Medicine, Associate Professor, Yale University School of Medicine, New Haven, CT.*

This thesis explores the historical, cultural and social reasons for the wariness that the nomadic Tuareg of Niger have towards Western medicine and medical practitioners. I give a historical account of their interactions with and resistance to the French colonial administration and the postcolonial state of Niger and how this resistance to Western medicine and health clinics was an embodied form of political and social resistance to governmentality and state attempts at sedentarization. I provide historical example of when health care delivery was successful and was embraced rather than resisted as well as the ways in which the Tuareg have not only integrated Western medicines into their lives but the ways in which these often scarce medicines are distributed to the community as a whole.

I performed a systematic review of the medical, public health, and social science literature examining published and unpublished documents and doctoral dissertations on the health of the Tuareg and history of Niger. I also conducted interviews with journalists, anthropologists, humanitarian aid workers and a physician that have worked with the Tuareg in Niger.

Despite this resistance and physical remoteness there are also success stories of how trust can be achieved and health care successfully delivered to the Tuareg. This research demonstrates that even with enormous cultural, social and political resistance and under circumstances of poor infrastructure and limited resources, Western medicine is not only desired but can be delivered to remote populations. In my conclusion, I discuss the differential impact that sedentarization and recent famines have had on the way of life of the Tuareg and their access to health care.

## Acknowledgements

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This thesis did not arise de novo and stems from the dynamic and engaging environment that Ilana Gershon, PhD fostered in her wonderful Anthropology of Knowledge course. Inordinate gratitude goes to Naomi Rogers, PhD whom it was my luck to find just when I needed her and unfortunate to not have found sooner. You have been an incredible thesis advisor whose organizing and energizing influence, thoughtful, patient guidance, and enthusiastic support have been essential. Without the astute narratives and observations provided by Arianne Kirtley this thesis would not have developed. Your thorough replies to my endless queries were invaluable; your work and dedication to the Tuareg is truly inspirational.

Thanks are also due to Mark Snelling for taking time to share some of his insight and thoughts on humanitarian aid and the response to the current famine. Dr. Pascal James Imperato whose remarkable work and experiences more than three decades ago still stand as an example of how health services can be delivered to the remotest corners of the world with determination and compassion.

Dr. Kohar Jones and Sameera Fazili, I'd rather not imagine what the writing process would have been like without your friendships, insightful criticisms, support and laughter.

And of course to my family who have often wondered what exactly I do at Yale. I don't know how I could begin to thank you for your patient support, the depth of your love and understanding. You are a constant source of inspiration.

This thesis, humble as it may be, is dedicated to the Tuareg and all of those people, nomadic or sedentarized, who recognize no borders.

*“The illusion that we are separate from one another is an optical delusion of our consciousness.”*  
*Albert Einstein*

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## Introduction

*The instruction we find in books is like fire. We fetch it from our neighbors, kindle it at home, communicate it to others, and it becomes the property of all.*  
 –Voltaire<sup>1</sup>

This paper topic arose from discussions and readings in a class on the anthropology of knowledge. I was initially interested in how medical knowledge is transmitted within other medical traditions especially as I reflected on my own experiences and “apprenticeship” in medical school. This evolved into questions about how knowledge is circulated and transmitted within communities especially how knowledge of Western biomedicine interacts and becomes incorporated and utilized within a non-Western medical tradition. In order to limit the scope of this project I decided to focus on one community, that of the Tuareg in Niger. Little did I realize the complexity of the issues that would arise and the fascinating road I would be lead down in choosing to focus on this amazingly resilient and innovative people.

I began by asking what I thought were relatively straightforward questions: How does traditional medical knowledge circulate among the Tuareg? How are we to understand and situate traditional Tuareg medical knowledge upon its interaction with Western systems of biomedicine? Furthermore, how is this informed by their history and beliefs surrounding marginality or as Susan Rasmussen, an anthropologist that has studied Tuareg medical practices in the Air region of Niger, puts it, “alterity”?<sup>2</sup> How was this “new” tradition of Western medicine received, interpreted, transmitted, utilized or avoided? What was the reaction of traditional healers to it? Was it seen as an encroachment on their own practices

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<sup>1</sup> Found in *A dictionary of thoughts, being a cyclopedia of laconic quotations from the best authors, both ancient and modern*. 1891. Compiled by Tryon Edwards. New York: Cassell. p.392.

<sup>2</sup> Susan J. Rasmussen. 2001. *Healing in Community: Medicine Contested Terrains, and Cultural Encounters Among the Tuareg*. Westport, Conn: Bergin & Garvey. p. xiv

or was it welcomed? What factors mediated and affected this reaction? What was the process of interchange like? Was it one of hegemonic domination, bilateral exchange, synergism or perhaps even ostracism and rejection? How has this changed since the French colonial era when Western biomedicine was initially introduced to the present? How has the reception to Western biomedicine changed as some of the Tuareg, a traditionally nomadic peoples, have become sedentarized?<sup>3</sup> Furthermore, how has this interaction been affected or influenced by the successive famines that have blighted their way of life?

Although Voltaire was likely unfamiliar with the Tuareg, his quip which I quote above, is an apt characterization of the ways in which the Tuareg transmit healing and medicinal knowledge. This sort of shared treatment of healing serves to build trust and a sense of community among the Tuareg. Yet there is also a guarded protection of traditional medical knowledge which seems in tension with the values of and emphasis on generous sharing. This tension becomes important and plays out in interesting ways during encounters with Western medicine via the state. As Rasmussen puts it,

*“This play of healing powers—secret and protected, yet ideally shared in practice, and also indeterminate and potentially destructive—takes place at the crossroads of the self/person and moral community. Striking in these processes are ambiguity and negotiability. The boundaries between sick patient and gifted healer are fluid.”*<sup>4</sup>

There is a power dynamic inherent to medical healing practices and knowledge systems; thus it is a truism that in order to receive or obtain medicine or to be healed, an individual (or a community) must submit to authority. But also, if the dynamic between patient and healer is fluid and permeable, how is a healer defined and how is his or her authority

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<sup>3</sup> This question has been explored by others focusing on another African pastoralist community in *As Pastoralists Settle: Social, Health and Economic Consequences of Pastoral Sedentarization in Marsabit District, Kenya*. 2005. Editors, Elliott Fratkin and Eric Abella Roth. Springer: New York.

<sup>4</sup> Rasmussen 2001, p.60.



embodied and by whom? Authority does not arise in a vacuum but must be vested and entrusted, so to whom is this authority entrusted? What are the differences between the kind of authority claimed by traditional healers versus state nurses or aid agencies?

In their fiery and unrelenting resistance to state domination and authority through avoidance of health clinics and hospitals, the individual Tuareg body has become a contested terrain and a literal embodiment of this resistance. Sadly, even when Western medications or health practitioners are desired they are extremely rare, with few if any health centers and clinics in most Tuareg regions, in fact throughout most of West Africa, and even when available these health centers often lack the necessary resources and supplies to make a two days journey worthwhile. I will use examples from the literature as well as from interviews to analyze this simultaneous resistance to yet utilization of and desire for greater access to Western medicine. I will further argue that the wariness of Western medicine is more directed at practitioners because they are seen as vehicles of State control and power and that in fact, the Tuareg are eager to incorporate Western biomedicine when it is available and already do so in innovative and creative ways. However, in the absence of increased public health resources, expenditures and education especially with a vacuum of trusting relationships between nomadic Tuaregs and health practitioners, the integration of Western medicines may prove more harmful and detrimental in the long term. Although trust and confidence are as ambiguous and difficult to describe as they are to gain, I will cite historical examples in which such trust was indeed gained and the resulting impact on health care utilization by the Tuareg. In my conclusion, I will try to touch on the differential impact the recent drought and ongoing famine have had on nomadic versus sedentarized populations of Tuareg, for both, crude

measurements of nutrition, morbidity and mortality can hardly capture what can be related only in degrees of devastation. But there is also hope and practical lessons to be learned that will more adequately prepare for if not prevent such foreseeable and all too common tragedies.

### **Background**

*“The margin between social theory and the ethnography of social suffering is a space of vital liminality. It is a threshold to something new, an unoccupied no-man’s-land open for exploration. Such a liminal position can animate a critically different reflection on medicine and society, a reflection that need not accept things as they are.”<sup>5</sup>*

#### **Tuaregs**

The Tuareg are a nomadic people who are thought to originate from the Fezann region of Libya and currently inhabit the mountain ranges of Air in Niger, the Adagh in Mali, the Hoggar in Algeria, and areas along the Niger River in Niger, Mali, and Burkina Faso. The Tuareg of Niger are a people who find themselves situated in the margins of various terrains. Geographically, their population straddles both northern Africa as well as the southern Sahara. Culturally, their beliefs both medical and religious are a mixture of African and Islamic cultures and philosophies. They fiercely resisted French colonial intrusion into the Sahara between 1893 and 1917, but as the French lost economic interest in the area they also largely left the Tuareg alone or perhaps neglected the Tuareg is a more accurate depiction. As one French Lieutenant said, “It is absolutely useless to attempt to impose on these people a yoke against which they would never cease to rebel, and which, moreover, they would have the power as well as the will throw off” yet what he suggested as an alternative was to isolate them on “reserves, such as the Americans

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<sup>5</sup> Arthur Kleinman. 1995. *Writing at the Margin: Discourse Between Anthropology and Medicine*. Berkeley: University of California Press.

assign to the Redskins.”<sup>6</sup> This sort of marginalization has characterized the treatment of the Tuareg not only by the French colonial regime but also by the newly formed postcolonial nation-state of Niger as it emerged in 1960. The Tuaregs have been further marginalized as a result of the droughts of the 1960s and 1970s as they resisted state attempts at sedentarization and state secular education. The effects of this dissonance and disempowerment are still felt today and integrally related to the wariness that they have towards outsiders including government officials and development agencies.<sup>7</sup>

The Tuareg are romanticized in French colonial history more than any other ethnic group in Africa perhaps their ambiguous lineage and white skin, their status as fiery warriors who opposed European intrusions, or their way of life thought to symbolize unfettered freedom or perhaps some combination of these fascinated the French.<sup>8</sup> They are known as “the blue men,” “the people of the veil” or “the blue men of the dessert” because the indigo dye they use for their head-covering, the *tagelmust*, traditionally worn by Tuareg men not women, can turn the skin of the wearer a bluish hue. The word Tuareg is not a self-referential term and is thought to be derived from Arabic though its true meaning and significance is contested. The Tuareg refer to themselves as the *Kel Tamajaq* (or *Tamashek*) or the “People who speak *Tamajaq*” and their language,

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<sup>6</sup> Lieutenant Hourst. 1899. *French Enterprise in Africa: The personal narrative of Lieut. Hourst of his Exploration of the Niger*. Tr. Nancy Bell. New York: E.P. Dutton & Co. p. 210.

<sup>7</sup> As one Tuareg man said, “I grew up seeing all this, and in my youthfulness I took a really, really strong hatred. In those years an incredible grave obligation fell upon us. It was they who owned us, like hostages. All young people of my age in that period had the same hatred, the same sentiment of being re-colonized, and that caused a great feeling of hate in us.” Interviewed by Baz Lecoq. 2004. Unemployed Intellectuals in the Sahara: The *Teshumara* Nationalist Movement and the Revolutions in Tuareg Society. *International Review of Social History Popular Intellectuals and Social Movements: Framing Protest in Asia, Africa, and Latin America*. Ed. M. Baud and R. Rutten. Supplement 12: 87-109, p. 90.

<sup>8</sup> They in fact kept forty-three explorers from reaching Timbuktu between 1588-1853 until the German Heinrich Barth and the Scottish Mungo Parks navigated the Niger river. Baz Lecoq described the French fascination with the Tuareg because they were seen as “epitomizing nomadic freedom and chivalry in an orientalist fashion, led French colonial administrators to endeavour to ‘conserve’ their way of life.” *Ibid.*, p.89; for an example of this see Lieutenant Hourst’s account, p.199-249.

*Tamajaq*, is a dialect of Berber and their written script is called *tifinagh*. They are neither Arab nor black in features and their origin is a source of much mythmaking and conjecture. Some historians trace them linguistically and through migrations to the Mycenaeans, the ancient Egyptians or groups from the Aegean Sea Region, their language is thought to be related to an ancient Phoenician/Libyan language and they are often classified as Berbers.<sup>9</sup> It is currently believed that the ancient Garamantians of Libya, represented in Saharan rock art, are probably their most direct ancestors.<sup>10</sup> Perhaps partly due to the increasing inter-marriage between Tuareg nobles and black Africans and former slaves who have become culturally incorporated into Tuareg society as well as a revitalization of a nationalist movement, the Tuareg prefer to be recognized as a culture rather than an ethnic group and all individuals, regardless of occupation or social origin, who speak *Tamajaq*, identify themselves as Tuareg.<sup>11</sup>

Historically Tuareg society has been characterized by social stratification primarily into nobles, slaves (or descendants of slaves), and smiths or artisans but these hierarchies are disappearing as slavery is now illegal and as more Tuareg become sedentarized.<sup>12</sup> Though a discussion of this is beyond the scope of this paper and is tangential to it, it is necessary to note that there is a complex set of dynamics, interactions, and kinship

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<sup>9</sup> Henri Lhote. 1955. *Touaregs du Hoggar*; Michael Brett and Elizabeth Fentress. 1996 *The Berbers*, cited in Susan Rasmussen's 2001

<sup>10</sup> Ibid; Brett and Fentress; Johannes and Ida Nicolaisen. 1997. *The Pastoral Tuareg: Ecology, Culture, and Society*. London: Thames & Hudson.

<sup>11</sup> Rasmussen 2001, p.4-5. Slaves were obtained by raiding of neighboring groups but once integrated into the Tuareg community, these slaves were socially mobile and their identity was not fixed.

<sup>12</sup> Ibid; It is worth noting that there continues to be slavery in West Africa though this is the subject of intense efforts by groups such as Human Rights Watch, nonetheless slaves in Tuareg households, although decreasing in number, are historically treated as kinsfolk. Keenan; Kirtley personal correspondence.

relationships between these different groups, which have important bearings on medical practices and beliefs.<sup>13</sup>

## Niger

The postcolonial state of Niger, initially filled with much hope and economic promise, has deteriorated into a situation beyond dire. Recently ranking last (177<sup>th</sup>) in the Human Development Index and 103rd out of 106 of the least developed countries (LDCs) in the Human Poverty Index, nearly fifty years after gaining independence from France (on August 3, 1960), it is a fledgling democracy with a history marred by successive droughts and famine.<sup>14,15</sup> Situated at the heart of West Africa, Niger is approximately twice the size of Texas (1,267,000km<sup>2</sup>) with a population of approximately 12.5 million people.<sup>16</sup> This vast, poor, landlocked country, like most of the postcolonial states in Africa, its borders do not encompass one ethnic group nor is there a unifying Nigerien identity. It is surrounded by Nigeria and Benin to the south; Mali and Burkina Faso to the west; the east by Chad; and to the north by Algeria and Libya. The majority of the population is Hausa (56%), the Djerma 22%, the Fulani 8.5%, the Tuareg 8% and the Beri Beri (or Kanouri), Arab, Toubou, and Gourmantche groups comprising the remaining 5.5% of the population; 80% of the population is Muslim and the remaining 20% are a mixture of

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<sup>13</sup> For a more thorough discussion of the stratifications in Tuareg society, see Rasmussen 2001; Nicolaisen; Keenan.

<sup>14</sup> The Human Development Index is a measure of achievements in life expectancy, education, and adjusted real income. United Nations Development Program. 2005. *Human Development Report 2005*. New York: United Nations Development Program. Available at [<http://hdr.undp.org/reports/global/2005/>] last accessed on March 30, 2006.

<sup>15</sup> See Chartlick, R.B. 1991. *Niger: Personal Rule and Survival in the Sahel*. Boulder, CO: Westview Press; Decalo, S. 1989. *Historical Dictionary of Niger*, 2<sup>nd</sup> ed. Metuchen, N.J.: Scarecrow Press, Inc. For a more detailed timeline of the events leading up to the current drought and famine please see Appendix I.

<sup>16</sup> Central Intelligence Agency. 2005. *The World Fact Book 2005*. Available at [<http://www.cia.gov/cia/publications/factbook/geos/ng.html#Trans>] last accessed on March 30, 2006.

Christian and indigenous religions.<sup>17</sup> Unlike some other sub-Saharan African countries Niger has yet to experience the massive rural to urban migration and 80% of the population continues to live in rural areas with more than 60% of people living on less than \$1 per day.<sup>18</sup> The main source of income for the majority of households is rain-dependent millet production; sales of cattle and petty trade are a source of supplemental income for others. A decreased world demand for uranium, one of Niger's main exports, and the most recent drought which began in 2004 was immediately followed by a locust invasion that destroyed what remained of crops with subsequent flooding at the start of the rainy season sweeping away the livestock that many herders rely on as a source of supplementary income and status have contributed to the current famine.<sup>19</sup> For a chronology of this most recent famine, see Appendix I.

To the Tuareg every state attempt at development is seen as a threat and encroachment, often justifiably so. These attempts to control their population were doomed to failure because they did not take into account the traditional political and economic systems.<sup>20</sup>

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<sup>17</sup> Ibid.

<sup>18</sup> UNDP 2005.

<sup>19</sup> According to Keith Hart, French colonialism apposed to British Colonialism was more repressive, involving more coercion of labor which according in turn served only to “depress indigenous commercial initiative.” (44) Keith Hart. 1982. *The Postcolonial Economy of West African Agriculture*. Cambridge: Cambridge University Press; Finn Fugelstad. 1983. *A History of Niger 1850-1960*. Cambridge: Cambridge University Press

<sup>20</sup> Rasmussen 2001, p.170. One example of this is that in the 1970s, the Niger government began to increasingly encroach into the Air region as uranium and other materials were discovered and subsequently mining and extraction began. Although they are very much a minority in the general population, the Tuareg comprised much of the work force in these mines yet this in itself also became a source of marginalization. In order to work or go to school, state policies mandated that men be photographed for identification cards in which they were not allowed to wear their traditional face veil or *tagelmust*, a sign of modesty, reserve, respect and protection from malevolent spirits (especially of orifices and when traveling away from community) which is particularly strictly adhered to among the nobility. The *tagelmust* serves as a barrier or boundary without which individuals are thought to become more susceptible to malevolent spirits and *tegershet*, which is translated to mean evil eye or evil mouth—a central concept in Tuareg medical practice. The origins and reasons for the veil being worn by men rather than women is not entirely clear though Lieutenant Hourst relates an amusing and interesting explanation recounted to him by the Tuareg, p. 223-224.

Although speaking of rural farmers, Keith Hart, an economic historian of West Africa provides a highly relevant critical analysis that is applicable to the nomadic and semi-nomadic Tuareg populations of Niger as he points out,

*“Almost everything that the new states do in the name of development means the intention at least of forcing the diversity of remote rural lives into an iron grid of title documents, accounts, censuses, and tax lists—words and numbers. The fact that they are not very good at it should not blind us to the enormous social force of this confrontation: It is the essence of the process that draws West African farmers into the modern world.”<sup>21</sup>*

During a famine in 1960, the Malian government allegedly withheld food relief from nomadic Tuareg in an attempt at drawing them into towns so that they could be settled and controlled.<sup>22</sup> The politicization of food, modern medicines and aid to control and sedentarize nomads, hunter-gatherers or other groups of indigenous peoples has also been well documented in other African countries.<sup>23</sup> In the 1980s, repression of Tuareg by the Malian government drove many to find refuge in Niger. This led to a strong movement for autonomy though it wasn't until 1990 that a full rebellion began, creating a separatist/nationalist movement that spanned from 1990 to 1995. In mid-1990, an isolated Tuareg attack on Tchénoua led to massacres perpetrated by the Niger army. This marked the beginning of the Tuareg rebellion. Although there were some calls for a separate and unified Tuareg Saharan Republic, this was not necessarily desired by many of the Tuareg leaders themselves; numerous liberation fronts emerged, united and have since splintered once again.<sup>24</sup> Perhaps what is most relevant to the discussion of health care systems is the resulting 1995 Peace Pact, after which the former rebel fronts

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<sup>21</sup> Hart, p.105.

<sup>22</sup> Jean Sebastian Lecoq. 2002. *That Desert is Our Country: Tuareg rebellions and competing nationalisms in contemporary Mali (1946-1996)*. Doctoral Dissertation, University of Amsterdam.

<sup>23</sup> John Bodley. 1982. *Victims of Progress*. Menlo Park, Calif: Benjamin/Cummings.

<sup>24</sup> For a summary of these revolutionary fronts, see Lecoq 2002; Rasmussen 2001, p. 171-172.

metamorphosed into judicial and police peacekeeping forces that were entrusted with implementing the policies delineated by the Pact. What is particularly significant about these forces is that they were mostly divided along clan lines and therefore had different conceptions of the form Tuareg autonomy should take. Inevitably “many of these policies directly or indirectly affected clinics, staff, pharmacies, medicines, and traditional healers in Air.”<sup>25</sup> Although the rebellions were considered “low-intensity conflicts” and the estimated number of victims was a few thousand, nearly a quarter of a million people became refugees or were internally displaced.<sup>26</sup>

As Rasmussen notes, there is a great deal of hostility and distrust of the government by the Tuareg and they lay responsibility for the lack of medicines and supplies in rural clinics at the feet of the state. Many believe this as a purposeful attempt to punish them for their historical resistance to policies of central state control such as taxation and secular schools.<sup>27</sup> It is this process of increasing state legibility that the Tuareg are continuously resisting in one form or another, so, while they would like greater attention and more resources from the state—precisely what the rebellion was demanding and what the 1995 Peace Pact had promised to deliver—they continually distrust the state and its motives. Precisely because of the ways the state attempts to deliver health services, resistance became further embodied in an apprehension towards Western health care and health workers at times turning them further inward towards their own medical traditions and traditional healers. It is important to acknowledge the role of IMF and World Bank structural adjustment programs which lead to a devaluation of the Central African Franc

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<sup>25</sup> Ibid; and Rasmussen 2001, p.172

<sup>26</sup> Ibid., p. 90.

<sup>27</sup> Susan J. Rasmussen.1994. Female sexuality, social reproduction, and the politics of medical intervention in Niger: Kel Ewey Tuareg perspectives. *Culture, Medicine, and Psychiatry* 18: 433-462.



(CFA), the Nigerien currency which in turn resulted in increased costs of health care, increased privatization of physician's practices, and subsequently to considerable illicit trade of western medicines and pills throughout the country.<sup>28</sup> Nonetheless, as during the colonial period, the Tuareg and other rural populations continued to be situated at the margins of this system with limited access to health centers, medicine and medical supplies.

The Niger central government programs to aid the northern regions were part of the Peace Pact and the government reinstated several mobile clinic units into rural Air and made an effort to staff it with Tuareg and local residents as *infirmiers d'état* (state nurses).<sup>29</sup> Nonetheless there continued to be much trepidation surrounding government programs and the various peacekeeping fronts that were circulating through the region, especially since some of these individuals became bandits while still posing as peacekeepers. Moreover, Tuaregs have been historically underrepresented in the government and civil sector and have viewed taxation, school registration quotas and other state efforts as exploitative strategies aimed at sedentarization.<sup>30</sup> As one Tuareg man who is being forced to sedentarize because of the most recent famine put it, "I can't miss

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<sup>28</sup> Rasmussen 2001, p.191-192, and p.xxx; using the case of Zimbabwe, de Waal also illustrates the impact of neo-liberal structural adjustment programs which he argues did not necessarily intensify poverty but did nothing to prevent it in the countries which adopted these policies. He further argued that "neo-liberalism did not promote democratic accountability, and in important ways helped to undermine it." Alex de Waal, 1997. *Famine Crimes: Politics and the Disaster Relief Industry in Africa*. Bloomington: Indiana University Press, p. 49-61; Tinguiri, K.L. 1991. Structural Adjustment, Growth and Human Welfare: the Case of Niger, 1982-1989. *Innocenti Occasional Papers no. 14*. Florence: UNICEF Child Development Centre provides a concise review of the economic conditions prior to and following the institution of structural adjustment policies as well as the devastating role of the 1982 drought and slump in uranium prices and the impact that these had on public health, education, agriculture, and employment. Also, Olusegun Wallace R.S. 1989. Structural Adjustment: The Case of West Africa. In, *The IMF, the World Bank and the African Debt: The Economic Impact*. Ed, Bade Onimode. London and NJ: Zed Books Ltd. 206-218; Harrison, G. 2004. *The World Bank and Africa: The construction of governance states*. London: Routledge.

<sup>29</sup> Ibid., 172-173.

<sup>30</sup> Rasmussen 1994; Susan J. Rasmussen.1992. Ritual Specialists, Ambiguity, and Power in Tuareg Society. *Man* 27: 105-128; Keenan; Bourgeot, A. 1990. Identité touaregue: de l'aristocratie la révolution. *Etudes Rurales*, octobre-décembre 120: 129-162.

the life of a nomad because I will never give it up. I will be sedentary. But in my heart, I will be a nomad.”<sup>31</sup> Meanwhile others are less sentimental about nomadism, as another Tuareg man who had given up his camel caravan for agriculture work years earlier put it, “Gardening is a lot more profitable than the caravans. I have no desire to return to my old life.”<sup>32</sup>

### **A Brief History of Health Services in Niger**

Health services as Westerners conceive them today began with French colonialism in the early 20<sup>th</sup> century with an enormous emphasis on mass campaigns against smallpox conducted by military physicians without building any type of public health infrastructure.<sup>33</sup> In 1921-22, only five doctors, resided in the French colony of Niger.<sup>34</sup> None were Nigerien. Moreover, whatever hospital or health services existed, were primarily utilized by and for the benefit of the colonial administrators.<sup>35</sup> What ultimately motivated the French to build schools and hospitals was that they wanted Nigeriens to occupy minor administrative posts, perhaps to alleviate some of the burden from colonial administrators. Ironically, according to one colonial administrator, “the great social objectives of French West Africa” were “freeing of the slaves, education, and the fight against epidemics.”<sup>36</sup> Inevitably these campaigns mainly reached the sedentarized populations not only because of difficult access but also because of the strong anti-

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<sup>31</sup> Michael Wines. Niger’s Nomads Agonize as Livestock Die. *New York Times*. August 4, 2005.

<sup>32</sup> Norimitsu Onishi. A Nomad Deserts the Desert; His Garden Blooms. *New York Times*. January 8, 2001.

<sup>33</sup> Gallay H. 1909. *Trois Annes d’Assistance Medicales Aux Indigenes et de Lutte Contre La Varioles*. Paris: Larose; Pascal Imperato. 1974. Nomads of the Sahel and Delivery of Health Services. *Social Science and Medicine*. 8: 443-457.

<sup>34</sup> Fugelstad, p. 116.

<sup>35</sup> Delavignette, a French colonial administrator points out that in 1929 with the 16,000 Europeans living in West Africa accounted for more than 5000 hospital cases and more than 83,000 hospital days. Robert Delavignette. 1968. *Freedom and Authority in French West Africa*. London: Frank Cass & Co. Tr. of *Service Africain*. 1946. Paris, Gallmard. P. 27.

<sup>36</sup> *Ibid.*, p.22

colonial resistance by nomadic groups, notably the Tuareg.

In 1931, the French government began a Mobile Medical Service throughout French West Africa, which they called the *Service Prophylactique de la Maladie du Sommeil*. Unfortunately, its efforts were primarily directed at the elimination of trypanosomiasis and onchocerciasis which existed in the savannas and forests but did not exist in the Sahel. The dispensaries that were established were tightly linked with administrative centers.<sup>37</sup> These services never reached nomadic groups who migrated throughout the Sahel. The reasons for the lack of extension of health services to nomadic groups are not articulated and there is little material from French military physicians on these campaigns and efforts but we can surmise from historical accounts that nomadic resistance as well as the loss of economic interest in Niger contributed to a disinclination to invest heavily in public health for a group of people who did not represent a potentially productive and exploitable labor force. The use of health care as a merely political tool to ensure a labor supply and consolidate political power and control of that labor force is a Foucauldian analysis that seems well suited to the French colonial mission.<sup>38</sup> Although the Mobile Medical Service was initially expanded and administratively integrated into the dispensary system, then called the Assistance Medical, in 1939, it was made a separate and independent organization and named the *Service General Autonome de Prophylaxie et de Traitement de la Maladie du Sommeil*. Though it had a new name, little seemed to change as the focus continued to be solely on trypanosomiasis. Through the years, the French colonial medical services continued to evolve, change its name, its stated purpose, but always continued to

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<sup>37</sup> Lhote, M. 1960. *L'Hygiene Mobile*. Mimeographed. Bobo-Dioulasso, cited in Pascal Imperato. 1975.

Problems in providing health services to desert nomads in West Africa. *Tropical Doctor*. 5:116-123

<sup>38</sup> Michel Foucault. 1994. *Power*. Tr. Robert Hurley and others. New York: The New Press. p.92-94.

functionally treat only trypanosomiasis and those sedentarized populations who occupied the savannas because they were the easiest group to exploit and extract resources from. In 1944, the colonial medical service was redubbed the *Service General d'Hygiene Mobile et de Prophylaxie*, with the stated goal that it would control the endemic diseases of leprosy, malaria, trypanosomiasis, yaws and syphilis as well as epidemic outbreaks of smallpox, plague, and measles.<sup>39</sup> Though in theory health services were extended to the Sahel, there was little change in function.<sup>40</sup> Moreover, those health services that did reach the Sahel were only available to sedentary populations.

As French colonialism neared its end, the newly developed states began to organize and develop their own mobile medical services. Remarkably, in 1960, as Niger gained independence, the former French colonies formed a supranational health organization to coordinate efforts against epidemic and endemic diseases which they called the *Organization de Coordination et de Cooperation pour la Lutte Contre les Grandes Endemes*.<sup>41</sup> In 1959, Niger began a mobile health service they called OMNES with several teams, each consisting of a few physicians, nurses, lab technicians, and medical aids, who would travel to various regions in vehicles equipped with advanced lab equipment and radiological devices.<sup>42</sup> This program ran for twelve years before it was discontinued due to high costs and the recognition that it was not achieving as profound an impact on nomadic populations as had been desired. Unfortunately, like the former colonial projects, this too only reached sedentary populations in the savanna regions and met with active resistance from nomadic groups because of its strong connections with tax

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<sup>39</sup> Imperato 1974.

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

collecting authorities and the government, which often accompanied the OMNES teams.<sup>43</sup> Therefore it was not merely French colonial physicians but even African medical students were at times viewed with distrust and apprehension when they returned to their native villages (after studying in Dakar, Senegal), Delavignette provides one such anecdote, “the elders will treat him with a sort of defiant deference mixed with a slightly ironic resentment. He wears a uniform, he is an official and he exercises, to some extent, the power of the Administration.”<sup>44</sup> In this way, simply training a new cadre of physicians is insufficient to change perceptions and attitudes towards Western medicine which is so closely linked with the colonial and state administration.

Pascal Imperato, an American physician and epidemiologist directing a measles immunization campaign in West Africa funded by the United States Agency for International Development (USAID) and the Centers for Disease Control (CDC) described the essential strategy of disconnecting the health services efforts from any government authorities and tax collecting agents, especially when it came to the treatment of nomadic groups.<sup>45</sup> Although this now seems intuitive, given the recent end of colonialism, it was an insightful observation and not at all obvious. Imperato believed that trust and confidence in Western medicine could be built over time among nomadic groups, including the Tuareg. Two years after the initial mobilization campaigns were completed, mobile teams traveled once more to reinforce the immunization campaigns. They found that nomadic groups, hearing of the immunization efforts, were traveling to

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<sup>43</sup> Ibid.

<sup>44</sup> Delavignette, p. 143.

<sup>45</sup> Imperato 1974; Imperato 1975.

sedentary villages and health dispensaries to seek out the healthcare.<sup>46</sup> The Tuareg had noted its efficacy in the decreased incidence of measles as well as the continued morbidity and mortality among those children who had not been vaccinated.<sup>47</sup> Thus disconnection of health services from government authorities and tax collection was not only an insightful maneuver but also an essential one and has the potential to dramatically alter health-seeking behaviors of the Tuareg who historically resisted Western medicine.<sup>48</sup>

Although successful, the immunization campaigns of the 1960s and 1970s did not dramatically alter the life and health of most Nigeriens as much as was hoped. Currently, life expectancy in Niger is only 42 years for men and 41 years for women, and declining.<sup>49</sup> Healthy life expectancy at birth averages only 35 years.<sup>50</sup> Total health expenditure per capita is only \$27 (intl) and contributes to only 4% of GDP. In contrast, the US health expenditures are more than 15% of GDP and averages \$5,274 a person Haiti, the poorest country in the Western hemisphere, where per capita spending is \$83.<sup>51</sup> Child mortality rates per 1000, representing the likelihood that a child will die before he or she reaches his fifth birthday, are 258 boys and 265 for girls, the third highest rates in

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<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> The essential dissociation of health services from tax collection was also one of the recommendations made in Roboff, F.V. 1977. *The Moving Target: Health status of nomadic peoples. Economic Geography.* 53:421-428.

<sup>49</sup> World Health Organization. 2005. *World Health Report 2005.* Geneva: World Health Organization. Accessed through [<http://www.who.int/whr/2005/en/> on March 30, 2006].

<sup>50</sup> Ibid.

<sup>51</sup> Ibid; The US and Haitian statistics were obtained from the World Health Organization Statistical Information System [<http://www3.who.int/whosis/country/compare.cfm?country=USA&indicator=PcTotEOHinIntD&language=english>] Also note that the dollars are represented in "international dollars" which is defined as: "Total health expenditure per capita is the per capita amount of the sum of Public Health Expenditure (PHE) and Private Expenditure on Health (PvtHE). The international dollar is a common currency unit that takes into account differences in the relative purchasing power of various currencies. Figures expressed in international dollars are calculated using purchasing power parities (PPP), which are rates of currency conversion constructed to account for differences in price level between countries."

the world after Sierra Leone and Angola.<sup>52</sup>

Why the high child mortality rates? One contributing factor is that the access difficulties of the nomads, which have changed little in the last thirty years. According to a survey conducted by the *Direction du Systeme National d'Information Sanitaire* (DSNIS) only 30% of the total Nigerien population has access to Western medicine-style healthcare, a figure that drops to only 15% of the population in rural areas.<sup>53</sup> There is on average a mere 3.3 physicians per 100,000 people with a total of 386 physicians in Niger.<sup>54</sup> Likewise, there are only 461 midwives (as of 2004) with a density of approximately 4 midwives per 100,000 people; and only 2,668 nurses (as of 2004) with a mere 23 nurses per 100,000 (as of 2002).<sup>55</sup> There is only one pharmacist per 200,000 people.<sup>56</sup> Meanwhile, Niger's transportation infrastructure has not changed the difficulties of accessibility. As of 1996, there were only about 800 km or 453 miles of paved roads in Niger, with a remaining 9,302 km (5,286 miles) of unpaved roads!<sup>57</sup> Thus the problem of health care delivery to nomadic tribes including the Tuareg continues to be exacerbated by this urban-rural divide in the context of an extremely impoverished and poorly developed

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<sup>52</sup> World Health Organization Statistical Information System based on data from World Health Report 2003. Geneva: World Health Organization. [<http://www3.who.int/whosis/country/compare.cfm?country=NER&indicator=MortChildMale,MortChildFemale&language=English>] accessed on April 10, 2006.

<sup>53</sup> Direction du Systeme National d'Information Sanitaire. 2000. *Plan d'Action de la Surveillance Active des Paralysies Flasques Aigues au Niger*. Ministere de la Sante Publique. Republique du Niger, cited by Ndiaye, S. M., Quick, L., Sanda, O., and Niandou, S. 2003. The value of community participation in disease surveillance: a case study from Niger. *Health Promotion International*. 18: 89-98.

<sup>54</sup> Data obtained from the WHO Global Atlas of the Health Workforce database available at [<http://www.who.int/globalatlas/dataQuery/default.asp>] last accessed on March 30, 2006.

<sup>55</sup> Ibid; There is an intense ongoing debate in the US and Europe regarding the severe nursing shortages in developed countries such as the US and UK and ethical concerns over the active recruitment of East Asian and African nurses where these shortages are much more stark and pronounced. See Shashank Bengali. Nurses leave, health care in Africa Suffers: Better pay and conditions lures. The US is among welcoming nations. *Philadelphia Enquirer*. April 20, 2006.

<sup>56</sup> Ibid.

<sup>57</sup> Central Intelligence Agency, based on a 1999 estimate.

country. Because of the high cost of medicine and health care as well as its inaccessibility there is extensive illicit trade of medications in both unaltered and altered forms which often do more harm. Rasmussen notes that when she was in Niger in 1995, there were several cases of deaths and medical emergencies caused by ingestion of pills sold cheaply in the street.<sup>58</sup> Other problems in the health system are the difficulties of transport of medicines not only because of poor infrastructure but also because of the severe heat. Vaccines and medicines may arrive to their ultimate destination but may be largely ineffective. Another problem that Rasmussen cites is the “dumping” of unused or expired medicines by transnational corporations posing as humanitarian aid, inevitably this leads to “mixed local reactions, from resignation, to fear, mistrust, and angry cynicism.”<sup>59</sup>

Access to Western health care is elusive for the nomadic Tuareg due to geographic and infrastructural limitations, a historic distrust of state sponsored health clinics that were and often still are linked with taxation and efforts to sedentarize them, and the availability in markets of medicines of uncertain quality. They turn to the plurality of traditional healers as their source of healthcare.

### **Traditional healers**

Comment:

The Tuareg of Niger, continuously situate themselves and their identity at interfaces rather than within a discrete locus and this is very much exemplified by the kinds of medicines they use, the different types of healers sought and their conceptions of healing. These traditions are fluid and changing, more so among sedentarized than rural groups but

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<sup>58</sup> Rasmussen 2001, p.23.

<sup>59</sup> Ibid.



I will try to describe them according to what I have learned from Rasmussen and Ariane Kirtley, a public health worker who grew up with the Tuareg of Air and spent the past year as a Fulbright Scholar living with and conducting public health research in the Azawak valley. They have provided me the most thorough characterizations of traditional medical practices among the Tuareg. There are also distinctions made between healing specialists that encompass not only the rural-urban divide but also based on region, culture, kinship, descent, gender and age.<sup>60</sup> While these distinctions are important and I may refer to some of them, I will not be able to analyze them in depth and will focus on the rural-urban divide that characterizes part of the wariness towards Western medicine.

I will organize the different types of healers into four categories. The first are the *marabouts* or *aneslem*. They are the Islamic healers or scholars, predominantly male, who use touch to find illness. The *icherifan* are a more specialized group of healers who claim descent from the prophet, inherit their skills and use Koranic verses and amulets to heal. There are two groups of herbalists, one of which is characterized as non-Koranic healers and sometimes called by the Hausa term *bokaye* or *imaswaden* in Tamajaq (*timaswaden* is the female term).<sup>61</sup> There are also the *tinesmegden* herbalists, who are preferably older women who have already had children or are past their child producing age; these healers inherit their skills in clans and matrilineally receive highly esoteric knowledge but cannot practice full-time until the death of their female teacher or with her explicit permission, out of respect for their teacher.<sup>62</sup>

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<sup>60</sup> Ibid, p. 27. For more extensive discussion of some of these specialists see Rasmussen 2001; Keenan.

<sup>61</sup> The name derives from the Tamajaq word *asawad* which means “to look or see” and according to Rasmussen is often though not necessarily accurately translated into French *sorcerie*.

<sup>62</sup> Rasmussen 2001. This preference for older women stems from two reasons according to the Tuareg, the first is that women of child-bearing age are believed to become infertile from the scent of the herbs from Mt. Abagazan, though interestingly enough young apprentices often fetch herbs for their teacher’s practice (men are not allowed). The second reason is attributed to the reserve male patients feel towards young

There is yet another set of healers who are traditionally of ambiguous or low status among patients but are nonetheless utilized as a resource and acknowledged by the more high status marabouts. They are sought out primarily to treat those illnesses believed to be incurable by Koranic verses, and use ritual exorcism of possessing spirits. Spirit possession illnesses are perceived as distinct, classified as “illnesses of the heart and soul” for which healing often involves musician curers.<sup>63</sup>

The word for “medicine” in Tamajaq is *amagal*. It conveys the ideas of “protection” and “solution to a problem” with counteractive implications of establishing balance and harmony.<sup>64</sup> These ideas of health and illness are linked to *al baraka*, a notion that derives from the Koran, which Jeremy Keenan explains as “closely related to the conception of God. It was a kind of mystical force or grace; a benediction or holiness deriving from God, and possessed by, or found in, both certain persons and things.”<sup>65</sup> Kirtley further comments on this by saying that “To many, in both villages and cities, health is left to being taken care of by God. This is true even for those that have been trained in the health field.”<sup>66</sup> It is unclear to what extent this seeming abdication of the responsibility for health to God is simply a response to the historical and continued lack of adequate access and resources to medicines.

Tamou, a female herbalist explained to Rasmussen in 1995 while she was doing field work in the Air mountains among traditional herbal healers that

*“to be in good health means to feel strong nonetheless, ‘illness, however difficult, is something from God. It is caused by God....Chance or luck [sa’a, from the Hausa] is*

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women, and this is likely related to views of menstruating women as a source of pollution to which men are particularly vulnerable.

<sup>63</sup> Ibid., p.29. For a thorough and more extensive discussion of these healers, see Susan J. Rasmussen. 1995. *Spirit Possession and Personhood Among the Kel Tewey*. Cambridge: Cambridge University Press.

<sup>64</sup> Ibid., p.xxviii

<sup>65</sup> Keenan, p. 149.

<sup>66</sup> Kirtley, personal correspondence.

*necessary for attaining a happy life. There are also certain places, which are dangerous for one's health; terrains or spaces [tetekkes] that cause illness. People must see a marabout before camping in such terrains. The marabout dreams and divines in order to diagnose the cause and cure of such danger.*"<sup>67</sup>

The notion of *baraka* that both Keenan and Tamou refer to can be found in good pasture, milk, and dates but is also destroyed when it comes into contact with polluting factors. Similarly, breaking of *baraka* is associated with illness and elicits punishment, or an act of retribution from God and according to Keenan, taboos were meant to avoid impurities and maintain *baraka*.<sup>68</sup> Mary Douglas' analysis of pollution and taboos is particularly relevant in which she describes "a polluting person" as "always in the wrong. He has developed some wrong condition or simply crossed some line which should not have been crossed and this displacement unleashes danger for someone."<sup>69</sup>

Comment:

Some illnesses are kept hidden partially because of the cultural value of reserve, shame or embarrassment (*takarakit*), especially among women and also because of fear of medical practitioners.<sup>70</sup> In the Tuareg medical tradition, healing poses a paradox because the "protection of [the] body involves its exposure, vulnerability and submission to outside scrutiny and control," this results in particular reservation to an "outsider" as healer, and this reserve applies to local male traditional practitioners as well.<sup>71</sup> Rasmussen points out that this fear and wariness whether of local or outside healer is directed against

<sup>67</sup> Rasmussen 2001, p.42; Rasmussen 1994; Rasmussen 1992.

<sup>68</sup> *Ibid.*, p.149.

<sup>69</sup> Mary Douglas. 1966. *Purity and Danger*. New York: Frederic A. Praeger. p. 113; Of course, there are other ways to become ill and define health. For example, *togershet* is translated to mean an illness that arises from evil eye or evil mouth, which are associated with social tensions and "the destructive power of negative speech" (Rasmussen 2001, p. 49). Douglas (p. 98) also illustrates this dichotomy of internal and external spiritual powers which can be unleashed, where the internal, "reside within the psyche of the agent—such as the evil eye, witchcraft, gifts of vision or prophecy" and the external are those "on which the agent must consciously work: spells, blessings, curses, charms and formulas and invocations." External powers "require actions by which spiritual power is discharged" while the internal force is not necessarily consciously triggered by the agent or intentional.

<sup>70</sup> Rasmussen 2001, p. xx.; Rasmussen 1994, p. 437; Rasmussen 1992.

<sup>71</sup> *Ibid.*, p. xxvi.

those who are “believed to have acquired their special powers illegitimately or who are perceived as misusing their powers.”<sup>72</sup> Moreover, this leads to a tension noticed by Rasmussen and others that especially Tuareg women attempt to maintain *takarakit* and hide illness and will often mask the true nature of their symptoms from Western practitioners viewed as “outsiders” and will even resist and avoid going to a clinic or hospital for as long as possible.<sup>73</sup> This extremes of *takarakit* is further illustrated by a narrative provided by Kirtley that she entitled “The Genie Sickness”:

*“When I first traveled to the Azawak I stayed in a nomad camp where a woman was deathly ill. She wouldn't eat or drink anything. She had a huge fever, and I was convinced she wouldn't survive. I offered to drive her to a health center and give her medication to reduce her fever. She refused because, according to her belief, her ailment was caused by genies (evil spirits) and thus human made medicine would not heal her. Thank goodness, I got her to sip sugar water and this gave her a little strength. A few days later (low and behold, she was still alive), I was told that the only thing that would heal her was music and dancing. So, we organized festivities with music and dance. The women were too shy to dance, so I danced and danced. She was so happy and feeling so much better that I danced most of the night for her. The next morning, she started eating again. So the next day we played more music and I danced again for her. In a few days she was on her feet, and a week later it was as if she had never been sick...Most of the time, people die from these illnesses. Luckily, this time, something worked.”<sup>74</sup>*

But this avoidance of the doctor and hospital is not simply a matter of reserve or modesty but stems from social, political and economic interactions between the Tuareg and the state; as Rasmussen and Kirtley have noted, the Tuareg are not necessarily averse to the medicine but to the practitioner and the treatment.<sup>75</sup> An “outsider” does not necessarily entail someone that is outside of the clan or community but can be someone that is

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<sup>72</sup> Ibid., p. xxx.

<sup>73</sup> Rasmussen 1994. Of course this practice exacerbates the fear of Western practitioners especially when patients arrive in conditions too severe to treat.

<sup>74</sup> Ariane Kirtley, personal correspondence. March 16, 2006. Paris, France. A parallel that Rasmussen also highlights is that of US immigrants in Texas who avoid going to health centers because they are afraid of immigration officials, Rasmussen 2001, p. xxvi.

<sup>75</sup> Rasmussen 2001, p. 433; Rasmussen 1994.

“inside” as well but behaves in ways inconsistent with Tuareg conceptions and ideals.<sup>76</sup>

This apprehension leads to the common practice to have most healing done by close relatives, kinsfolk and known healers and the simultaneous resistance to government or aid sponsored medical clinics or hospitals.<sup>77</sup> Of course, that the healer’s skill doesn’t necessarily give him or her authority is a very interesting contrast to the Western medical tradition in which the hierarchy is embodied and continuously reinforced both by practitioner and patient. Rasmussen suggests that the Tuareg are very well aware of the power physicians hold. In fact, it is this very power they simultaneously fear and hold in awe.<sup>78</sup>

For all of these different healing practices, knowledge is transmitted through non-written apprenticeship either matrilineally or through a clan structure, yet this is despite the availability of a written language. Can this be characterized as a form of resistance, and if so, to what? Or is this a means of maintaining dynamism and fluidity in the tradition? M. A. Makinde, a scholar of traditional African medical practices, argues that the reason traditional African medical practices have not gained legitimacy in Western medical science is because they are not written down and thus no textbooks exist.<sup>79</sup> The Tuareg case fits this model but is also different because of the fluid nature of the knowledge in both the way it is transmitted and distributed. For example, if asked for healing advice a young apprentice would respond that she could not give any without the permission of her senior relative to whom she is apprenticed. Rasmussen interprets this resistance not only as a sign of respect towards a teacher but also as a sign of

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<sup>76</sup> Ibid., p.26.

<sup>77</sup> Ibid., p.26

<sup>78</sup> Ibid., p. xxvi-ii; Rasmussen 1994.

<sup>79</sup> M. A. Makinde. 1988. *African philosophy, culture, and traditional medicine*. Athens, Ohio: Ohio University Center for International Studies.

*“ambivalence about fixing and freezing remedies in written text or visual display; rather, they worked only in dynamic practice... Yet at the same time, many remedies, like illnesses, ideally circulate, rather than remain contained within the hands of a single owner, whether healer or patient... even the secret knowledge inherited by herbalists and icherifan here does not imply completely private versus public domains of knowledge and practice.”<sup>80</sup>*

This conception of knowledge seems very much related to James Scott’s discussion of *mētis*, which he describes as a knowledge that cannot be easily textualized and imprinted in or taught through text because it is fluid and changing, embodied and “practical.”<sup>81</sup>

This makes for a rather interesting paradox in that a highly esoteric knowledge and practice is passed down through a particular lineage but is simultaneously openly distributed and disclosed to members of the community thus marring the rigid divide between patient and healer. As Rasmussen explains, “While the knowledge base may be privileged, its uses in practice involve the participation of the collectivity.”<sup>82</sup> Kirtley’s narrative “The Genie Sickness” is also illustrative of this and part of the *takarakit* the women had about dancing was mainly because men were present. In fact, Kirtley though points out that some of the younger women did dance with her for a little bit and “interestingly, the black Tuareg girl living in the community danced with me without hesitation. She had nothing to hide or be shy about. So, even though the black Tuaregs are former slaves, and still work for the white Tuaregs, the women have more liberty to act and be the way they want to.”<sup>83</sup> Whether this differential in reserve among black versus white Tuareg women results in a difference in attitude towards and utilization of Western health care services is not known and has not been studied. What is apparent is that Tuaregs who have traditionally held lower positions in Tuareg social stratification,

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<sup>80</sup> Rasmussen 2001, p.57-58.

<sup>81</sup> Scott 1998, p. 313-316.

<sup>82</sup> Rasmussen 2001, p.58.

<sup>83</sup> Kirtley, personal correspondence.

including former Tuareg slaves, have become better incorporated into the state because, more readily sedentarized and have been less resistant to state authority and at times were in fact, sent to state schools by noble Tuareg as a means of resistance to the state.

The lack of a clearly defined individual self in Tuareg healing systems is related to the ways in which metaphors of geography and terrain play a prominent role in Tuareg conceptions of body, self, personhood, community and healing. Rasmussen characterizes healers as deriving their knowledge and their practice from the community,

*“Their knowledge systems are based...upon systems that defy neat classifications and boundaries such as those standard oppositions between private and public, naturalistic, individual, internalist vs. personalistic, internal vs. external and other forms of causation in the social person and body. One often shares in the medical experience collectively, across illness/health and even bodily boundaries. In other words, health and illness are themselves not always rigidly bound oppositions of healer/patient.”<sup>84</sup>*

The role of the community in healing and illness is exemplified in the blurred divisions between she who heals and she who is healed. There is no separation between the individual member and the greater community, “ideally, healing in effect diffuses out into the community, rather than being concentrated upon a single person in isolation.”<sup>85</sup> This marks the fundamental difference between Tuareg and Western biomedical conceptions of health and illness that creates distinctions not only between patient and healer but also among patients, between races, down to the molecular level.<sup>86</sup> Moreover, it is interesting to think about the potential ways in which this sharing practice, this natural diffusion of medical knowledge that takes place can be capitalized on for more effective health care

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<sup>84</sup> Rasmussen 2001, p. 57.

<sup>85</sup> Ibid., p.56; Rasmussen 1994.

<sup>86</sup> This is exemplified by the rapidly emerging field of pharmacogenomics which aims to tailor design drugs and medicines to the genetic makeup of an individual or an individual cell for that matter.

delivery but also its potential dangers, both among the Tuaregs and within our own culture.

This fluidity of Tuareg medical knowledge, which though not recorded or transcribed into textbooks is freely distributed in the community marks an interesting contrast to Western medical knowledge, which though thoroughly recorded and transcribed into textbooks is neither freely distributed nor readily accessible to the community as a whole.<sup>87</sup> As Paul Farmer puts it, “We live in a world where infections pass easily across borders—social and geographic—while resources, including cumulative scientific knowledge, are blocked at customs.”<sup>88</sup> This interesting and rather perplexing paradox that somehow medicines are kept from those who need them most, raises important questions both for the Tuareg and for our own society.

### **The role of roads: metaphor for invasion?**

The Tamajaq word for *tarrayt* (perhaps related to Arabic tariq), has various meanings and connotations including “road,” “path,” “route,” “trend,” “way,” “journey,” or “quest,” and has potential moral connections. It is also a symbol of power and invasion as local residents of the Agadez region have become too accustomed to the flow of not only clinics and doctors through these roads but soldiers and guns as well; thus they mark a dual invasion of both the body of an individual as well as the communal body.<sup>89</sup> This sense of invasion translates into fear and distrust of even first aid workers (*secouristes*) who are

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<sup>87</sup> We need look no further than the high cost of medications in Western medicine and technology, which makes them largely unaffordable to most people who need them. A recent New York Times article gave a scathing account of this by Tina Rosenberg. 2006. The Scandal of ‘Poor People’s Diseases.’ *New York Times*. April 2, 2006.

<sup>88</sup> Paul Farmer. 1999. *Infections and Inequalities: The Modern Plagues*. Berkeley and Los Angeles, CA: University of California Press, p. 54.

<sup>89</sup> Rasmussen, p.xxx.



thought to be part of the “centers of control” and the state governments attempts at decentralization of power are perceived as insincere.

According to Rasmussen and Kirtley, there is a wide discrepancy in the availability of health care and health services to different Tuareg tribes living in different regions of Niger.<sup>90</sup> Both she and Rasmussen describe the Tuareg of Air as more sedentarized and thus having relatively more access and prowess at utilizing health services and health centers than other groups, particularly those that continue their nomadic lifestyle as compared to other Tuaregs, such as those of the Azawak with whom Kirtley lived more extensively in this past year, have continued to be nomadic.<sup>91</sup> As Kirtley describes it:

*“Generally speaking, only a few forms of Western medication are widely available, and these are used to treat any type of ailment. These, of course, are shared with whomever shows any symptom of ailment. Their proper use [is] rarely known. This is particularly the case in the Azawak where there are no health centers or clinic. Health centers are generally a two to three day donkey ride away, and so no one except for the men that sometimes go into the cities for trade. This is different in the Air, where there are many more health centers, health workers, and health promoting activities going on (relatively speaking). In the Air, anecdotal evidence... leads me to believe that the Tuaregs are better informed and have more proper use of medication available. Although, I have to say that I’m sometimes a bit dismayed by what I heard health workers teaching, and sometimes the quality of health work in all of rural Niger is not of great quality.”<sup>92</sup>*

When medicines are available and affordable, which is rarely the case, they are often freely distributed by an individual to the rest of the community to anyone who has similar symptoms.<sup>93</sup>

Rasmussen makes an interesting contrast between “the West” where we “tend to view medical regimes to healing as personalized and tied to our own individuality. In a Tuareg

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<sup>90</sup> Ibid.; Kirtley, personal correspondence. It’s important to note that both emphasize that even among the Tuareg of Air, access to health services and medicines is severely limited.

<sup>91</sup> Susan J. Rasmussen, personal correspondence. March 2006. Houston, Texas.

<sup>92</sup> Kirtley, personal correspondence.

<sup>93</sup> Ibid; Rasmussen 2001. Of course, this practice has become more prevalent not only in the developing world but in the US as well.

community, by contrast, prescriptions are not for the prescripatee alone... *takote* [alms/sacrifice] embeds medicine in a moral community, rather than in the individual body.”<sup>94</sup> There is also much frustration at the expense of prescription medicines obtained through state doctors or nurses in hospitals or clinics who are perceived as “anonymous and sometimes politically threatening.”<sup>95</sup> Even when state or development agencies come “bearing gifts” or medicines they can be viewed with much apprehension, as one person told Rasmussen, “Gifts from outside sometimes ‘come with a bite’” but even when these are accepted more problems can arise.<sup>96</sup> Guns and government militia often accompany these types of distributions and a sense of potential, if not actual coercion is very much present. The names of families are recorded and it is assumed that this kind of information can be used for census, taxation, and other surveillance. Rasmussen describes witnessing a food distribution effort and mobile medical team giving vaccination shots during a local music festival while “armed soldiers stood by and politicians gave speeches in Hausa. While Hausa is the important lingua franca of Air region, spoken as a second language by many men, it is not widely understood by rural women or children.”<sup>97</sup> The way they viewed these aid distributions and vaccination campaigns were not only alienating to Tuaregs but the Tuareg in return alienated the aid distributions by using the Hausa word for assistance or help, *taimako*, which is distinct from the Tuareg term *takote* (alms) which connotes generosity.<sup>98</sup> They recognized that these gifts came with a price” and were seen as potential “poison.”<sup>99</sup> In this way, we might even characterize Tuareg

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<sup>94</sup> Rasmussen 2001, p.143.

<sup>95</sup> Ibid., p.143

<sup>96</sup> Ibid., p.144.

<sup>97</sup> Ibid., p. 145.

<sup>98</sup> Ibid.

<sup>99</sup> Ibid., p.145-146.

resistance to these “gifts” as a means to resist state attempts at gaining “legibility” and control of the population.<sup>100</sup>

In fact, as both Rasmussen and Kirtley reiterate, rural Tuaregs do want access to Western medicines. They are even willing to teach Western practitioners about their own practices yet because of the specter of power dynamics that overshadows all interactions with health workers, they are wary and resist through avoidance. As Rasmussen put it, “there is a lingering suspicion of hospitals and clinics. For these are associated with centers of power and what many Tuareg view as fostering of surveillance and coercion in areas of education, sedentarization, and taxation policies...for every remedy, there is also danger, and remedies may become polluted, even poisonous.” This offers us an explanation for the extreme reservation that Tuaregs, especially women have and why they seek western medicine not directly at health clinics but through local intermediaries.<sup>101</sup>

This wariness is further reinforced by the element of reserve or *takote* that the Tuareg, especially women, have towards non-kin practitioners. Thus the challenges and obstacles that Tuareg women are faced with in obtaining Western medicine (or aid distributions) are two-fold. Not only is there less access but they often must rely on a husband or other intermediary to obtain medicine. This notion of reserve is reinforced by Kirtley’s “Genie Sickness” narrative as well as an experience she had when a male friend of hers who was seeking contraception for his wife, who was not able to ask for it herself, was turned away by the state nurses and Kirtley had to purchase it for him. Nonetheless, we are also reminded of Frantz Fanon’s description of medical colonialism in Algeria and his apt

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<sup>100</sup> Scott, p.2.

<sup>101</sup> Rasmussen 2001, xxx.

observation that “the Algerian’s refusal to be hospitalized is always more or less related to that lingering doubt as to the colonial doctor’s essential humanity.”<sup>102</sup> This otherness of the “outside” practitioner is consistent with Tuareg beliefs about *essuf* or the wild, in which the physicians and health workers that originate from beyond the community are morally ambiguous and not to be trusted. But Fanon’s observation underscores an underlying lack of trust and confidence in the physicians and other health workers’ motivations towards the Tuareg that stems not merely out of their traditional belief system but from the history of the encounter with colonial military physicians whose allegiance and interests were not for the health of the Tuareg but for the French government and were utilizing medicine as another means to pacify the otherwise unruly Tuareg.

The narrative of “The Genie Sickness” that Kirtley relayed further illustrates the extent of the fear and distrust of Western medicine that continues to exist in Niger and some of the difficulties that aid workers may have in convincing patients to seek care in hospitals. Rasmussen as well relates several stories similar to this in which there is such enormous distrust of Western health centers that patients may only go to a health center after becoming severely ill (sometimes too late) or when a close friend, often an expatriate, will convince them to go.<sup>103</sup>

A recent review of the literature on health care access of various nomadic populations throughout sub-Saharan Africa by two researchers from the Department of Public Health at Erasmus University provided some interesting insights into the disease patterns and difficulties that nomads face because of their mobility and resistance to government

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<sup>102</sup> Franz Fanon. 1965. Medical colonialism. In *A Dying Colonialism*. New York: Grove Press. p.231

<sup>103</sup> Rasmussen 1994.

intervention.<sup>104</sup> The authors reviewed the child mortality and maternal mortality rates, incidence of measles infections, trachoma, sexually transmitted diseases, tuberculosis, malaria and rates of malnutrition in various nomadic groups, including the Tuareg, and provide an example of a successful program for the treatment and control of tuberculosis.<sup>105</sup> They also noted that while nomads migrate to find water and pasture, they also migrate to avoid diseases and are quite savvy about avoiding crowded urban and village markets during measles epidemics for example.<sup>106</sup>

Sadly, it is precisely these patterns of avoidance that make nomadic groups even more immunologically naïve or vulnerable when they are forced to interact with settled communities. And it is only in the most dire of droughts and famines, when malnutrition levels are particularly high that nomadic groups deem that the risks of dying from starvation outweigh the risks of dying from the diseases carried by outsiders.<sup>107</sup> When they are forced to settle in refugee camps during famines and severe droughts for example, the combination of malnutrition, lack of immunity and crowded conditions make for higher rates of mortality among nomadic populations.<sup>108</sup> Even under these circumstances, when health clinics and centers are within reach, nomadic groups are deeply suspicious of governments, tax collectors and often, even aid workers.

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<sup>104</sup> Sheik-Mohamed, A. and Velema J.A. 1999. Where health care has no access: the nomadic populations of sub-Saharan Africa. *Tropical Medicine and International Health*. 4: 695-707.

<sup>105</sup> Ibid.

<sup>106</sup> Loutan, L. and Paillard, J.M. 1992. Measles in a West African nomadic community. *Bulletin of the World Health Organization*. 70: 741-744.

<sup>107</sup> Sheik-Mohamed and Velema, p. 700.

<sup>108</sup> Toole M.J., and Waldman, R.J. 1988. Analysis of mortality trends among refugee populations in Somalia, Sudan, and Thailand. *Bulletin of the World Health Organization*. 66: 237-247; Prothero R.M. 1994. Forced movements of populations and health hazards in tropical Africa. *International Journal of Epidemiology*. 23: 657-664; Aaby P., Bukh J., Lisse I.M., and Da Silva M.C. 1988. Further community studies on the role of overcrowding and intensive exposure on measles mortality. *Review of Infectious Diseases*. 10: 474-478.

Cities are perceived as distant end points of the roads which must be traversed not as sanctuaries. Despite the greater abundance of health centers, clinics and medicines they are seen as places of disease and danger rather than health and safety, furthering distrust of the “outside.” This wariness of cities is not a unique phenomenon nor is it without good reason. In rural Haiti, for example, women who had sexual relations with soldiers, truck drivers or other men (even if few in number) who had occupations that took them to the urban center of the country were more likely to be HIV positive.<sup>109</sup> Farmer identifies a set of factors, which he believes played a role in HIV transmission to rural Haiti: “1. Deepening poverty, 2. Gender inequality, 3. Political upheaval, 4. Traditional patterns of sexual union, 5. Emerging patterns of sexual union, 6. Prevalence of and lack of access to treatment for STDs, 7. Lack of timely response by public health authorities, 8. Lack of culturally appropriate prevention tools.”<sup>110</sup>

It is easy to imagine a similar situation arising in Niger, especially as most of the conditions outlined by Farmer already exist in Niger, and even more acutely rurally. For the Tuareg and other nomadic groups in Niger, the economic pressures of droughts and famine have forced many communities to sedentarize and the loss of cattle has forced men to migrate to urban centers in order to find work, meanwhile maintaining their cultural and social connections with their family in rural areas. The potential for an HIV explosion among rural Tuareg is exacerbated by the dearth of information on HIV/AIDS both among them and to them. Kirtley reports limited awareness of HIV/AIDS among the Tuaregs and other nomadic groups she interviewed. Three Fulani tribesmen, all of whom reside in different communities, suggested to Kirtley that HIV was transmitted to women “when

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<sup>109</sup> Farmer, p. 134.

<sup>110</sup> Ibid., p. 146.

they had sex with dogs” a strange and confounding assertion as this is not in anyway a local practice.<sup>111</sup> Where this idea originated and why it has captured the imagination of these men in such disparate areas is unclear but it does highlight an important area of necessary education and awareness. Even though the HIV prevalence rate in the general population of Niger is estimated to be between 0.87 to 1.2%, with a wide differential between urban and rural (2.1% and 0.6%, respectively) it is remarkably low compared to other sub-Saharan countries where rates can reach as high as 20%.<sup>112</sup> There is nonetheless an increasing risk as populations are forced to sedentarize and temporarily or permanently seek refuge from the economic hardship closer to urban centers where prevalence rates are higher. This low rate may be partly attributed to the low population density of Niger though it could also be misleading because when prevalence rates of HIV/AIDS among at-risk groups such as truck drivers, migrant laborers, commercial sex workers, military personnel and gold miners are examined, they rise to an astounding 25%.<sup>113</sup>

Yet, this urban versus rural distinction can also be turned inwards towards those healers who may be seen as “corrupted” by money and according to Rasmussen are “important in shaping/constructing perceptions of healing and the changing role of healing” because, among the Tuareg, “healing ideally entails generosity—specifically, in almsgiving, sacrifice, and other offerings. There is the general opinion that even prescription medicines, rather than being kept private or tailor-made in personalized exclusively

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<sup>111</sup> Kirtley, personal correspondence. According to Rasmussen, Tuareg have an ambivalent attitude towards dogs, sometimes they are used for herding and guarding but generally they are associated with the devil, Rasmussen 2001, p.39.

<sup>112</sup> Central Intelligence Agency 2005, based on a 2003 estimate gives the 1.2% estimate. The other statistics are from Boisier P, et al. 2004. Nationwide HIV Prevalence survey in general population in Niger. *Tropical Medicine and International Health*. 9:1161-1166.

<sup>113</sup> Salmen, L. and Fisher, A. 2005. Listening for effective HIV/AIDS Interventions: Application of the Beneficiary Assessment Approach to Preparation of the Niger Multi-Country AIDS Program (MAP). *World Bank Social Development Papers*, Paper No. 73, January 2005. Washington, D.C.: World Bank.

individual monopoly, should be distributed to those close to the immediate household.”<sup>114</sup>

This informal giving and sharing of medicines, including prescription medicines among community members is done because in the culture of sharing, “to finish an entire bottle of prescription medicine is not perceived as medical necessity but selfishness or unwillingness to give or share.” Given the rarity of prescription drugs in Western Africa generally but especially for these rural, nomadic groups of people it is difficult to imagine that even if there were an adequate explanation by prescribing doctors, nurses or more than likely pharmacists as to how these medications should be utilized and why their distribution must be limited to the individuals to whom they are given to and prescribed for, that these recommendations would not be followed.

### **Intertwining of germ theory and local knowledge**

*“The cultural forms may not say what they know, nor know what they say, but they mean what they do—at least in the logic of their praxis.”<sup>115</sup>*

Despite their distrust of Western practitioners and government officials and whatever their traditional medical systems and beliefs are, Tuareg peoples, are increasingly recognizing the value of Western medicine and are eager to utilize it and even prefer it when it is available though are not as eager to engage with practitioners. As Rasmussen said, “while many residents successfully treat illnesses with traditional local medicines, they view these latter as not sufficient for curing all illnesses, and when they do receive western biomedicines, these often take on significance of alms and sacrifice in the local

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<sup>114</sup> Rasmussen 2001, p.134.

<sup>115</sup> Paul Willis. 1977. Learning to Labor: how working class kids get working class jobs. New York: Columbia U. Press.



value system: ideally, they should be distributed on this ideological model.”<sup>116</sup> However, this distribution and sharing occurs in a context with minimal if any education and understanding of these medicines and it is interesting to see the ways in which individuals and communities have adapted some of this knowledge.

In contrast to the greater reserve among Tuareg women to visit health clinics, Kirtley notes that the women in her field assistants family are “more accepting of Western medication” which she attributes to the fact that they are “more concerned about healing their babies.”<sup>117</sup> This concern though doesn’t necessarily translate to increased visits to health clinics but as Kirtley points out, they will use what medicines they have access to and “tend to mix Western with traditional, and sometimes come up with a good concoction, and sometimes with a pretty useless concoction.”<sup>118</sup>

While they have incorporated Western medicines, some Tuareg express frustration that Western health practitioners do not recognize any value in Tuareg traditional medicine, as one *marabout* tells Rasmussen,

*“for every illness there is a medicine...Among the medicines of the whites, we have even added more to them, because there are certain substances from which one makes medicines that are obtained from the mountains, this material contains vitamins...Me, I accuse many state nurses of lying. All those doctors who say there is no traditional medicine, [well], me, I say that is not true. Even pills are made from certain trees. Me, I want doctors to say that [traditional] medicines exist, but you must have someone who knows about and recognizes them...”*<sup>119</sup>

I will use two examples provided by Kirtley on these types of adaptations and seemingly indiscriminate use of medications, those of paracetamol and nivaquine.

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<sup>116</sup> Ibid, xxx.

<sup>117</sup> Kirtley, personal correspondence.

<sup>118</sup> Ibid.

<sup>119</sup> Rasmussen 2001, xxviii.

Kirtley describes individuals pounding paracetamol or acetaminophen as it is more commonly known in the US, and putting it directly on wounds, presumably as a disinfectant. Kirtley describes this practice with immense frustration in the narrative “Curing Cuts,”

*“A Tuareg friend from the Azawak had a huge cut on his foot, which he had coated with the aspirine [sic] equivalent. He showed it to me asking for a bandaid. I said I would give him a bandaid if he washed it off and allowed me to disinfect it with betadine and cover it with neosporine (which I would give to him). He refused to wash it off. Next to him, another friend had a similar cut, and he accepted. My research assistant, also a white Tuareg is just as reluctant as my first friend even though he is from the city and knows that cuts need to be disinfected with something other than aspirine [sic]. He insists on covering his cuts with aspirine [sic] or clay (I think that they also like the idea that the aspirine [sic] and clay would dry the wound). My field assistant's brother got bitten by a dog one day. They simply covered the cut with aspirine [sic] thinking that he would be fine. I was, of course, very concerned about the possibility of tetanus and rabies and had to plead that he be taken to the free health clinic down the street.”<sup>120</sup>*

This is an extremely interesting practice especially as paracetamol is often used as an aspirin equivalent for analgesic purposes and the pills themselves look remarkably similar. When it was initially introduced, aspirin was often directly placed on wounds because of its analgesic effects, moreover there is a question of whether salicylic acid would provide enough acidity to serve a sterilizing function.<sup>121</sup> Elizabeth Dunn, a visiting fellow in Agrarian Studies at Yale University from the University of Colorado has done some very interesting research on the historical and social reasons for the high incidence of botulism in post-Soviet Georgia, actually also noted a similar practice among people who canned vegetables at home in that they would sprinkle aspirin into the jar before storing it in the

<sup>120</sup> Kirtley, personal correspondence.

<sup>121</sup> See Steen, K.H., Reeh, P.W., Kreysel, H.W. 1995. Topical acetylsalicylic, salicylic acid and indomethacin suppress pain from experimental tissue acidosis in human skin. *Pain*. 62: 339-47; Schottelius A.J. et al. 2002. An Aspirin-triggered lipoxin A4 stable analog displays a unique topical anti-inflammatory profile. *Journal of Immunology*.169: 7063-70; Elizabeth Dunn, March 25, 2006. New Haven, CT.

belief that it would sterilize the food and kill any potential bacteria.<sup>122</sup> It was also found that if enough crushed aspirin was added this indeed would sterilize the canned vegetables.<sup>123</sup> Despite these interesting observations and evidence for aspirin as a topical analgesic agent, there are no similar studies in the literature for paracetamol or acetaminophen.

This leads us to query as Kirtley did, what is the origin of this practice? Could it be that aspirin was originally available and people realized its analgesic properties by pounding it and putting it on wounds therefore paracetamol (also a white pill) is seen as an identical equivalent? At the same time, this cannot be the whole explanation because Kirtley also points out the use of clay to “dry” wounds. Where these practices originate from is undetermined and it is difficult to differentiate whether these practices are empirical, magical or ritual in origin. For example is there something about a white powder as cleansing and purifying? The reasons are unclear, nonetheless they do merit further research to understand their origins and the beliefs that surround them but they especially call for greater efforts at education, health promotion and further research into the potential topical analgesic and sterilizing properties of these medications.

The other interesting example Kirtley cites is the seemingly indiscriminate use of chloroquine, indicated for the treatment of uncomplicated malaria, to treat anyone with a fever. This has been noted by others and self-treatment of self-diagnosed malaria is quite common throughout West Africa.<sup>124</sup> One survey conducted in Niamey, the capital of Niger, by the Ministry of Public Health noted that of 199 people surveyed, individuals

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<sup>122</sup> Elizabeth Dunn, paper presented at the Yale University Agrarian Studies Colloquium, “Postsocialist Spores: Disease, Bodies and Regulation in the Republic of Georgia.” March 25, 2006. New Haven, CT

<sup>123</sup> Elizabeth Dunn, personal communication. However this was not made a policy recommendation because of concern that such high concentrations of salicylic acid would cause gastric bleeding.

<sup>124</sup> Kohar Jones, personal communication. New Haven, CT.

bought only an average of four pills, which is far below the recommended dose for the treatment of malaria by the World Health Organization.<sup>125</sup> The author argues that with further education, self-treatment can be an effective strategy for primary care treatment and goes as far as to say that this practice poses no increased risk for the development of chloroquine-resistance.<sup>126</sup> This belief that indiscriminate use of chloroquine will not lead to resistance is unlikely since there exists abundant evidence to the contrary. In fact, the first case reports of chloroquine resistant malaria were reported in 1991 among five young French tourists who had traveled to Niger and were shown to have chloroquine resistance *in vitro* despite taking chloroquine prophylaxis.<sup>127</sup> A more recent study conducted in Niamey in 2001 did not look at chloroquine resistance directly but on chloroquine's efficacy in the treatment of uncomplicated *P. falciparum* malaria in children ranging in age from one to fifteen years.<sup>128</sup> What they found is that nearly 80% (n=241) of the children responded adequately to chloroquine treatment and only 13% (n=32) exhibited treatment failures but were successfully cured with a second-line drug. Of note, the percentage of treatment failures was slightly greater among younger children, 16.6%, 12.6%, and 8.2% for 1-5 year-olds, 6-10 year-olds, and 11-15 year-olds respectively.<sup>129</sup> The authors also remark that 14.5% (n=35) of the children had taken chloroquine prior to arriving at the health center but do not remark whether there is any correlation between

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<sup>125</sup> Julvez, J. 1999. Les ventes de chloroquine dans la rue à Niamey (Niger). *Bulletin Societe Pathologique Exotique*. 92:31-2.

<sup>126</sup> Ibid., p. 32

<sup>127</sup> Gay, F. et al., 1991. Report of chloroquine resistant malaria in Niger. *Therapie*. 46:90-1.

<sup>128</sup> Dugelay, F. et al. 2003. Efficacy of chloroquine in the treatment of uncomplicated *Plasmodium falciparum* malaria in Niamey, Niger, in 2001. *Annals of Tropical Medicine and Hygiene & Parasitology*. 97: 83-86.

<sup>129</sup> Ibid.

those children who exhibited resistance and those who had taken chloroquine prior to presentation.<sup>130</sup>

Self-treatment can be effective if there are ways to ensure individuals, especially children, receive the full course of appropriate treatment if they are suspected of having malaria. Developing strategies for communities, especially rural ones with limited resources and limited access to physicians and health clinics, to clinically diagnose malaria would be ideal. Remarkably, this is precisely what one group of researchers sought to do. In a study published in the *Lancet*, researchers from the University of Geneva's Department of Community Health and Tropical Medicine attempted to identify the clinical criteria associated with parasitemia.<sup>131</sup> Utilizing a case-control approach they matched 557 febrile children, ages 2 to 9 years-old who came to a health center in Galmi, a small city in the south of Niger, with non-febrile children, controlling for sex, age, ethnic group and day of presentation.<sup>132</sup> Moreover, the febrile cases were divided along three clinical criteria: duration of fever (less than three or greater than three days before presentation); fever grade (below 39°C or 39°C and above); and whether there was a likely non-malarial origin (e.g. otitis, pneumonia, measles, meningitis, dysentery, pneumonia).<sup>133</sup> What they found was that there was a highly significant association ( $p < 0.0001$ ) during the rainy season between high intensity fevers of short duration and parasitemia.<sup>134</sup> Whereas, there was no correlation between febrile episodes and parasite count during the low-transmission dry season.<sup>135</sup> Using this information to develop

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<sup>130</sup> Ibid.

<sup>131</sup> Rougemont, A et al. 1991. Epidemiological basis for clinical diagnosis of childhood malaria in endemic zone in West Africa. *Lancet*. 338: 1292-1295.

<sup>132</sup> Ibid.

<sup>133</sup> Ibid.

<sup>134</sup> Ibid.

<sup>135</sup> Ibid.

clinical treatment protocols that can be adopted even in rural communities far removed from health centers, especially during the rainy season when travel may become more cumbersome would be invaluable not only for effective treatment but to prevent the further development of chloroquine resistance.

Remarkably a more recent study conducted in Ghana showed that training primary school teachers to identify and treat malaria utilizing prepackaged chloroquine tablets showed that an appropriate and successful treatment of 97% of cases.<sup>136</sup> This is an impressive success rate especially when we compare it to the treatment of child malaria cases at a health clinic in Niamey, Niger, which based on one study showed that only sixteen percent of severe cases and thirty-six percent of ordinary cases were being appropriately managed.<sup>137</sup> While primary schools and attendance in Niger, especially among rural communities are more rare, this study nonetheless is a wonderful example that medical professionals, diagnostic equipment or even health centers are not required for adequate treatment. This is not to say that these are not desired goals but given that such health centers often take decades to develop and gain the trust of communities even under the best of circumstances, training nomadic community health workers may be a short-term means to engage rural communities in successful healthcare. This also poses an opportunity to develop strategies and build partnerships that would strengthen trust in Western medicine and health practitioners and ultimately decrease wariness, reserve and increase access and utilization of health services. In implementing these types of strategies, as Imperato's work showed, it is essential that these community health workers

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<sup>136</sup> Afenyadu, G.Y., Agyepong, I.A., Barnish, G., Adjei, S. 2005. Improving access to early treatment of malaria with primary school teachers as care providers. *Tropical Medicine & International Health*. 10: 1065-72.

<sup>137</sup> Gay-Andrieu F et al. 2005. Epidemiological, clinical and biological features of malaria among children in Niamey, Niger. *Malaria Journal*. 4:10-9.

be perceived as independent of the government and as full, respected members of the community who are tolerant and respectful of the traditional system.<sup>138</sup> Perhaps the beginning of some hope are preliminary findings by Kirtley that show that Tuaregs in the Azawak region where she conducted her studies are more likely than other ethnic groups to utilize mosquito nets.<sup>139</sup> Though the reasons for this are unclear and have not been investigated, Kirtley suggests that this differential usage among the Tuareg in the Azawak may in fact be a response to the lack of access and availability of health services and medicines but further research needs to be done to understand this.

Another interesting study conducted in Niger looking at the social and cultural factors that impact surveillance for polio or acute flaccid paralysis (AFP) serves as a case analysis for the potential role of community-based disease surveillance and the ways in which Western health interventions and practices can be integrated by a community to change health outcomes.<sup>140</sup> Established in 1990 with support from the World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), and the CDC, the *Direction du Systeme National d'Information Sanitaire* (DSNIS) is responsible for conducting surveillance for AFP and other diseases such as yellow fever, meningitis, measles, and cholera in Niger. With 49 epidemiologists distributed in each of the eight regions and 41 districts of the country for a population of ~12.5 million people their capacity is severely limited.<sup>141</sup> The CDC and WHO became involved in 1997, in an effort to improve AFP surveillance with increased training of

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<sup>138</sup> Imperato, 1974; Imperato, 1975.

<sup>139</sup> Kirtley, personal correspondence.

<sup>140</sup> Ndiaye et al, 2003.

<sup>141</sup> Ibid.

epidemiologists, nurses, and logistical support for transportation and communication.<sup>142</sup> Since then, there has been an improvement in reporting of AFP cases and detection of polio.<sup>143</sup>

The first part of the Ndiaye et al. study was to conduct structured interviews with nurses at health centers asking them to identify the obstacles to effective surveillance of AFP in Niger. The nurses unanimously reported that there was a lack of awareness in rural communities about polio or AFP and inadequate education of parents about what the protocol should be in bringing in a child and that it must be done rapidly. Also, 87% of nurses identified limited access to health care as an obstacle to immunization and surveillance; 75% reported that there was a shortage of health care staff and 62% said that there was a lack of trained and committed staff. Moreover, 75% of nurses reported that cultural beliefs of parents were an obstacle to surveillance, such beliefs included attributing the paralysis to spiritual or divine intervention and seeking initial care with a traditional healer. Therefore only going to a health center or clinic two to four weeks later. Despite these limitations and obstacles, improvements had been made in reporting and the investigators sought to understand how this was achieved.

What they said was that the improvements were largely due to community-based efforts. Of the thirty-three total cases of AFP reported in Niger in 1999, eighteen of them (greater than 50%) were reported by parents or “community agents” who had been trained by previous community targeted health campaigns. Moreover, reporting was achieved within three to twenty days, which is consistent with the recommended reporting period

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<sup>142</sup> Ibid.

<sup>143</sup> Ibid.



for isolation being fourteen days.<sup>144</sup> Although this is a small study it showed that community involvement contributed to the majority of reporting.

What the authors recommended to improve surveillance was:

- 1) Further recruitment, training, supervision, and motivation of community health agents. Who should, “keep their eyes and ears open and report suspected cases on their own, especially when they suspect that parents would not, as a result of their cultural beliefs and/or lack of access to transportation or communication or with an epidemiologist.
- 2) Develop “linkages and collaborations” between community leaders and various interest groups such as traditional healers, midwives, *secouristes* and other community health agents to increase sensitivity that will improve the sensitivity of surveillance rurally and locally.

As the authors point out, all previous models of effective community surveillance rely on the involvement and commitment of the local community members, which is based not solely on participation but direct involvement in the decision making, outlining of the goals and long term implementation of a program.<sup>145</sup> One point that I’d like to make is that despite their claim that cultural beliefs were an obstacle, their data doesn’t support this and in fact argues that cultural beliefs were not the primary reason for mothers not bringing their children to health clinics. In fact, I would contend that the resistance is more out of fear and mistrust of government and individual practitioners rather than a lack of faith in the efficacy of Western medicines. Farmer points out a similar phenomenon in

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<sup>144</sup> Ibid.

<sup>145</sup> Ibid.

Haiti where *sida*/HIV/AIDS was viewed as a “jealousy illness” but people still went to the doctor and sought treatment.<sup>146</sup> Using the case of tuberculosis treatment in Haiti, he also points out that “comparisons between two groups who held similar beliefs about the disease but who received standard versus enhanced services call into question the immodest claims of causality staked by analysts and providers who seek to explain the persistence of tuberculosis in the era of antibiotics.”<sup>147</sup>

### **Drought, Famine and Sedentarization**

*“Much international and national language and policy toward northern Niger and the Air Tuareg tend to share the premise that they are not ordinary, that they do not fit in, or that they are an anomaly.”<sup>148</sup>*

I could not end this paper without trying to take into consideration the way the recent and ongoing famine has impacted the health of the Tuareg and how it is shaping and redefining their interactions with the state, aid organizations and health clinics. Currently there are an estimated 3.6 million undernourished people in Niger, the highest number of people in the region.<sup>149</sup> To understand a bit of the chronology of the events and context that have brought about the current situation I refer you to Appendix I where I have provided a brief timeline of the events leading up to the famine as well as the government and humanitarian responses.

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<sup>146</sup> Farmer 1999, p. 180.

<sup>147</sup> *Ibid.*, p. 213.

<sup>148</sup> Rasmussen 2001, p.169.

<sup>149</sup> United Nations. 2005. UN Flash Appeal Revision August 2005. New York: United Nations. Available at [[http://www.who.int/hac/crises/ner/appeal/2005/Revision\\_2005\\_Niger\\_PRINT.pdf](http://www.who.int/hac/crises/ner/appeal/2005/Revision_2005_Niger_PRINT.pdf)] last accessed on April 20, 2006. p.3.

The outline illustrates the successive pleas by MSF, the UN and other aid organizations that went unanswered for eight months before funding from Western governments began to trickle in. According to the UN, “the slow and meager initial response to the [aid] Appeal, however, resulted in the deterioration of the situation, leading to higher-than-usual malnutrition and mortality rates, and prolonging the projected duration and impact of the crisis beyond the current lean season into the harvest and post-harvest period.”<sup>150</sup> At the time this second flash plea was made a mere 25 million USD had been committed or received by the UN yet because of the delay in aid donations, the estimated needs and costs of operations had risen to 80 million USD.<sup>151</sup> Although thousands of children and families have received food and aid the situation continues to be beyond dire, as Kirtley puts it, “dire is almost a small word.” The delay in response though shocking and demoralizing is perhaps not altogether new or surprising given the history of famines in Niger and the region. Fugelstad describes the Niger famine of 1912-1915 and comments on the fact that although there were descriptions of the famine there was no evidence that the French colonial regime collected any data on health and nutrition. He rationalizes that “perhaps this dearth of evidence is in itself revealing. It implies that the French paid scant attention to the plight of the Nigeriens. Certainly they never completed launching anything in the way of a relief programme.”<sup>152</sup> He also notes that similar to the current situation, the famine was precipitated not so much by the lack of food but by a rapid rise in millet prices (over 100 times in the 1912-1915 famine) and a dramatic depreciation in the price and value of cattle.<sup>153</sup> The parallels are astonishingly and disappointingly

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<sup>150</sup> Ibid., p.1.

<sup>151</sup> Ibid., p.1.

<sup>152</sup> Fugelstad, p. 91.

<sup>153</sup> Ibid.

similar and were sadly repeated throughout the colonial and postcolonial history of Niger. This pattern horrifying as it may be is not restricted to Niger but echoes throughout sub-Saharan Africa. Ultimately we are forced to ask a similar question to the one posed by Paul Farmer with respect to neglected diseases “why are some epidemics visible to those who fund research and science, while others are invisible?”<sup>154</sup> Why are some crises visible and others not? The reasons for the failure of an adequate response to aid pleas for Niger are still not clear.

Although resulting from a catastrophic series of droughts, a locust invasion and floods that swept away cattle this present famine, like previous famines in Niger, was not precipitated by the lack of available food but rather by the inability to purchase it. Thus, despite the reduced crop yields the crisis is not necessarily one of food shortage but to use Amartya Sen’s vocabulary, a result of a loss of entitlements.<sup>155</sup> Because of the severity of the drought and famine, many nomadic pastoralists, including the Tuareg, are migrating towards sedentary villages and cities in order to have better access to aid from government and humanitarian organizations—this is similar to what Pascal Imperato noted during the 1972-1974 famine. As one nomadic Tuareg interviewed by French documentary film maker Ingrid Patetta said, “today we have no choice, that’s why we left our homes and settled close to the road, hoping that we will be noticed and get some aid. Cattle breeding is the only thing we know, but now, because of our situation, we are ready to accept anything.”<sup>156</sup> There has been a dramatic depreciation in the value of livestock and many

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<sup>154</sup> Farmer, p.56.

<sup>155</sup> Amartya Sen 1981. *Poverty and Famines: An essay on entitlement and deprivation*. New York: Oxford University Press. p. 7

<sup>156</sup> From a film by Ingrid Patetta a documentary film-maker who lives in New York, traveled to the Azawak valley as well on behalf of an NGO named Tagaste and interviewed rural Tuareg for whom aid had not arrived. Ingrid Patetta. 2005. *Cattle is Life*. Available at [<http://homepage.mac.com/ingridpatetta/tagaste/Menu81.html>]

nomadic herders who once had upwards of 300 heads of cattle are reduced to 10 or 20.<sup>157</sup> According to the UN the dramatic depreciation in value of livestock is due to their poor condition with some cows, once recognized as some of the best cattle in West Africa, being sold for as little as \$1.50 USD while the normal prices are in the order of \$250 USD because they are mere skin and bones. Thus what farmers are coping with is a dramatically reduced purchasing power because they lost their primary source of income (millet crops) as well as had a dramatic attrition in their capital investment (loss of cattle to the drought, starvation and floods), all in the face of record prices of foodstuffs.<sup>158</sup> As these nomadic groups are being forced to give up their way of life because they have lost their livelihood it is difficult to tell what will happen.

Currently there are ongoing efforts by the World Food Program, CARE, Medécins Sans Frontières, Plan International, the International Society of the Red Cross and Red Crescent International, and dozens of other humanitarian aid organizations and NGOs, to alleviate the situation in not only Niger but emerging famines in Mali, Ethiopia, Somalia, the Democratic Republic of the Congo, the Côte d'Ivoire and Kenya as well. But whether these organizations are reaching nomadic groups and those who are most in need in Niger is unclear. As Kirtley said, “tons of aid agencies came to Niger after/during the food crisis. However, they didn’t necessarily go to the most pressing areas. Some places got all the aid, and others (such as the Azawak) were totally ignored. I don’t know who decided where people should go.” Obviously given the overall economic situation of

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<sup>157</sup> Kirtley, personal correspondence.

<sup>158</sup> As George Spittler explained “ownership of livestock can also serve as a financial buffer, as animals can be sold during a drought...Diversification of the economy offers additional protection.”(162) Spittler, G. 1999. *Stress, Crisis, and Catastrophe*. In *Food Security and Nutrition: The Global Challenge*. U. Kracht and M. Schultiz, editors. New York: St. Martin’s Press.

Niger any aid is useful and will be of benefit. What Kirtley seems disconcerted by is that “some areas are in greater need than others” yet for complex political, social, geographic and logistical reasons are invisible to aid groups and the government. For example, several Mèdecins Sans Frontieres country offices have sent volunteers and have set up feeding centers but for logistical reasons these are based in large cities and population dense areas and are not doing outreach into the field.

What is hopeful is that aid organizations have been trying new strategies based on recognizing the etiology of the famine and relying more on the work of Amartya Sen and Tony Vaux, the former head of Oxfam, who have written critically on the role of governments and aid organizations in famine and war.<sup>159</sup> Groups like the British Red Cross have adapted innovative strategies to find nomadic groups by using government maps of known watering holes and rather than simply distributing food aid they have also begun cash distributions.<sup>160</sup> Other organizations such as CARE are using innovative strategies such as investing in cattle, the Tuareg savings account, as a form of aid rather. Such strategies are incredibly important as they will not only help nomads increase their purchasing power in the short term but will allow them to resume their way of life once this crisis subsides without becoming dependent on humanitarian aid shipments.<sup>161</sup>

Many scholars in the past have studied the differential health impact of droughts on nomadic versus sedentarized populations in the Sahel, consistently showing that despite the romantic notions of nomadic populations as somehow healthier and more robust than

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<sup>159</sup> Tony Vaux. 2001. *The Selfish Altruist: Relief work in famine and war*. London: Earthscan.

<sup>160</sup> Mark Snelling, personal communication. April 23, 2006.

<sup>161</sup> As Sen has written, “in understanding general poverty, or regular starvation, or outbursts of famine, it is necessary to look at both ownership patterns and exchange entitlements, and at the forces that lie behind them.” (6) Also, for a discussion of the role and limitations of market liberalization in propagating and preventing famine in sub-Saharan Africa, see D.A. Sahn, Economic Liberalization and Food Security in Sub-Saharan Africa. 1999. In, *Food Security and Nutrition: The Global Challenge*. Editors, Uwe Kracht and Manfred Schulz. New York: St. Martin’s Press.

their sedentarized counterparts, nomadic groups were in fact often less healthy, children were sicker with higher mortality rates, and their nutritional status, particularly in times of drought, was poorer.<sup>162</sup> To the government and aid organizations the Tuareg and other nomadic groups in the Azawak, these people are no longer visible not because they cannot be seen but because they do not want to be seen yet often the ones to be in the most dire situation. Mark Snelling, a journalist who traveled to Mali and Niger with the British Red Cross's Emergency Response Unit, suggests that the inability to reach certain populations is exacerbated by the fact that many herders, in their efforts to find pastureland to keep their waning livestock alive, have migrated to more isolated areas thus making them less visible than they would have been otherwise.<sup>163</sup> Furthermore, it is often just the male herders who migrate with the livestock, often leaving their families behind and thus inadvertently exacerbating the situation by disconnecting the community.

Sheik-Mohamed and Velema's article as well as Farmer's *Infections and Inequalities* serve as foreboding warnings of what economic displacement and impoverishment can do to marginalized communities but hopefully they also serve as a powerful clarion call to action for local community-driven health initiatives and development organizations. A thorough analysis of the differential impact that the drought and famine have had on nomadic versus sedentarized populations while rife with anecdotal evidence is currently important is severely limited by the paucity of data. What I find more compelling though is the opportunity potential that the famine provides to engage nomadic groups with the health system and to begin building confidence and a relationship of trust that would

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<sup>162</sup> For an excellent compendium of research articles mostly by researchers affiliated with the London School for Tropical Medicine and Hygiene on this topic see Allan G. Hill, editor. 1985. *Population, Health and Nutrition in the Sahel: Issues in the Welfare of Selected West African Communities*. London: Routledge & Kegan Paul.

<sup>163</sup> Mark Snelling, personal communication. April 23, 2006.

facilitate increased access and availability of health services to nomadic groups when the famine has passed. As Imperato noted more than thirty years ago during a similar famine in Niger, this is not out of the realm of possibility, in describing the impact of the drought of 1972-1974, he says,

*“The immediate effect of the present drought on the delivery of health services to nomads has been: to bring large numbers of nomads into the delivery system; to demonstrate the advantages of the services which the system can deliver; to improve general levels of health and well being; to modify attitudes toward modern medical care; to raise levels of environmental and personal hygiene of nomads. Whether or not nomads resume their pre drought life style, it is fairly certain that a large proportion of them, having experienced the health services which are available, will avail themselves of these services. The net effect of this will be to raise general levels of health in the Sahel, to decrease morbidity, and to decrease mortality.”<sup>164</sup>*

Imperato’s hopeful message is confronted by the disheartening reality of the cyclical nature of these tragedies and the eerie and disconcerting parallels in accounts of famines throughout the history of not only Niger but also various other African countries.<sup>165</sup>

These problems and difficulties have not been solved. It seems that each epidemic, each famine brings with it a wave of delayed aid, enormous frustration and demoralization, apprehensive hope and yet it seems that if we study history in order that we may not repeat it, the humanitarian aid industry has been an incompetent student. The famine of Somalia in the early 1990s was described as “the greatest failure of the UN in our lifetime” by a UNICEF official—this statement is only too easy to repeat for Ethiopia, Zimbabwe, the Sudan, Niger, and sadly the list could go on.<sup>166</sup> De Waal and Vaux do not merely argue for humanitarian intervention but in fact critique this as insufficient and argue that local capacity building to prevent famines is what is necessary.<sup>167</sup> Dr. Guy

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<sup>164</sup> Imperato 1975.

<sup>165</sup> de Waal 1997; Vaux 2002

<sup>166</sup> UNICEF official as cited in de Waal 1997, p. 179.

<sup>167</sup> de Waal 1997; Vaux 2001.



Zimmerman, a Red Cross doctor from Geneva who was working in Niger put it eloquently when he said,

*“sooner or later we are going to have to relinquish our obsession with emergencies. Time and time again, there is little action from donors, governments, the media and NGOs until a crisis breaks, until we get the TV images of starving babies that we seem to so crave. Until we genuinely believe that it is better to avoid and prevent a crisis than to respond to one, there will be no end to these kinds of emergencies. None.”*<sup>168</sup>

Snelling, argues that even this astute observation and analysis does not quite go far enough and that we must analyze and challenge the fundamental frameworks on which these actions and responses are built.

Yet, why is it that the world has waited, stood idly by until the situation is dramatically exacerbated? Why is it that we turn a blind eye until the consequences of our inaction reap irreparable devastation? This is true in famine relief as it is in disease prevention whether we are speaking of HIV/AIDS or malaria. How can humanitarian aid organizations and donor agencies be less reactive, prescriptive and hegemonic? According to the World Food Programme, there are ongoing and increasing food shortages in Niger, Kenya, Djibouti, Ethiopia, Somalia, Mali, Cote d’Ivoire, the Sudan, and the Democratic Republic of the Congo. There is no shortage of need for humanitarian aid and action. Yet, the question remains, where to from here and how. Will this most recent famine catalyze the right mix of local and global action?

### **Conclusion and concluding questions**

*“It’s no secret that a conscience can sometimes be a pest.”*

Bono, U2

*“Sometimes a scream is better than a thesis!”*

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<sup>168</sup> Interviewed by Mark Snelling. Diary from Niger: August 2, 2005. British Red Cross. London: UK. Available at [<http://www.redcross.org.uk/news.asp?id=48226>] last accessed on April 6, 2006.

## Ralph Waldo Emerson

The Tuareg, as Susan Rasmussen demonstrates so well, are a difficult group to classify. They are a people who embody “alterity,” are eternally at a crossroads, forever in that liminal space between autonomy and state control, north and south, Islamic and African religious beliefs, tradition and “modernity.”<sup>169</sup> Their tradition of communal healing and sharing comes into direct opposition with the highly individualized and authoritatively divided Western culture of medicine, which not only makes sharp distinctions between individuals as independent and “self-sustaining” bodies but also firmly dictates who can occupy (and how) the roles of patient and healer. It is the fundamentally different epistemological frameworks under which they operate that make the interface of Western and traditional Tuareg healing practices so seemingly incongruent. Yet, I wonder, whether we in the West, particularly the United States, have something to learn from this. We have the most expensive health care system in the world with the most modern technology and the most funding for research and innovation yet we still have an enormous 42 million (almost quadruple the population of Niger) who have no health insurance. Their limited access is not due to poor roads, a dearth of hospitals or trained and dedicated individuals but is because of a fundamentally individualistic ethos that is directly opposed to the communitarian and sharing generosity that we find among the Tuareg.

As the narratives that I’ve discussed demonstrate, the nomadic Tuareg are a dynamic, creative group of people with a rich medical tradition that emphasizes community health and healing. Despite a lack of understanding of biomedical knowledge and sufficient education, they readily see the value and benefits of Western biomedical models and are

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<sup>169</sup> Rasmussen 2001, p. xiv.

eager to incorporate them into their lives, as long as they are not perceived as a means of control and subjugation. Their case is a not very subtle reminder that for all of the technology, research funding, and human capital that is invested biomedical and social research, both in the West and in sub-Saharan Africa, we have made utterly inadequate efforts to apply this knowledge that is being continuously generated.<sup>170</sup> Similar studies of nomadic groups done more than thirty years ago resulted in the same conclusions, health must be dissociated from tax collection and the state, members of the local, indigenous community must be trained as medical aides and provided with an adequate supply of necessary medications and resources, more education into hygienic health practices and effective usage of Western medicines must be integrated into this process.<sup>171</sup> Thus, the question remains, is not just how but will we utilize and share this knowledge that we have gained about the Tuareg with them so that they may use it to improve the health of their communities. Furthermore, although delayed, the attention Niger and the Tuareg have gained as a result of this famine must also be used as a stepping stone for increasing aid and health services to communities, increasing education and awareness campaigns thus educating and empowering these communities to utilize medications and health services in a responsible way that will build both trust over the long term as well as capitalize on the autonomy and initiative that they have to utilize medications.

This is a question that is of course not limited to the Tuareg but to marginalized groups and communities generally and parallels the situation in other African countries. How can we direct the energy and attention that has been invested in Niger for the current famine to develop new efforts and strategies that will not only promote and increase health service

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<sup>170</sup> Garner P., Kale R., Dickson R., Dans T. and R. Salinas. 1998. Getting research findings into practice: Implementing research findings in developing countries. *British Medical Journal*. 317:531-535.

<sup>171</sup> Imperato 1974; Imperato 1975; Roboff 1977.

access and delivery but create long-lasting, trusting relationships with nomadic groups so that they will engage and utilize these services? Moreover if health care services can be successfully delivered to isolated nomadic groups than they can surely be delivered elsewhere.

## Appendix I

- **2001:** Meningitis and measles epidemics result in launching of MSF immunization campaigns.<sup>172</sup>
- **2002:** MSF reports that 20% of children in Niger are chronically malnourished.<sup>173</sup>
- **August 2004:** Normally the height of the rainy season but there is scant rain and much of the millet crops are destroyed.
- **August 2004-October 2004:** Locusts eat and destroy what remains of the crops not devastated by the drought.
- **October 2004:** Normal harvest time. The Food and Agriculture Organization, the World Food Program (WFP), Famine Early Warning System (FEWS-NET) and the Comite Permanent Inter Etats de Lutte Contre la Secheresse au Sahel (CILSS) report a 7.5 percent decline cereal production in Niger for 2004-2005.<sup>174</sup> Though this was not a huge deficit on the national level, the international organizations issued a warning and called

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<sup>172</sup> Médecins Sans Frontières. 2001. Niger: Meningitis and Measles epidemics prompt MSF action. *MSF Activity Report 2000-2001*. New York: MSF. December 13, 2001. Available at [[http://www.msf.org/msfinternational/invoke.cfm?component=report&objectid=2DB9FD23-76DB-4A4A-91CAF1E306AD0BB8&method=full\\_html](http://www.msf.org/msfinternational/invoke.cfm?component=report&objectid=2DB9FD23-76DB-4A4A-91CAF1E306AD0BB8&method=full_html)] last accessed on April 14, 2006. Unclear if the vaccination campaigns reached nomadic groups, according to MSF “370,000 people were vaccinated against meningitis and 330,000 against measles” with another 600,000 vaccines distributed to local health authorities.

<sup>173</sup> Médecins Sans Frontières. 2002. Niger: “Plumpy nuts” save children’s lives. *MSF 2002 International Activity Report*. New York: MSF. November 2, 2002. Available at [[http://www.msf.org/msfinternational/invoke.cfm?component=report&objectid=FDE734FD-10F5-4004-B1692234D88CA888&method=full\\_html](http://www.msf.org/msfinternational/invoke.cfm?component=report&objectid=FDE734FD-10F5-4004-B1692234D88CA888&method=full_html)] last accessed on April 14, 2006. Plumpy nuts is an enriched food supplement.

<sup>174</sup> World Food Programme. 2005. Interim Report: Niger—A chronology of starvation. United Nations: World Food Programme. Available at [[http://www.wfp.org/newsroom/in\\_depth/Africa/Niger/050725\\_nigercrisis\\_timeline.asp?section=2&sub\\_section=2](http://www.wfp.org/newsroom/in_depth/Africa/Niger/050725_nigercrisis_timeline.asp?section=2&sub_section=2)] last accessed on April 14, 2006;

for government authorities and development organizations to intervene because the shortfall.<sup>175</sup>

- **November 2004:** Urgent appeal for emergency food is issued by the Niger government.<sup>176</sup> The first UN appeals for aid with little response.
- **January 2005:** Food is running out throughout many provinces, especially in the south. Millet prices, the staple crop food, reach record highs.<sup>177</sup> The government downplays the extent of the disaster and distributes millet at a subsidized price and says it wants to allow market forces to stabilize the economy.<sup>178</sup> Farmers still cannot afford food.
- **February 2005:** Emergency operation begun by UN World Food Programme with a capacity to feed 400,000 people.<sup>179</sup>
- **May 2005:** The first rains cause flash flooding, sweeping away many of the remaining cattle for many nomadic herders.<sup>180</sup> Second UN plea for food aid for Niger, requesting sixteen million dollars.<sup>181</sup>
- **June 2005:** No aid whatsoever has been received. People march through Niamey demanding food but the government refuses their demands. MSF releases emergency alert for aid.<sup>182</sup>
- **July 7, 2005:** People begin to flee to Nigeria. Seydou Bakary, while simultaneously saying that even a slightly less productive harvest would lead to a “nationwide catastrophe”, the Nigerien director of food aid tells the Associated French Press, “We should be cautious not to exaggerate the situation—there is chronic malnutrition throughout the country, even during the most productive harvests.”<sup>183</sup>
- **July 8, 2005:** G8 summit cancels Niger debt but there is no mention of the food crisis.
- **July 20, 2005:** Images of starving children begin to emerge and the UN increases its aid appeal to \$30 million, only \$10 million is received.

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<sup>175</sup> Ibid.

<sup>176</sup> Ibid.

<sup>177</sup> World Food Programme. 2005. Interim Report: Niger—Analysis of Cereal Markets in 2004-2005. United Nations: World Food Programme. Available at [<http://documents.wfp.org/stellent/groups/public/documents/ena/wfp073367.pdf>] last accessed on April 6, 2005.

<sup>178</sup> This downplaying of the extent of the food crisis seems to be a common theme at the outset of famine crises as demonstrated in the example of Zimbabwe’s food crisis in 1991 highlighted by de Waal 1997 as well as the Ethiopian famine of 1984 illustrated by Vaux 2001.

<sup>179</sup> Ibid

<sup>180</sup> Patetta 2005.

<sup>181</sup> For an interesting demographic survey of the impact of the drought on farmers in different regions of Niger, coping mechanisms, accessibility of food, and food consumption patterns see: World Food Programme. 2005. Excerpts from the Niger Comprehensive Food Security Vulnerability Assessment (CFSVA). United Nations: World Food Programme. [available at <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp073376.pdf>, last accessed on April 6, 2006].

<sup>182</sup> Médecins Sans Frontières. 2005. Niger: EMERGENCY ALERT: MSF calls for free food distributions for the populations most affected by malnutrition. New York: Médecins Sans Frontières. June 9, 2005. Available at [[http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=6021F033-E018-0C72-092BD0E5DC1BF953&method=full\\_html](http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=6021F033-E018-0C72-092BD0E5DC1BF953&method=full_html)] last accessed on April 14, 2006.

<sup>183</sup> British Broadcasting Corporation. 2005. No food aid as hungry flee Niger. BBC News Website. July 7, 2005. Available at [<http://news.bbc.co.uk/2/hi/africa/4655225.stm>] last accessed on April 14, 2006.

- **August 2005:** MSF declares that UN aid is not reaching those in need.<sup>184</sup> WHO establishes Niger Crisis Operations team.
- **September 2005:** MSF press release calling for more aid as situation worsens.<sup>185</sup> Nutritional survey done by Government of Niger, UNICEF and CDC shows that more than 15% of children between 6 to 59 months are acutely malnourished.<sup>186</sup>

### Appendix II: Other Narratives from Ariane Kirtley

- 1) **Urine medication:** In the same community of white Tuaregs of the Azawak, I witnessed a grandmother giving her granddaughter goat urine to heal her of what I think was a case of meningitis. It is common among white Tuaregs to use urine from all animals for treatment of throat problems, coughs, colds, etc. They may also use it as a disinfectant.<sup>187</sup>
- 2) **Buying blood:** I stayed in a larger village that had access to a health center, and that wasn't too far from a small city. Many Tuareg women told me that they were being told that they had to buy blood and inject themselves with it. I tried to inquire "why", and they said it was because they were "losing their blood." This [was] frightening to me, especially considering the risk of bloodborne disease, but I wasn't able to get a good explanation. The main explanation I could come up with is that pregnant moms were getting blood transfusions because they were losing blood during childbirth. But I'm not sure. And it appeared that anyone could just go to the health center and buy blood and have it transfused.

<sup>184</sup> Médecins Sans Frontières. 2005. UN food distributions in Niger not reaching those with greatest needs. MSF Press Release August 22, 2005. Available at [[http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=E2018CFF-E018-0C72-094AE33B15C3F850&method=full\\_html](http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=E2018CFF-E018-0C72-094AE33B15C3F850&method=full_html)] last accessed on April 14, 2006.

<sup>185</sup> Médecins Sans Frontières. 2005. Niger: MSF repeats call for rapid mobilization of aid agencies to increase assistance in areas of acute malnutrition. MSF Press Release. September 13, 2005. Available at [[http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=DECB05BD-E018-0C72-09BB9BE710561D5A&method=full\\_html](http://www.msf.org/msfinternational/invoke.cfm?component=pressrelease&objectid=DECB05BD-E018-0C72-09BB9BE710561D5A&method=full_html)] last accessed on April 14, 2006.

<sup>186</sup> WHO. 2005. Emergency Health Programme for the Food Crisis in Niger Situation Report #19. 13 December to 19 December 2005. Geneva: WHO. Available at [[http://www.who.int/hac/crises/ner/sitreps/English\\_SitRep\\_19\\_13\\_19\\_Dec.pdf](http://www.who.int/hac/crises/ner/sitreps/English_SitRep_19_13_19_Dec.pdf)] last accessed on 20 April, 2006.

<sup>187</sup> This is similar to what one marabout told Rasmussen, "All elements in nature, for example [even] the urine of all animals whose milk one drinks, contain medicine." The significance of goat urine is not entirely clear and neither Rasmussen nor Kirtley elaborate on it further. Rasmussen 2001, p.xxviii.

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