

Ethno-cognitive connections between HIV/AIDS and banana plants in the Bahaya agricultural society in north-western Tanzania

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Abstract

This paper focuses on ethno-cognitive connections between HIV/AIDS and banana plants in the Bahaya agricultural society that emerged from an anthropological study carried out in 2005–2006 in Nsisha, a rural village in Bukoba District, north-western Tanzania. The paper briefly describes the historical context of HIV/AIDS and how its onset coincided with a decline in the production of bananas, the historical, cultural and staple food of the Bahaya people. In addition, references are made in Luhaya, the primary language spoken in the region, to demonstrate that HIV/AIDS is communicated about within the context of socio-cultural, economic, and agricultural transition that resulted, amongst other things, in a sharp decline in banana production. It is shown that for the Bahaya, HIV/AIDS is yet another ecological challenge that coincides with a decline in soil fertility, diminishing access to land, increased poverty, food and nutrition insecurity, and a lower production of their long-standing cultural and staple food. The paper examines some of the possible reasons why HIV/AIDS is referred to as *ekiuka*, a combination of pathogens that destroy bananas. The paper concludes that HIV/AIDS and banana plants are cognitively linked and that understanding how people communicate about HIV/AIDS is important for understanding how HIV/AIDS is connected to the Bahaya agricultural livelihood and for implementing effective alleviation strategies.

Additional keywords: *ekiuka*, food and nutrition, health, poverty

Introduction

The aim and scope of this paper is to discuss ethno-cognitive connections between HIV/AIDS and banana plants among the Bahaya. For the purposes of contextualization, the paper outlines a brief history of agriculture and HIV/AIDS and shows that a changing agricultural system, affected by socio-economic forces, coincided with the onset of HIV/

AIDS in Buhaya. Since its onset, HIV/AIDS has pervasively and continuously affected the Bahaya people, and their perception of the illness and its impact are reflected in their language, Luhaya (Kaijage, 1993; Rugalema, 1999; Mutembei, 2001). The term *ekiuka* – used by the Bahaya to refer to a combination of pathogens that kill banana plants, their staple and cultural food crop – is also commonly used to refer to HIV/AIDS in Nsisha, the village where the study was conducted and in all of Buhaya. This paper contributes to research and policies that focus on the connections between HIV/AIDS, poverty, food and nutrition insecurity, and agriculture in Sub-Saharan Africa (Haddad *et al.*, 2001; Mutembei, 2001; Loevinsohn *et al.*, 2003; Müller, 2004) by providing an account of how these aforementioned connections are culturally perceived and communicated about in the context of rural Bahaya agricultural livelihood. I believe that focusing on and understanding how people affected by HIV/AIDS make sense of and communicate about the epidemic in the context of their agricultural livelihoods is important for the design and implementation of effective strategies that aim at improving the lives of people. By focusing on the ethno-cognitive links between banana plants and HIV/AIDS, I hope that the local and cultural knowledge revealed in this article can be used as an example of how to help bridge the gap between theory and practice, taking into account cultural cognitive knowledge, perceptions, and understandings that may be dismissed in the design and implementation of HIV/AIDS, poverty alleviation, and development strategies.

Conceptual framework of the research

An ethno-cognitive perspective comprises aspects drawn from work in cognitive and symbolic anthropology (Colby *et al.*, 1981), linguistic metaphors (Lakoff 1992), and Bahaya cultural history (Schoenbrun, 1993; see also Kaijage, 1993; Tibaijuka, 1997; Rugalema, 1999; Mutembei, 2001). In the context of this paper, an ethno-cognitive perspective refers to local ways of understanding the connections between HIV/AIDS and banana plants that are specific to the Bahaya ethnic group. These connections hereafter referred to as ethno-cognitive connections, form a matrix or epistemology that reflects Bahaya agricultural history and the Bahaya way of life. In addition, they show how Bahaya conceptualize, perceive and communicate about their worldview with regard to HIV/AIDS and banana plants through metaphors and other linguistic references. I specifically focus on the concept *ekiuka*. I begin my discussion with a focus on a brief history of agriculture in Buhaya, followed by a brief history of AIDS in Buhaya. By providing a short history of agriculture, specifically the changing Bahaya agricultural system and the decline in banana production, and a brief history of HIV/AIDS, I shall highlight and make clear to the reader the coincidence of the onset of HIV/AIDS and the decline in banana production, hence the sharing of the same metaphor within the ethno-cognitive conceptualizations.

Agricultural decline prior to the onset of HIV/AIDS in Buhaya

Farming systems in Buhaya were already in the process of change before the onset of HIV/AIDS (Kaijage, 1993; Schoenbrun, 1993; Tibaijuka, 1997; Rugalema, 1999;

Baijukya, 2004). Banana has been an important subsistence food crop in Buhaya since about 500 AD, and intensive cultivation of banana has existed in the region since about 1300 AD (Schoenbrun, 1993; Rugalema, 1999). Another important perennial crop in the region is indigenous coffee. This crop was cultivated primarily for cultural purposes prior to the colonial era and for commercial purposes during the German colonial era, and became an important source of cash, wealth and class distinction in Buhaya (Tibaijuka, 1997; Rugalema 1999). The soils in Bukoba District, including Nsisha, are derived from sandstone, shale, and quartzite parent materials, and are inherently infertile. They are porous, and given the high rainfall and the area's rolling topography are vulnerable to leaching and erosion. Because of the soils' low fertility and acidity, mulching and the application of cow manure are essential, especially for successful banana production (Baijukya, 2004).

For the past century, the traditional Buhaya farming system consisted of three types of parcels: *kibanja*, *rutabiro* and *rweya*. The *kibanja* parcel encompasses the Bahaya homes and cattle pens, and is traditionally the plot where banana, coffee, and beans are grown. The *rutabiro* or fallow plots are either attached to the *kibanja* or located elsewhere in the village, and are the plots where maize, cassava, beans, groundnut and sweet potato are grown. The *rweya* or open grasslands are used for bambara groundnut and perennial crops such as tea and trees, and for cattle grazing. The *kibanja* plots are approximately 0.5 ha; the *rutabiro* and *rweya* plots are generally smaller (Rugalema, 1999).

In the past, the *kibanja* served as the principal agricultural production unit, providing food for subsistence, and the *rutabiro* and *rweya* served as agricultural units where food was grown that supplemented household diets and which was used mostly during drought and famine seasons. From the 1950s onwards, the size of the *kibanja* plots has decreased progressively due to increasing population density and land pressure in the area, combined with the cultural and patrilineal practice of land inheritance whereby a father's *kibanja* is divided into portions bequeathed primarily to sons. In addition, the ability of the *kibanja* to provide enough food for subsistence and staple food crops has declined, and Bahaya farmers have become more reliant on the *rutabiro* and *rweya* plots to procure their food (Rugalema, 1999; Baijukya, 2004).

Cattle keeping in Buhaya, principally for the purpose of manuring the *kibanja*, declined due to the Rinderpest epidemics in the late 19th century. The decline during the past 50 years is attributed to common and frequent cattle diseases, inability to access or rely on effective veterinarian services, and less male labour involved in herding due to HIV/AIDS and engagement in off-farm livelihood activities. The overall decline in cattle keeping has hurt the traditional Buhaya *kibanja* farming system, especially since cow manure was an effective fertilizer for the production of banana and coffee on the infertile acid soils (Rugalema, 1999; Baijukya, 2004).

Changing agricultural practices

During the past 35 years, banana pests and diseases, including banana weevil (*Cosmopolites sordidus*), banana root nematode (*Radopholus goodeyi*) and Panama Disease (*Fusarium oxysporum*), have been responsible for a progressive decline in banana production,

causing a major shift in Buhaya agriculture. Farmers have become more dependent on the root and tuber crops that are grown on the plots that once were supplementary and on marginal lands. According to my study and the informants, chemical inputs have not helped maintain or improve soil fertility or prevent the death of banana plants from the various pests and diseases (*ekiuka*). Many informants stated that the use of chemical inputs to prevent and control the *ekiuka* that affects banana plants deteriorates old and infertile soils thus hindering future banana plant growth, thereby increasing food insecurity and accelerating agricultural and cultural transition. In addition, the banana pests and diseases and their effects have also forced Bahaya farmers to increasingly include non-farm activities to sustain their livelihoods. A shift in the main diet for most Bahaya in Nsisha, as stated by Rugalema (1999) and confirmed by our research, shows that people's main and daily food now centres on sweet potato (*enfuma*) and cassava (*ebiliibwa*), which once were considered food for the poor or acceptable for human consumption only during times of famine, respectively. This transition in diet from relying on the main staple of bananas supplemented by roots and tubers to a diet consisting largely of the latter is found throughout Buhaya (Tibaijuka, 1997; Baijuka, 2004).

The onset of HIV/AIDS in Buhaya

HIV/AIDS in Tanzania was first diagnosed in 1983 in Buhaya, which includes Bukoba Urban, Bukoba Rural, Muleba, and Karagwe, and the first reported HIV/AIDS death occurred in Nsisha in 1987 (Rugalema, 1999). The Bahaya were the most severely affected ethnic group in Tanzania during the onset of HIV/AIDS. In fact, in the 1990s jokes were made about the Bahaya throughout Tanzania as being an 'endangered species', given how heavily this ethnic group was affected by AIDS, and also due to the historical stigma of the Bahaya in terms of wealth, female prostitution, promiscuity, and affliction with venereal disease (Kaijage, 1993).

Although HIV/AIDS is caused by a biological pathogen, socio-economic factors enabled the virus and the syndrome to root and pervasively spread throughout Buhaya. Some of these socio-economic factors include the region's general isolation and neglect, the regional economic recession, decline of the traditional Buhaya farming system, political instability resulting in the Tanzania–Uganda War of 1978–1979 and its lasting socio-economic effects, and – in some cases – a degree of cultural and social tolerance of the occurrence of multiple sexual encounters (Kaijage, 1993; Tibaijuka, 1997).

The first people reported to have died from HIV/AIDS in Buhaya were not primarily farmers but persons who engaged in black-market trading, known in Swahili as *magendo*. *Magendo* occurred at the border between Uganda and Tanzania and reached its peak in the period 1978–1984, when Tanzania experienced acute shortages of most kinds of goods (Rugalema, 1999). Young women and men originating from various parts of north-western Tanzania were the primary participants in *magendo* and often sold their goods, including a popular and fashionable cloth used to make clothing called *Juliana*, in the rural areas at *emijajalo* or weekly markets. As HIV/AIDS progressed in the region, *Juliana* became the term for HIV/AIDS, as it was observed that those afflicted by the disease were the ones involved in *magendo* and trade of this particular cloth. The afflicted

persons became thinner and thinner in appearance, and the common term for HIV/AIDS became *silimu*, a derivative of the word 'slim'. *Silimu* was the common term for HIV/AIDS from the mid-1980s, as Juliana cloth waned in style (Kaijage, 1993; Rugalema, 1999; Mutembei, 2001). During the year of our research in Nsisha, I only heard people use the term *Juliana* referring to HIV/AIDS when talking about the history of HIV/AIDS and its first impact. I rarely heard Nsishans use the term *silimu*. Since the late 1980s up to the time of this study, Bahaya commonly referred to HIV/AIDS as *ekiuka* (Rugalema, 1999).

Ekiuka

As mentioned previously, *ekiuka* refers to the death of banana plants caused by banana weevils and nematodes, which started to cause a severe decline in banana production on the *bibanja* (banana farms), as my informants stated, at least 25 years ago. Similar to how chemical inputs did not effectively prevent *ekiuka* from killing the banana plants and protect or improve the soil, many informants stated that chemical inputs (biomedicine) do not prevent or cure *ekiuka* or HIV/AIDS, which affects and eventually kills the Bahaya. As Kisangu *et al.* (2007) found in their research, most people in rural Buhaya prefer traditional medicines to treat HIV/AIDS (see also Rugalema, 1999). As confirmed by my research, for many Nsishans the biomedical medicines that are used to treat HIV/AIDS have a limited or negative effect on people's bodies. In addition, many Nsishans mentioned that the biochemicals for treating HIV/AIDS have contrasting effects, because although they prolong life, they mask the symptoms of HIV/AIDS and sustain the silence around the disease, thereby perpetuating the replication of viral infection and human and socio-cultural destruction.

It is important to note that as HIV/AIDS' onset coincided with an already declining agricultural system its impact further accelerated this decline. As households became affected, overall household agricultural labour input declined exponentially. For example, if one member of a household becomes too ill to farm, not only his or her labour will be lost but also the labour of the person in the household who cares for the ill person (Tibaijuka, 1997; Rugalema, 1999). Often, the reduction in labour forces people to neglect and reduce farm plots and resort to cultivating faster growing root and tuber crops, which require less input than bananas. Neglect of maintaining the *kibanja* leads to deleterious consequences since the *kibanja* requires regular tending to maintain ecological equilibrium. A well-maintained *kibanja* prevents *ekiuka* from invading the banana plants thus allowing for sufficient banana yield to sustain household food and nutrition security as well as serving as an important source of income and cultural symbolism. This became clear when people commented on the impact of HIV/AIDS deaths in the village: "*ekiuka kyaindula ebibanja kuba bikamba*", which means "HIV/AIDS turns cultivated land into bush." In addition, the heavy impact of HIV/AIDS village mortality resulted in reducing the time spent on funerary ceremonies so that people can return to their farming activities. Comments such as, "*katulashuntama tulalyaki*", meaning "if we sit down we will have nothing to eat" illustrate a disruption of cultural patterns pertaining to death and burial and further amplifies this connection between the HIV/AIDS pandemic and agriculture

as well as highlighting a cultural transition.

This background provides a key to understanding how the Bahaya conceptualize their (agri)cultural transition in terms of local metaphors and events. Local ethnic-based knowledge provides the foundation for conceptualization of new phenomena that must be harmonized with local ways of understanding in order to make sense within the Bahaya cultural context. The rest of the paper consolidates this fact. I shall first describe how this study was conducted and then discuss my findings before concluding with policy implications from this study.

Materials and methods

The topic of this paper is part of an ongoing study focusing on the interconnections amongst widowhood, food security, HIV/AIDS, and rural livelihood strategies. The research was conducted in Nsisha in the period June 2005 – June 2006. Data were collected through participant observation, and structured and unstructured interviews of the inhabitants of Nsisha (Nsishans). The study started with a household census in which the head or the available adult household member of the 184 households in the village was interviewed. Based on the census data and discussions with village leaders and other Nsishans, I then held 97 formal and extensive interviews with widows and with women and men of various ages and social status.

Throughout the study I relied on key informants. These included village leaders, Nsishans who were open, easy to discuss with and helpful. I also received assistance from other natives living outside Nsisha, international experts knowledgeable on the research topic, and other professional experts on the culture and region including an agricultural officer and a soil scientist. At the beginning of the fieldwork and during interview sessions, whenever possible I conversed with people in Swahili. However, Luhaya is the native and primary language spoken in Nsisha and among the Bahaya. So during the interviews, the questions were translated and asked in Luhaya and informants' responses were translated from Luhaya to English or Luhaya to Swahili. The bulk of the fieldwork experience was based on listening and comprehending interviewees' life histories, gathering information, and understanding the history of Buhaya and Bahaya life prior to and during the time of HIV/AIDS.

In addition to gathering data on personal histories, the bulk of the questions focused on agriculture and environmental changes, specifically on changes in banana production, household food and nutrition, and poverty. The more I gathered and comprehended Nsishans' responses and learned about people's lives, family and village mortality, and common challenges faced by Bahaya agriculturalists such as changes in farming, land, soil fertility, crop production, poverty, and HIV/AIDS, the more I realized that the impact of HIV/AIDS, though severe, dramatic, and pervasive, was part of an eco-historical continuum and a sign of socio-cultural transition. In short, I learned that HIV/AIDS was but another challenge to adapt to, endure, learn from, cope with, and survive.

As research intensified with time and understanding I began to comprehend some Luhaya, and realized the dual meaning of *ekiuka* within the agricultural and HIV/AIDS contexts. At an early stage of the research I became aware of the significance of under-

standing the impact of HIV/AIDS within the context of Buhaya history, ecology, and agricultural life. For example, when a middle-aged widow expressed her concern over having HIV/AIDS, yet being scared to get tested, she said, “*ndakolaki kanakushanga nakwetwe ekiuka?*” meaning “what if I find out *ekiuka* is in the body?” I became very interested in exploring this agricultural metaphor and cultural expression, realizing that it meant an enriched, holistic, and integrated understanding of HIV/AIDS embedded in Bahaya life. It therefore became clear that this relationship was vital in understanding the association between agriculture and food security and an epidemic that has ravaged Nsisha and Buhaya in general. The following section discusses this association by emphasizing an ethno-cognitive perspective in comprehending an emergent phenomenon within the local paradigms.

Results and discussion

The focus and synthesis of the research information used for this paper can be summarized by an interviewee’s response to the question of how she viewed the impact of HIV/AIDS in Nsisha. Her response was: “*ekiuka kekyarugile omungemu kyakwata ichwe*”, which translated to English means “the insect moved from the banana crop and attacked us [human beings].” Based on the formal research interviews and informal conversations, most of the Nsishans I communicated with stated that they had been directly or indirectly affected by HIV/AIDS. In fact, very few (3) interviewees stated that HIV/AIDS had not had a significant impact on their close kin, extended families, or clan; in general these were the people that were most reticent during the interviews.

The concept of *ekiuka* shows that the Bahaya make sense of the HIV/AIDS tragedy in terms of an ongoing ecological reality which pre-dates the onset of HIV/AIDS and includes a high population density, a decrease in farm land area, soil fertility, assets, banana production, and an increase in poverty and agricultural disruption and change (e.g., Tibaijuka, 1997; Rugalema, 1999; Baijukya, 2004). So it became clear that the key to understanding the impacts and effects of the HIV/AIDS epidemic must be contextualized within a broader framework and understanding of Bahaya history, ecology and agricultural transition and change.

The above quote on the movement of *ekiuka* from banana to humans and numerous similar responses from Nsishans demonstrate that in their opinion, there is indeed a connection between diseased banana plants and HIV/AIDS. Furthermore, these responses also show that culturally and cognitively, Bahaya link the devastation caused by HIV/AIDS to the devastation caused by the decline in production of their staple food, banana. Moreover, the fact that both appeared at almost the same time makes it clear that the well understood concept *ekiuka* that previously applied to banana was borrowed to describe the new phenomenon. The imagery of a nematode and a weevil that infested banana, causing it to wilt and the emaciated HIV/AIDS victims, as captured in an earlier metaphor *silimu* mentioned above makes the comparison easier. Moreover, the fact that a poor banana harvest leads to poverty and poor nutrition, which in turn lead to risky undertakings such as making and selling local beer, and transactional sex (Tibaijuka, 1997; Rugalema, 1999) further reinforced the HIV/AIDS and banana connection.

Prostitution as an economic alternative shows, besides its deep connection with HIV/AIDS, that poverty and the pandemic disproportionately affect women. In one of the comments an informant said “*obunaku amukazi kalikuburwa obwambi agya kuhiga abashaija kityo nashoboro kwiwayo endwala*”, meaning “poverty on a woman can force her to go out with men and get the disease.” As further confirmed by our research, the overall decline of the Buhaya farming system, the impacts of HIV/AIDS and the increased poverty have forced people to seek off-farm activities. Women who occupy a marginalized and subordinated position in Buhaya society may resort to poverty-induced transactional sex in order to obtain household items such as salt, cooking oil, sugar, and flour. Many Nsishans I talked to, ranging in age from the early twenties to mid-thirties and born during the time of *ekiuka* (HIV/AIDS and low banana production), said that ‘contracting HIV/AIDS was like getting malaria’, and was a risk and consequence of a life of poverty. An elder informant in her fifties said that for the young and those suffering most from poverty, life is so hard that they take risks that make them vulnerable and susceptible to HIV/AIDS. This is captured in an informant’s comment “*norwo ndaikalao omumaisho ndaikalanta akili mfe kala*”, or “it is better that I die now than stay suffering.”

This fatalism and the risky behaviour deviate from the ordered and traditional way of life before the advent of *ekiuka*. When households are affected by HIV/AIDS, assets are disposed of, which furthermore exacerbates poverty and agricultural disruption and change. For example, people will often resort to selling cows to obtain money to continue care of the ill. This means that the household disposes of a form of security in terms of food and nutrition security, income, and an important green input for the maintenance of a productive *kibanja* (Tibaijuka, 1997; Rugalema, 1999).

Since bananas have formed the cultural core and staple food for the Bahaya for centuries (Schoenbrun, 1993; Rugalema, 1999; Baijukya, 2004), the destruction of such a significant source of food causes socio-cultural devastation, shock and change. In addition, a decline in banana production has led to food and nutrition insecurity. It is not that banana has a higher nutritional value than root and tuber crops in terms of macronutrients including carbohydrates, proteins and fats, in fact, these crops also have a low protein and fat content, but provide a larger supply of carbohydrates (Anon., 2008; Okigbo, 2008). However, in the past, banana provided an abundant supply of carbohydrates, and sweet potato and cassava supplemented and added diversity to the Bahaya diet.

A decline in banana production reflects the deteriorating ecology in terms of low soil fertility, increased poverty and decreased manure inputs. Since there are less bananas grown and the land in general produces less, there is less surplus to sell and trade. The lack of income from banana selling has forced people to rely on a meagre diet of sweet potato and cassava, supplemented by beans, which generally is the most common form of protein consumed daily. Fewer people have cows, drink milk and can afford to purchase protein sources such as fish and meat like in the past (Rugalema, 1999; Baijukya, 2004). Most people in Nsisha we talked to mentioned that the overall increase in poverty, low soil fertility, and decline in assets and income have resulted in food and nutrition insecurity and forced them to cut down on their meals from three to two per day. Some even said that in the morning they only drank tea without sugar, and only had one meal, in the evening, consisting of sweet potato and/or cassava mixed with beans. As Rugalema (1999) mentioned, and which was confirmed by our research, malnutrition is visible

among Nsishans, and has a particularly deleterious impact on children, on those who are weakened by health conditions, and on the aged. Food and nutrition insecurity and malnutrition have become a reality throughout Buhaya (Tibaijuka, 1997). With regard to HIV/AIDS, poor nutrition further weakens the victim's immune system, reduces their longevity and turns them into unproductive consumers of the little that is available.

The continual onslaught of HIV/AIDS has caused considerable disruption of Bahaya society and culture, specifically given the fact that it has deprived the elder generations of their children and future social security. The elderly people referred to this situation with statements such as “*endwala egi ekaija kwita abana baitu n'okushasa abazailé*”, or “AIDS is a disease that has come to kill our children and leaves the parents to suffer”, or “*lwaka abazailé*”, “the disease that deprives the parents of their children” (see also Rugalema, 1999). Similar to the *ekiuka* that affects and kills the banana plants, *ekiuka* that kills humans cannot be cured by chemicals (biomedicines). As Rugalema (1999) points out in his study of Nsisha and another nearby village, and as confirmed by our research, “Buhaya is being faced by two kinds of *ekiuka*; one on the *bibanja* (banana farms), the other among human beings” (Rugalema, 1999).

Conclusions

This paper demonstrates the presence of ethno-cognitive connections between banana plants and HIV/AIDS among the Bahaya of north-western Tanzania. By providing a brief history of agriculture and HIV/AIDS in Buhaya, we have shown that HIV/AIDS emerged and spread within the context of agricultural change, specifically a decline in the production of bananas, people's historical and cultural staple food, and in issues of socio-economic insecurity. Agricultural change, socio-economic issues, and HIV/AIDS have caused an overall livelihood change for the Bahaya. Bahaya conception and perception of the connection between ‘diseased’ banana plants and HIV/AIDS is reflected in their language, where they commonly refer to both as *ekiuka*, a combination of pathogens that kill their staple and cultural food and their people. This ethno-cognitive connection reflects how the Bahaya make sense of HIV/AIDS as part of an ongoing ecological continuum. This paper aims at communicating how Bahaya ethno-cognitively understand and make sense of HIV/AIDS as situated in the context of their history, culture and ecology. Furthermore, I hope that the insights presented in this paper together with the Bahaya ethno-cognitive connections and communication about the relationship between HIV/AIDS and diseased banana plants can be used as an example in other agricultural contexts. They may also contribute to research and policies focused on the interconnections between agriculture, food and nutrition security, poverty, and HIV/AIDS and help to bridge the gaps between theory and practice.

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