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Mining habitat, house and home during an East African gold boom: economic and emotional dimensions

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ABSTRACT

This article interrogates migrants' economic and emotionally entwined decision-making regarding migration and settlement in unfolding stages of a gold mining boom. Three Tanzanian gold mining settlements representing temporal, spatial and scalar differences along the gold mining trajectory are contrasted: an artisanal rush site, a mature artisanal mining settlement and Geita town, site of a large industrial gold mine. Our data derives from in-depth interviews with miners, traders, service providers and farmers supplemented by a household survey. Interviewees' verbatim narratives describing their work and family life are laced with feelings of both anticipation and apprehension. Strategic calculations and contingency thinking combine with emotional anxiety as they pursue efforts to 'get ahead' during the mining boom. Amidst the uncertainty of stressful work lives, and obstacles to secure housing and residence in infrastructurally deficient, unsafe and polluted mining environments, a 'deferred sense of home' surfaces in many mining settlement residents' narratives. Seeking a 'comfortable and secure home eventually' is a coping mechanism for bridging the gap between initial high expectations and their current material reality.

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Millions of Sub-Saharan Africans have partially or fully abandoned agrarian livelihoods over the last four decades in a process of deagrarianization, which mirrors past European, Latin American and on-going Asian migration trends.¹ The critical difference is that this African mass movement has not generally led to urban industrial employment. Instead displaced agricultural labour has been absorbed into low-paid informal sector services and trade.

However, during the 1990s, a distinct migration pattern began surfacing inconspicuously in remote mineral-rich rural areas, gathering momentum as international mineral prices for gold climbed to unprecedented heights up until 2013. Migrants gravitated to sites of rumoured mineral strikes. Alongside their mass entry into artisanal mining, African governments, prompted by the World Bank, began actively encouraging international investment in large-scale mines.²

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Spontaneous mineral rush settlements coalesced into an estimated 10 million African artisanal miners by 2008.³ Migrants intending to mine, as well as those destined for trade and service provisioning work, arrived with high expectations of economic betterment, while the material uncertainty and physical trials of daily life at a mining site and most notably the worries and hopes they have for their family members in the mining settlement were downplayed. Most migrant miners and residents of the mining settlements in our Tanzanian case study adapted to an occupationally specialised habitat that differed markedly from what prevailed in their original rural homes. Through population agglomeration, they evolved new home and work lifestyles, adapting and shaping their rapidly transforming rural-cum-urban habitats.

In contrast to Tanzanian smallholder peasant family farming that combines shared residential space with rural productive and reproductive work patterns of family members, migration to a mining settlement entails establishing autonomous accommodation and an economically viable livelihood. At gold rush mining settlements, most migrants are distanced from immediate family ties, pre-empting a sense of home, based on familial relations. In the context of a mineral-propelled economic boom, many move and adapt to a series of new gold sites, where housing is rudimentary and rarely invokes a sense of home.

Our focus is on habitat creation, housing and home-making of residents living in Tanzanian gold mining settlements based on qualitative and quantitative findings from the Urbanisation and Poverty in Mining Africa (UPIMA) research.⁴ First person accounts derived from in-depth interviews with residents are extensively quoted to provide a cross-section of residents' economic circumstances and feelings about their residential and working environment. Our aim is to explore mining residents' economic decision-making and emotion-led quest for security, happiness and not least status as they adapt to their occupational habitat, devise housing strategies and confront disillusioning constraints and obstacles to reaching a fulfilling 'sense of home'.

The first section of this paper probes the interaction between economic logic and emotional feelings, drawing on analytical insights of theorists Antonio Damasio and John Allen. The spatial context of a gold boom provides an especially illuminating window on emotions arising in new unfamiliar, uncertain circumstances. The second section focusses on the Tanzanian gold mining context and background about three gold mining study sites and our research methodology, followed by the third section in which mining residents' accounts of contrasting occupations and ages reveal hopes, fears, and other feelings about their lives in the settlements. The fourth section draws back from the personal stories to overview the demographic, occupational and housing characteristics of the three settlements based on our household survey findings. The penultimate section interrogates residents' emotionally-loaded trade-offs over the course of their household life-cycle between work mobility, residential stability and home-making, before concluding.

Theoretical turn towards emotions and feelings

Inter-disciplinary work coming to the fore in the twenty-first century embodies new findings about the motivational influences of emotions, which facilitates social scientists' efforts to discern and understand human behavioural patterns and trends, in response to contextual change and uncertainty. The pioneering work of Antonio Damasio⁵ has

facilitated social scientists' awareness of how individuals' bodily experience of spontaneous emotions arising from external stimuli influences human decision-making. He argues against the common Western social science dichotomy between reason and emotions. Feelings motivate, monitor and prompt negotiation of ways and means for realising individual aims and collective cultural change. They are embedded in evolving processes of 'homeostasis' defined as the powerful, unthought, unspoken imperative for enduring and prevailing in life. Feelings are individuals' subjective experience of their state of life. 'Deficient homeostasis is expressed by largely negative feelings, while positive feelings express appropriate levels of homeostasis.'⁶ Human feelings spark creative intelligence, imagination and reasoning, setting in train interactive sociality. The process is regulated by the human 'will to live' and symbiotic relationships between people; Damasio observes the course of human evolution whereby:

spontaneous homeostasis feelings such as hunger, thirst, extreme cold or heat, malaise, and pain ... pertain to the management of individual life states and signify deficient homeostasis. The need for food—and the search for food sources such as meat, that would yield energy reasonably fast, the need for shelter to provide protection from intemperate climate and create a safe haven for infants and children; the need to defend self and group from predators and foes—all were efficiently signalled by feelings related ... to parent-infant bonding and attachment and to fear. These feelings were then acted upon by knowledge, reasons, and imagination, in brief, by creative intelligence ... Most provoked feelings result from engaging emotions that relate not just to the isolated individual but to the individual in the context of others.⁷

John Allen's book *Home* offers a cultural and social analysis of the human need for secure and comfortable shelter for basic bodily functions including sleeping, eating, and raising children. Occupants 'feeling at home' is contingent on social cooperation and coordination in the realm of daily practicality and intimacy. Allen argues: 'home is not just a building or shelter but a vehicle for carrying emotions and status.'⁸ Home serves as a refuge from the outside world and often as a place of escape from the demands of work.

One's home represents a conducive place for emotional homeostasis, associated to greater or lesser degrees with mutual understanding, intimate care, concern, and shared identity of the occupants in the home. Interior tranquillity in one's domestic residence helps offset problems and threats of the exterior world. This sense of home may be realised in the company of family members, friends or convivial tenants.

The experience of emotions vary individually and by cultural group depending on their existing and changing material contexts. People in a region of the world where natural disasters such as volcanos, earthquakes and floods occur sporadically will react differently to a person who has never encountered such danger. Repeated exposure creates habituated reactions that become part of a shared culture.

Gold rush miners, as migrants from an array of ethnic backgrounds, are catapulted into a world of difference with regard to how they earn their livelihood and their interaction with each other. Much has been written about how miners construct their economic lives and commonly 'make their own luck' be it good or bad. Authors have been apt to draw attention to socially reckless and spendthrift behaviour, sometimes of a morally questionable nature.⁹

This article explores how mining residents are both shaped by as well as actively shaping their work, households and inter-personal patterns into a collectively lived

habitat, and how this unfolds in mining settlement contexts over the elapse of time since arrival in the settlement; household progression through life cycle stages; and the type of residential mining sites people choose to live in. Difficulties of attaining affordable housing often in remote, unpopulated areas as well as reconciling work demands with family and conjugal responsibilities are salient. In the process of habituating to these material realities, migrants' perceived housing needs and material expectations of living standards necessarily alter.

An associated question relates to where migrants emotively identify 'home', over the course of their work careers. The need for a 'home' in contradistinction to a 'house' is vital to the fulfilment of emotional needs for comfort and security. Having a house does not necessarily constitute a home. Migrants resolve this question in varied ways, creating new identities and cultural norms, which distinguish them from their historical past and other people in the spatial present.

In this article, 'habitat' is defined as acquired shared cultural values based on occupational norms and the commonly-held objective of economic betterment. 'Housing' denotes living accommodation where people sleep and perform daily bodily functions, e.g. eating, bathing, socialising and sharing space with other people be they family members, kin or residential sharers. The actual physical structure of the house depends on the historical evolution of the habitat. Finally 'home' is a residential dwelling place imbued with strong social ties and emotion in which the person feels comfort, physical safety, and a sense of identity and belonging.

Research context and field methodology

Unlike many other African countries, nothing points to significant pre-colonial gold mining activities in Tanzania. German colonial mineral prospecting identified gold deposits in the country in the late nineteenth century, but large-scale gold excavation was waylaid by the outbreak of World War I. Under British rule, a large-scale gold mine opened at Geita in 1936. Artisanal mining was illegal and continued to be the case after Tanzania's national independence in 1961. However, the coincidence of serious deterioration of the national economy following rising global oil prices and a subsequent surge in international gold prices led to the lifting of the government's artisanal mining ban in 1979. Several gold discoveries followed during the 1980s.¹⁰ Rural households coping with livelihood adversity were searching for alternative income-earning sources to cash-cropping. By the 1990s, with the easing of the government ban on artisanal mining, migrants started flocking to strike sites in the gold-rich northwestern part of Tanzania.¹¹ Migration intensified with the rise in international gold prices between 2000 and 2013.

All three of our case study settlements were in the gold-rich region of Geita namely: Ikuzi, a newly discovered artisanal gold rush site in July 2010. An estimated 13,000 miners arrived after hearing of the gold strike. At the time of our survey roughly 1000 miners were still at the site with a small traditional village population of 2700 nearby.

Second, Nyarugusu, a mature artisanal site, existed at the site of a small abandoned colonial mine revived as an artisanal gold rush site in 1983. The artisanal miners' wooden shafts, built to depths of 40–60 metres, were depleted by the early 1990s.¹² During our study in 2011–12, Nyarugusu and its satellite settlements numbered 25,000 people, constituting a small town. A gold strike only 10 km away from Nyarugusu in

Nyaruyeye, took place in 2011. Nyarugusu, was strategically placed to function as a service centre for the in-coming gold rush miners.

Third, Geita, location of the large-scale Geita Gold Mine that closed down in 1966, reopened in 2000 under the ownership of AngloGoldAshanti. At the time of our survey, the mine had 3,600 employees. Geita was reportedly the fastest growing urban area in East Africa, numbering 100,000 people.

Between 2010 and 2012, at the height of the international and Tanzanian national gold boom, we conducted qualitative interviews with key informants, focus group discussions and a random sample survey of 36 heads of households at each case study settlement. In-depth interviews with select survey informants representing low, medium and high earners and key informants in trade and service provisioning encompassed people from different ages, occupations and income levels. Our fieldwork began with key informant interviews with regional and district government officials, teachers, health workers, as well as local settlement, mine and religious leaders. We conducted a stratified random sample survey of 36 houses stratified between inner core and outer perimeter of the housing, which represented both early and later migrant cohorts. The survey data was processed in SPSS and tabulated in Excel. The personal interviews were conducted in Swahili, then transcribed and translated into English by the project coordinator. Our questions aimed to elucidate the economic logic and emotional feeling underpinning their decision-making with respect to: mobility and settlement growth, livelihood selection, family welfare goals, lifestyles and investment patterns. In the next three sections, we quote respondents verbatim to reveal the migrants' personal goals, motivations, attitudes and feelings.

Residents' personal accounts reflect a mixture of inter-related economic and emotionally-based decision-making, with the relative weighting varying depending on the age of the informants, the cumulative duration of their residence in mining settlements and responsibilities towards immediate and distant family members associated with their life cycle stage. Ikuzi represents a low degree of felt family responsibility with individual economic aspirations running high as opposed to the other two sites where the balance between individual economic success and feelings for collective familial welfare evidence many permutations.

'Feeling' the settlement

The following section includes extensive quotations from interviews conducted with mining residents. They talk about their work and home lives. Most mention material deprivation, uncertainty and dissatisfaction with the evolving habitat they live in, suggesting they are quite far removed from Damasio's emotional 'homeostasis' and Allen's 'sense of home'.

Ikuzi: gold rush migration and habitat creation

(i) Migration

For miners, travelling to one's first mining site amounts to a livelihood search in the face of fundamental unknowns about the location's environment and the nature of the work.

Migrants arriving late to a gold site were more likely to feel 'out of luck', having to struggle to raise cash for provisioning food and ultimately if they made the decision to leave, the costs of transport fares and returning home empty-handed were economically and emotionally taxing.¹³

Moving on to subsequent sites becomes easier but continues to pose uncertainty with regard to the new site's opportunities and risks. In Ikuzi fully reasoned decisions were impossible given the multitude of unperceived unknowns. Partial knowledge necessitated reliance on emotional 'instincts' be they optimistic hopes or pessimist fears as to whether the costs would exceed the benefits, relative to what they left behind. For most seasoned artisanal miners, mining meant moving, detaching oneself from the comfort and safety of home areas. They saw material hardship and separation from family as part of mining.¹⁴ Traders and service provisioners shadowed miners' movement.

The strike miners were followed by young rural female migrants. They usually came independently rather than as wives or girlfriends, migrating shorter distances than male miners, and relying on chain migration by joining friends they already knew. They sought work in the service sector, selling cooked food or employment as barmaids. Some with financial means opened guesthouses. Their ulterior motive for many was to meet and marry a rich miner.¹⁵

Entrepreneurs from nearby towns arrived with goods and innovative services to sell, expecting to profit from the elevated purchasing power of gold strike miners. In Ikuzi, some artisanal mine pit managers had entrepreneurial skills and speculatively invested in trade or services. The biographical profile of three of our informants is illustrative. One was a 38-year-old man with lower secondary school education and one year's training in nursing. He arrived in Ikuzi early in July 2010, at the outset of the rush and financially sponsored five mining pits and managed 27 miners. The miners referred to him as the 'Doctor'. Besides selling medicines, he administered first aid to injured miners. Another entrepreneur, a 43-year-old grocer, sponsored four pits and managed 28 miners, in addition to transporting and selling basic foodstuffs to the miners and women owning local kiosks who prepared and sold cooked food to the miners. A 50-year-old woman female entrepreneur ran a small guest house and had shares in three pits. All three emphasized how uncertain their business operations were.

As for near-by village farmers, the sudden presence of gold strike miners was a mixed blessing, offering a market for their food produce but also imposing pressure on their water and fuel sources.¹⁶ Settlement establishment arising from a gold rush developed with limited official awareness, let alone recognition and infrastructural support for the settlement in Tanzania. Migrants and villagers were largely fending for themselves in this advantageous and potentially contentious encounter.

Artisanal miners coped with injuries from accidents, exposure to sexually transmitted diseases, silicosis and mercury poisoning. Beyond the issue of finding gold or successful income-earning from trading or service provisioning, day to day living in mining settlements was a challenge. Rapid, high population influx into gold settlements exerted mounting pressure. Ikuzi rush site had no infrastructure, and quickly outgrew the local natural water sources. The ensuing lack of sanitation raised the risk of ill health.

the nature of miners' work is dirty ... I have customers that do not wash their clothes. When they become dirty they buy new clothes. This is a very good business opportunity but if they

try the clothes on, the clothes are soiled and I am unable to sell the merchandise anywhere else except the mining areas because I also have insufficient water to wash clothes here.¹⁷

Conflicts over mining rights, compensation demands, and disagreement between miners and adjacent communities were common. To build mine shafts, miners cut down trees in the local forest reserve much to the consternation of nearby villagers. Environmental degradation through mercury used to amalgamate gold posed a hazard to scarce water supplies. Deforestation occurred and lack of land rehabilitation typically followed in the aftermath of gold strikes.

(ii) Camp life in place of home life

At previously uninhabited sites, the miners rigged up make-shift rain-proof tarpaulin sheets for sleeping, which were far from comfortable, but at this stage of their mining career their main goal was profit not provisioning family needs.

Ikuzi's social life revolved around night-time bar-drinking. Relationships between men and women were generally a matter of mutual economic advantage underlined by emotional need for psychological support and social status. Women working in the service industry as food sellers, cooks, barmaids had far more regularised income flows than men. An artisanal miner's gold findings were erratic and having a girlfriend afforded him a way of having steady access to food and sex, whereas his girlfriend's sometimes threatening circumstances of being a women in a mine rush site meant she sought a sense of physical safety and emotional security.¹⁸

Miners' locational mobility was logistically sound in that they moved away from sites of diminishing returns to better prospects, and overall, those who continued to mine were doing so because sufficient numbers of them were finding gold and garnering material success. However, their awareness of the unknown and the unperceived with respect to the location of mineral outcrops in the natural rock formations, as well as the dangers ahead, were incalculable and a source of material and psychological insecurity.

No matter how experienced a miner was, luck was considered vital to success. However carefully they deliberated in their mining decision-making their work lives fluctuated between rags and riches. Seeking supernatural help from a *mchawi* (witchdoctor) to find a good mining site, ward off danger, or acquire luck in striking gold, was common in the face of enormous risk and unpredictability.¹⁹

However, this game of chance combined with most miners' practical belief that personal effort was essential for success. Their effort was demonstrated in working very hard, being persistent in terms of waiting for favourable gold outcomes rather than giving up prematurely, and using restraint when spending their earnings. Trying to circumvent heavy partying and womanising to save money was usually part of the maturation of an artisanal miner as a professional and the beginning of their financial accumulation strategy for housing investment.²⁰ But until then, drinking and socialising with one's mates and women generated geniality and reciprocity, which deflected from the lack of an emotional sense of home in their mining camp surroundings. Life became quite different as miners aged and took on the responsibility of a wife and children as evidenced in Nyarugusu.

Nyarugusu: opportunities and tensions of a post-rush gold settlement

Nyarugusu represented an array of situations in which residents accommodated their economic aspirations and the emotional stresses of gold boom mining. Nyarugusu was a major gold strike site in the 1980s. At the time of our study, its gold deposits were virtually depleted. Economic survival of households and education of children necessitated occupational flexibility as illustrated by one of the original settler's observations:

In 1968 [when I moved here] ... agriculture was the main activity. The indigenous people were the Wasumbwa, living from hunting and honey-gathering ... [In the 1970s] the first small gold rush happened 10 kilometers away. And when the gold was depleted there, some people came and settled in Nyarugusu. Other gold rushes happened elsewhere throughout the 1980s, as Nyarugusu continued to grow ... Mining overtook farming as the main livelihood activity ... Gold rushes still happen occasionally, but you don't see signs of wealth anymore. Most people who got rich earning good money in Nyarugusu chose to build houses in Mwanza [the regional capital] ... [Now] most of our livelihood activities are just getting by ... There are very few Wasumbwa [original inhabitants] left in Nyarugusu and the village consists of virtually all Tanzania's tribes. There are more women than men. The people that are really poor are the orphans who have lost both their parents to AIDS ... Access to water is an enormous problem. It's extremely expensive. One bucket costs Tsh 500²¹ in the morning and Tsh 700 in the evening from the water-sellers.²²

Nyarugusu's residents were mostly engaged in subsistence farming supplemented by male household members eager to respond to mining strikes elsewhere or retail trade serving farmers in the wider rural area and miners passing through to mining sites elsewhere. We encountered a young but experienced, itinerant gold rush miner/farmer travelling from his distant rural home to the nearby Nyaruyeye gold rush site where gold was discovered on 20 August, 2011. He arrived two weeks after the discovery when there were already 2000 gold rush miners amassed. Describing his mining expectations:

I arrived today at Nyarugusu [to mine at Nyaruyeye]. A fellow miner, who I have previously mined with at several locations called me about the new rush ... I will try to work at a good-producing pit where they need me because of my experience, preferably where my friend is working. If I get good money here, I will improve my house and do business back home ... I've mined at four previous sites. At the first, I earned good money, but in the beginning it all went on entertainment, booze and women ... In 2002 I got 3 million Tsh and began to build a house ... I live with my family ... and whenever I go away to mine I only stay until I've earned sufficient money, then return home with money for the family. At home we have three acres, growing rice, maize and cassava.²³

This miner represented a mature outlook, seeking mining gold rush opportunities but with an aim in retaining a foothold in agriculture with a wife and family based at a distant location from the gold rush sites he worked at for short periods of time. The diversified strategy lessened his risk while still giving him the time and mobility to mine temporarily, preferably at the beginning of a lucrative gold rush strike site.

A woman entrepreneur, originally from Kenya, was attracted to Nyarugusu's business prospects and similarly felt very positive about nearby Nyaruyeye's gold rush but had a stronger stake in residence near to the gold strikes as a middle-aged widow hankering to retire in the regional capital city. Nyarugusu's strategic location in an area of frequent scattered gold sites afforded her occasionally high levels of business earnings.

I own a restaurant in Nyarugusu and have seven employees. My main customers are miners. All businesses here are somehow influenced by gold mining. Since 2010, the population was static, then one week ago it increased significantly. My daily profit ranges from Tsh 100,000–200,000 per day as compared to Tsh 20,000 usually ... When the gold rush stops, the customers vanish and my business will decline ... I came to Nyarugusu in 2010 from Mwanza city after my husband passed away ... I'm planning to retire in Mwanza, as I'm only in Nyarugusu to harvest profits. It's not an ideal place to raise a family. Children are easily tempted to engage in gold mining or other related activities and forget about schooling. As for my widowhood, it is very difficult to be persuaded by miners even if they have money, as there are many STDs (e.g. AIDS) in Nyarugusu. I prefer employing boys, as girls quit the job when miners with money woo them away.²⁴

Another female entrepreneur selling pharmaceuticals (*dawa*) experienced similar bonanza circumstances. She was married with a husband who helped and physically protected her as she pursued her pharmacy business. She gained significant earnings to provision her family with middle-class amenities. Nyarugusu constituted a comfortable home for her and her family.

I am a trained pharmacist and midwife with five years professional training after completing secondary school in the national capital, Dar es Salaam. I opened my pharmacy in Nyarugusu, where I reside with my husband and youngest son in 2010 ... Generally my sales of medicines average 23,000 Tsh per day in my shop located in Nyarugusu whereas I'm earning Tsh 202,000 in Nyaruyeye. There are security issues, but I have arranged with my husband to come collect the proceeds from daily sales and keep me supplied with more *dawa*. I have built a seven-room house in Nyarugusu and am now planning to buy my family a new car.²⁵

Nyarugusu's occupational profile has altered flexibly over the previous ten years to become more trade, service provisioning and agricultural in content. In a group of highly successful visiting gold miners-cum-brokers, the paradoxes of Nyarugusu's existence as a settlement were recalled:

When I came to Nyarugusu in 1972, the place was a very small village of around 100 people ... Nyarugusu came into being because of mining and it still depends on mining to a very large degree. All areas around Nyarugusu are gold-rich and mining activities will continue for a long time into the future. But people who have settled here have started farming for subsistence. The second biggest income-earning activity in Nyarugusu is business providing services to miners. Nyarugusu's businesses would almost cease to exist if the mining stopped.²⁶

Nyarugusu's weak political and economic influence, despite being a populous settlement and a decades-long hub of artisanal mining, was confirmed by a local mining official:

Nyarugusu is the oldest artisanal gold mining settlement in Tanzania ... Many [miners] came from elsewhere and chose to build and invest elsewhere. The gold they produced was mainly sold in Kenya. Indigenous Nyarugusu villagers did not have an interest in gold mining activities. They engaged mostly in other activities such as farming and hunting and migrated to other areas. Thus, the changes that have taken place in Nyarugusu have been made mostly by non-locals.²⁷

Thus, Nyarugusu's residents had diversified to mitigate the diminishing supply of gold. Relying on agriculture for their basic food needs, they also had initiated commercial businesses ever ready to supply miners with equipment, food and accommodation

when gold strikes arose nearby. Some of the adult male population migrated out to strike sites further away leaving the sex ratio of the settlement female-biased. Residents had a low but manageable level of earnings which enabled them to maintain a stable residential location for their children. Nyarugusu had a small secondary school as well as primary schools. Most of Nyarugusu population saw themselves as distanced from the mining and business opportunities compared to residents of Geita, discounting the risks of daily life they would face in Geita.

Geita: Tanzania's gold mining hub and fastest growing city

Geita was the epicentre of Tanzania's gold boom at the time of our study. It had faced fluctuating fortunes in preceding decades. After national independence in 1961, President Nyerere chose a national development strategy based on agricultural production rather than large-scale mining. Geita Gold Mine (GGM) established in 1936 closed in 1966,²⁸ but the rise of the international price of gold in the 2000s led to AngloGoldAshanti investment in Geita in partnership with the Tanzanian government in 2000. This triggered large-scale in-migration. By 2012 the population had reached 100,000, registering 11% growth per annum. While many hoped to acquire employment at the large-scale mine, in reality, there was only 1800 full-time staff at GGM. Gone were the days of dormitory accommodation for miners. Instead staff were encouraged to rent or build housing in Geita town. Ironically 'GGM village' was inhabited by 300 mostly expatriate mining families. The vast majority of Geita's working population were self-employed service sector workers.

GGM was the main benefactor of social services in Geita town. Their community development focus included health and education infrastructure; road building; drilling of two boreholes, and supply of water pumps to ease the town's water shortage. Contrary to local expectations, GGM did not generate mass employment. Obtaining a job at GGM was extremely difficult. Nonetheless, GGM employees and their subcontractors' purchased goods and services catalysed a strong economic multiplier in the town, alongside a widening class divide.

(i) Defining home in terms of security or status

Our in-depth key informant interviews covered a range of GGM employees, traders, service providers and artisanal miners. Their stories of livelihood, housing welfare and views about Geita spanned a spectrum from economic fulfilment to failure.

A young, professionally-trained Tanzanian accountant employed at GGM described how his housing and family life had happily unfolded since he landed his GGM job, married and was starting a family:

I have been working at GGM for three years now. I just got married last month and we are expecting a child. So my dependents are expanding in addition to the support for my parents and grandmother and payment of my two brothers' school fees ... I've recently decided to build a house in Geita and bought a plot ... I've started saving Tsh 500,000 per month for house construction. I'm different from most GGM staff from outside Geita with good salaries who are building houses in Mwanza city. If I leave Geita in the future, I won't sell my house because it can always come in handy and in the meantime I'll rent it out.²⁹

Geita's service sector was teeming with migrants from all parts of Tanzania who calculated that Geita was a promising place to embark on a business career. Many had already coped with business failure, as exemplified by a primary school graduate from rural Kilimanjaro who moved to Geita five years before. After the collapse of his first business, he switched to the sale of spare parts for Japanese-manufactured cars.

The main customers for spare parts are car owners and mechanics working in the local garages ... Lack of reliable customers and very low turnover are problematic ... Overall the business is not promising. There is a downward movement of business with few customers and low sales resulting in poor turnover. I run the business with my wife, with no other employees ... I have no plans to stay in Geita or raise my family. I'm only looking for capital to start up a business in Mwanza.³⁰

The uncertainties of running a private business while raising a family, contrast with the negative attitude of a more educated, unmarried, Geita-born high school graduate with a diploma in project planning. Less pressurised by family commitments, he was nonetheless disappointed by his business prospects and adamantly felt that the daily realities of residence in Geita were incompatible with family life.

My father has been running a hardware business for the past 45 years. I started my own hardware shop in Geita in 2010. I work entirely on my own. My main customers are people engaged in construction activities. I don't get any tenders to supply GGM directly with goods. Expansion of mining activities has led to the increase of businesses in Geita, but the trend is limited by the fact that many GGM employees are not investing in Geita town ... The available infrastructure in Geita is inadequate compared to Geita's economic wealth from gold. Look at the bad conditions at Geita hospital, the town's lack of water, the state of the roads and security. Four people have been killed last month; two knifed, one killed during an armed robbery at a jewellery shop, and one killed at his home. Geita is not a good place to raise a family because of interaction between people with diverse habits coming from different mining areas. The leisure activities of men with money involves persuading women to have sex with them.³¹

A 37-year-old GGM hardrock blaster turned bar owner, who moved to Geita in 2002 and witnessed the town's economic transformation from the early inception of GGM, was upbeat about business opportunities, though well aware of the tensions between the town's debt-ridden and credit-rich residents. His wife worked in the family business. Nonetheless, he was pushing his children to aim for professional jobs helped by the availability of secondary school education in Geita.

I have a lower secondary school education and an on-the-job blasting certificate training at GGM from 2003 to 2006 but now run a bar and employ five barmaids. My wife also helps in the bar. I support my wife and three children as well as my parents in my home area ... I'm currently renting [accommodation] while building a five-room house in Geita ... I want my children to become doctors and teachers ... my customers pay cash on their salary days, then quickly start drinking on a loan basis until their next salary. They are not reliable about paying their debts, which makes my business vulnerable to collapse. [The hitch is that] the main wholesale suppliers of alcoholic and non-alcoholic beverages in Geita town sell strictly on a cash basis.³²

Before the reopening of Geita Gold Mine, artisanal mining had dominated for over 30 years. There were still many small-scale artisanal miners engaged in contested mining in the margins of GGM's mining in 2011. A 24-year-old artisanal miner in the process

of losing his livelihood through displacement described the worry he faced providing for his *in situ* extended family, acknowledging Geita is ‘not a good place to raise children’:

I moved to Geita in 1998 as a primary school student with my parents. I started to mine in 2002 when I was 15 because my father was sick and my family needed money. I mined at weekends and during vacations. The money I earned got me through school and helped me to buy necessities for my family at home. I initially did eluvial mining, but when I turned 18, I switched to ‘longa base’ (hard rock mining). Currently I have eight dependents: my wife and kid, my two unmarried sisters, parents and grandparents ... Artisanal gold mining was what kept Geita going before GGM came. Most people in some way or the other depended on earnings from artisanal mining locations around Geita. [Now] ... all the best mining sites are within the GGM area, leading to a lot of problems. If I don’t earn enough money for a week the family is in big trouble. I’m not sure what to do. I would like to farm and sell food crops, but I don’t have sufficient funds to start ... Cultural customs are changing. Prostitution and use of alcohol has risen. Young girls wear skin-tight miniskirts. Lots of local guys try to dress like employees at GGM. It is very obvious that some people have high salaries, good houses and modern lifestyles. And many people have died from AIDS.³³

(ii) Geita settlement transformation

To add to the frustrations of life in Geita described by the above three interviewees, a local miner-cum-gold buyer stressed the social and environmental impact of GGM’s establishment on Geita town:

GGM employees coming from other areas of Tanzania have had a significant effect on Geita, but locals, who are not employed with GGM, feel left out. Mining has made Geita very different from other settlements without mining activities. The environment is bad. There’s too much dust, blasting, poisonous black rain and HIV. Corruption within the local government has become rampant ... The behaviour of young men in the mines is not good, with lots of alcohol and drug abuse ... I don’t feel I have benefited a lot from mining although I have been able to build a house with five rooms ... If the artisanal mining areas around Geita close down, I will start to farm and keep livestock. And this is what I want to do when I retire. Many others will be looking for mining opportunities elsewhere ... I will continue to live in Geita as this is where I have built a house even though I do not see Geita as a good place to raise a family. It’s a place to look for money.³⁴

Having built a house in Geita to raise his family, he felt his efforts were compromised by environmental pollution. He nonetheless planned to remain in Geita where he had amassed savings and felt his family house in Geita had become home.

Another long-term local view was revealed in the reminiscences of a 47-year-old Magistrate Court clerk who migrated to Geita in 1972.

Back in the mid-1970s ... artisanal mining existed, but, because it was illegal, the miners kept a low profile. Then it was legalized ... The settlement remained small and people who came to mine returned to their rural homes to build houses. They rarely built in Geita ... [Now] the strong purchasing power of GGM employees has pushed up prices. People working at GGM have much higher standards of living than others, with better means of transport and modern houses. Food used to be affordable and cheap, but not anymore ... Artisanal miners are facing big problems. Whenever they find a new gold deposit, they come to realize that the area is within some company’s exploration or prospecting licence. Presently, the main conflicts in Geita in court are ... between artisanal

miners and the GGM. Many artisanal miners don't know where they can work anymore, which has led to a lot of 'fujo' (trouble) and many court cases due to their frustrations vis-à-vis GGM's concession. Also, conflicts between artisanal miners and farmers arise ... Some claim that their water is being polluted with chemicals discharged by GGM. Finally, there is a lot of 'wife stealing' by men with higher earnings than the husbands, which upsets home life.³⁵

The Geita interviewees expressed deep concern about the city's fierce economic competition, lack of adequate water supplies and environmental pollution alongside a high incidence of violent crime and endemic urban government corruption. Interestingly, residents' coping attitudes ranged from fear of the possible loss of livelihood on their families, to those keen to move to the regional capital with capital to invest. In between were others determined to stay in Geita despite its numerous negative drawbacks, Geita was a stage upon which buoyant winners and dejected losers and all those between these two poles were active agents in Geita's transition from a primarily artisanal mining site to a rapidly expanding urban agglomeration propelled by large-scale mining and service sector development.

Comparing spatial and temporal patterns of migration, settlement and housing

The economic growth of all three settlements was premised on the international gold boom of 2000–2012, but each settlement's experience differed in terms of the scale, duration and nature of mining activities. The sites evidenced a continuum from early artisanal gold discovery at Ikuzi where miners were willing to endure physical hardship, to Nyarugusu's persistence as a commercial centre at the service of other gold rush sites in the face of its own declining gold availability, to Geita town's exceptionally rapid growth resting on large-scale mining alongside increasingly marginalised artisanal mining activities.

Table 1 provides the baseline census population and the demographics of our household survey.

The comparatively older age of household heads in Nyarugusu reflects its earlier wave of in-migration in the 1980s and more stable population contrasted with the short duration of gold rush residence in Ikuzi. Ikuzi households had a smaller average household size, a strongly male-biased sex ratio and a low dependency ratio (Tables 2 and 3).

Table 1. Household heads' age, gender and birthplace.

	2012 census* pop	HH % male	HHH mean age	HHH age range*	% Born in settle- ment	% Home district	% Neigh- bouring district	% Distant district	Years resident at site
Ikuzi rush site	3,907	81	40.0	23–66	0	0	31	69	1.7
Nyarugusu mature site	24,802	81	51.8	21–82	0	6	8	86	23.3
Geita LSM gold town	100,582	78	46.5	19–75	8	3	14	74	21.6
Mean average		80	46.1	19–82	3	3	18	76	15.5

Source: UPIMA survey data, 2012.

*Tanzania 2012. *Tanzania Population Census*.

Table 2. Mean year of HHH migrant arrival and household composition (%).

Settlement	No. of native-born HHH	Mean year of arrival	Single %	Married no. of children %	Family 1–2 children %	Family 3–5 children %	Family >5 children %	3-generation families %
Ikuzi	1	2010	50	42	0	8	0	3
Nyarugusu	0	1988	6	19	39	33	3	11
Geita town	3	1990	8	17	31	42	3	31

Source: UPIMA survey data, 2012.

Table 3. Household size, gender composition and dependency ratios by site.

Settlement	HH size	Sex ratio	Average household members	Dependency ratio
Ikuzi – gold rush	3.2	1.30	3.1	9.8%
Nyarugusu – mature artisanal	6.4	1.04	6.1	37.6%
Geita – LSM gold town	6.2	1.24	6.3	40.4%
Mean average	5.3	1.19	5.2	33.2%

Source: UPIMA survey data, 2012.

Interestingly, Geita town inclined towards three-generational households, with grandparents on hand to ease childcare when parents were both working.

Focused concentration on goldmining in Ikuzi stands out with 69% of household heads engaged in goldmining as a primary activity in 2011. Nyarugusu's occupational profile in 2002 was similar with 61% primarily mining. By 2012, Nyarugusu's mining slumped to just 42% of primary occupations, on a par with farming (Table 4).

As a large, cosmopolitan city, Geita's mining profile almost doubled from 6 to 11% between 2002 and 2012. Its service sector dominated in both periods, expanding in size during the interim years. Interestingly, farming also expanded marginally as primary and secondary income sources, hinting at the problem of an underclass unable to make ends meet, given Geita's high cost of living.

Considering the housing patterns in all three settlements, miners and residents who benefitted from rising gold prices and buoyant service and trade sectors were liable to prioritise investment in better housing. Nyarugusu evidenced decades of established residence leading to a stock of local, self-built houses with permanently fixed corrugated iron

Table 4. Heads of households' past and existing primary and secondary income sources: 2002 and 2012 (%).

	Income Source	Mining	Trade	Services	Farming	Not working
Ikuzi						
2012	Main	69.4	19.4	5.6	5.6	0.0
	Secondary	16.7	25.0	5.6	36.1	16.7
Nyarugusu						
2002	Main	61.1	2.8	8.3	22.2	5.6
	Secondary	5.6	11.1	0.0	41.7	41.7
2012	Main	41.7	5.6	11.1	41.7	0.0
	Secondary	33.3	16.7	2.8	41.7	5.6
Geita						
2002	Main	5.6	16.7	36.1	22.2	19.4
	Secondary	2.8	2.8	8.3	22.2	63.9
2012	Main	11.1	13.9	47.2	25.0	2.8
	Secondary	11.1	19.4	11.1	27.8	30.6

Source: UPIMA Survey, 2012.

roofing as opposed to those which had roofs that were held in place by large, heavy boulders. In most cases households had mud as opposed to concrete block walls.

Gold rush miners in Ikuzi were uncertain how long the gold rush would last and whether they would be evicted from the site, so over 90% rigged up make-shift shelters of rain-proof tarpaulin sheets on flimsy wooden frames to sleep under. Housing investment was negligible. When they left the settlement in search of gold elsewhere, they took their tarpaulins with them.

By contrast in Geita, virtually all houses were made of superior building materials of brick or cement offering permanence. Only 3% were made of sun-dried mud bricks. House rental in Geita was comparatively high (33%), while house ownership was lower, given the shortage of land for building and the higher standard of materials required. Nyarugusu's housing arrangements altered gradually over time, leading to 86% house ownership at the time of the survey. Most residents took years to complete building their houses.

Multiple house ownership in different locations was a direct indicator of financial status and indirect indicator of mobility, pointing to who had travelled widely and gained economic success. Ikuzi miners had the strongest tendency to own houses elsewhere, not surprisingly given their makeshift accommodation at mining sites. This applied to traders as well who tolerated the bad infrastructure of mining sites with the hopes of better living conditions elsewhere in the future.

Miners were most likely to have house investments elsewhere, followed by traders in every settlement. Geita had lower house ownership amongst service provisioners and traders. It seemed surprising to see farmers and retired household heads with the highest incidence of second homes but both household head categories were born or lived in Geita before the gold boom and subsequent migrant population influx, and had seniority access to land.

Evolving migrant households during a gold boom: how does it end?

Having presented the micro view of individual residents and the macro perspective of settlement rates of growth of population alongside occupational and housing patterns, we are in a position to ask whether homeostasis was being achieved in settlements? Migration to mining sites had been spurred by high hopes of material betterment and comfort. Our interviews revealed that generally people had negative feelings about their residential habitat, suggesting a lack of homeostasis. Mining settlement constituted a select sample of people who had nonetheless decided to stay on despite their feelings of negativity. Others who had already left would have had various reasons for departure including: illness, home sickness, or failure to find a viable livelihood, while others moved on for more positive reasons of seeking a more mineral-rich mining site offering better opportunities. The remainers wrestled with housing and environmental constraints.

Allen's concept of a 'sense of home' embodies the concept of homeostasis encompassing comfort, safety and general family well-being which begs the question of how mining settlement residents reconcile all the negativity they feel towards their residential locality: a question explored below.

Feeling at home: when and where?

A house is not necessarily one's 'home' and multiple house ownership, as well as people's immediate contingent circumstances depended on place and age, marital status, number of children and occupation of the informants. To provide a uniform reference point, we asked the question of 'where will you retire in your old age', which entails consideration of home as a place of comfort, safety and personal self-identity.

The Ikuzi survey respondents, living in physically uncomfortable makeshift housing, were least likely to select their current location (5%). Forty-two percent entertained the idea of returning to their home area, whereas 53% chose 'elsewhere', referring primarily to towns and surprisingly a large portion, thinking confidently, were aiming for Dar es Salaam.

In stark contrast, a majority (64%) of Nyarugusu's residents saw themselves continuing to stay in their current location, a minority (14%) harboured an attachment to their birthplace whereas 22% wanted to head to towns, notably Dar es Salaam and other unspecified places.

The feelings of respondents in Geita town were lodged in-between with 53% expecting to stay in Geita, 11% preferred return to their birthplace and another 36% wanted to settle in other urban locations. The strong preference for urban areas was notable despite the many complaints people had about the town. There was inertia to move away from Geita, if the household head had already invested in housing there.

Overall, 59% of the 108 household heads surveyed anticipated old age retirement in another place, most frequently a nearby district or regional town or even the commercial capital, Dar es Salaam, rather than spend their retirement in the mining settlement. In Tanzania urban dwellers customarily retired to their rural home areas. Having grown used to the sub-culture of highly monetised mining settlements, many expressed feelings of estrangement from village norms and wanted to retain distance from rural kin who they anticipated would lean on them financially.

Compared to the on-going gold boom settlements of Ikuzi and Geita, Nyarugusu residents stood out with 64% content or resigned to staying in Nyarugusu. They had pragmatic reasons for being more rooted to their existing settlement given ownership of reasonably-sized houses. Most lacked investment capital for house investment at a more desirable location. The vast majority of Tanzanians did not receive an old age pension and had to continue working as long as they could. Nyarugusu's gold supplies had dwindled decades ago. Out of necessity residents had become just as much farmers as miners, practising diversified income-earning in farming and trade alongside involvement in off-site mining activities for some. The longevity of their settlement was based on occupational diversification with an enduring tie to the land through farming and in a few cases ownership of mining claims in surrounding areas. They were perhaps the closest to reaching a pre-retirement 'sense of home' albeit in a quasi-mining context tinged with disappointment about foregoing the summits of gold boom success.

Placating emotional discomfort

Given Allen's argument that humans are essentially 'home-minded', desiring residence in a place where they feel comfort, security, and control, we must ask why the findings from

our three gold boom settlements seem to counter his persuasive theory. Most of our informants lived in accommodation where they experienced emotional discomfort, insecurity and qualms about the safety and welfare of their families. There were several reasons for this state of affairs.

Generally, the pursuit of mining opportunities was prioritised over domestic comfort. Migrants gravitated to the mining sites to participate in gold-related activities directly as miners or indirectly as entrepreneurs or service providers. Emotional energy spent on attaining comfortable accommodation was constrained by time, money and housing availability.

Thus, incoming migrants generally harboured low housing expectations. In Geita, inordinate time delays involved in obtaining a plot and building a house were the norm, whereas Ikuzi migrants were temporary residents not contemplating on-site house investment. Most Nyarugusu residents had migrated years before, enabling them to be in possession of durable, secure housing, but they contended with poor water availability and inadequate service infrastructure.

Trade-offs between work mobility and residential stability and home-making prevailed in all three mining settlements. Calibration between the two depended heavily on migrants' age and family life stage. Young, unmarried men at Ikuzi gold rush site were less concerned with home stability compared with older household heads with wives and children, who worried about safe and decent family housing.

Infrastructural and environmental concerns were at issue. Mining settlements, particularly rush sites, are usually set in remote inhospitable locations, harbour all sorts of uncertainties about basic needs provisioning notably: high food prices, water shortages, combined with worries about financial insecurity and physical danger. Furthermore, the prevalence of heavy drinking, prostitution and crime concerned parents raising children. Several key informant interviewees stated their intention to move to a more morally-minded location as soon as they could financially do so. In effect, many people were deferring rather than ignoring the need for comfortable and safe housing.

In the first instance, multiple house ownership afforded families a useful foundation for economic diversification and accumulation strategies, and a coping strategy when *in situ* productive opportunities waned. Multiple house ownership was also part of people's 'safe and comfortable home' agenda. People chose places to build houses beyond the mining settlement to position children in 'good schools' away from the 'immoral' gold settlement environment, often coincidentally establishing a foothold in a favoured location for retirement.³⁶

Ideal locations, be they rural home areas or more often urban areas with good infrastructure, service amenities and well-constructed houses epitomised *raha* (comfort). Migrants who managed to get ahead financially, secured the comforts of home in a place of their choosing. Those who retired as mining entrepreneurs to cities joined the ranks of Tanzania's rising urban middle class.³⁷ Unsuccessful mining settlement residents were more likely to return to their natal homes at retirement or earlier if they ran out of money, suffered an injury or illness or felt homesick.

Our field findings indicate that gold boom mining was both a source of attraction and revulsion. Migrants' economic activities in mining settlements aimed at economic enhancement to improve their families' material standards of living, while knowing that residence there could perversely jeopardise their family's well-being and undermine

their emotional resilience. People's concerted efforts to optimise their earnings and build houses at preferred locations, in part reflected the felt emotional discomfort with residence in mining sites. Many strategized to prevent or at least lessen exposure to mining settlements' corruptive influence on their families.

Conclusion

This article's originality emanates from the application of a theoretical framework based on the recent writings of Damasio and Allen regarding the role of emotional feelings' in generating cultural and social evolution. Their theoretical insights buttress our analysis of three Tanzanian mining settlements, involving the economic decision-making and emotional feelings of the mining residents generally, rather than being limited to mining households. The study's survey findings reveal marked differences in migration and occupational patterns at the three locations. Extensive first person interview quotes from mining settlement residents speaking 'in their own words' describe their aims and frustration.

Gold boom periods are a revealing backdrop for the exploration of how economic logic and emotional feeling propel mining residents' decision-making. Gold discoveries alongside the rise of exceptionally high prices for gold attract people towards challenging unfamiliar environments, as exemplified historically in many parts of the world.³⁸ The nineteenth century Californian and Australian gold rushes have been especially well-documented.³⁹ Post-independence Tanzania had earlier experienced a localised gold boom in Nyamongo during the 1970s–1980s described by Chimhete.⁴⁰

Habitat creation unfolds in the course of pursuing mineral-related livelihoods. The habitats that migrants fashion and their individual migration journeys, spurred by aspirations for achievement, betterment and happiness coalesce into a collective mass phenomenon, which inevitably generates advantageous economies of scale as well as uneven and clashing welfare outcomes amongst the burgeoning or contracting population during the mining settlement cycle. Furthermore, perplexity arises because there is always the possibility of being in a better mining location, which stands in the way of the individual migrant's realisation of an *in situ* sense of home. Emotionally sublimating the immediate felt need for a secure and comfortable home, many reconcile the quandary by concentrating on work and accumulation of savings for future home-making. With determination and luck, their forestalled sense of home may end with realisation of a comfortable house in a far more desirable habitat and location.

There is an irony in individual economic optimising behaviour in mining settlements where population pressure and work expediency leads to scarcity, escalating prices of goods and services and environmental degradation. A trade-off is achieved by enduring a trying life now if there is hope for a far better life later. Furthermore, acceptance of competition as well as cooperation to get ahead in mining settlements builds social consensus about the legitimacy and desirability of 'getting ahead'. The implication is a strong likelihood of iniquitous outcomes, which, in our Tanzanian case study, ran counter to agrarian egalitarian values still frequently mentioned in popular discourse.

Damasio argues homeostatic biological and cultural systems compatible to human survival inform individual and collective life trajectories, contributing to symbiotic relationships between people and enhancing human welfare.⁴¹ But homeostatic

systems evolve gradually through trial and error over the course of the migrants' life times and the country's trajectory of economic change. Viewing the outcome of just over a decade-long gold boom, is likely to unmask as much security and comfort as it reveals insecurity and discomfort. Individual psychological trajectories converge with cultural evolution for better or worse at any given moment and must be shaped by enlightened and equitable public policy towards a positive homeostasis.

Most of our interviewees recounted emotional disquiet and experiences of material deprivation in the mining settlements. Our survey findings revealed a wide range of housing standards from tents to houses of temporary or permanent materials, but material evidence suggested that some were achieving a rising standard of living with improved family housing and education for their children. Tanzania had experienced two decades of entrenched agrarian stagnation between 1980 and 2000. The economic stimulus of the gold boom between 2000 and 2013 improved public revenues, expanded road-building and boosted medical and educational health provisioning. Successful miners not only built comfortable homes at their retirement destinations but went on to invest in entrepreneurial ventures in rural and urban areas, and generated an economic multiplier effect that benefitted traders, service providers and the regional and national economy.

True, many failed and returned to their villages, went elsewhere or abandoned mining. They similarly contended with emotionally-charged circumstances. Some were likely to have travelled back to their natal homes insolvent, ill, homesick or obliged to return to address the needs of their relations. Their stories have yet to be told, tucked away in their unconscious and conscious thoughts, but nonetheless influencing their decisions and actions in the unfolding evolution of homeostatic biological and cultural balance.

The frenzied growth of mining settlements as occupational habitats, the fluctuations of economic well-being in sub-standard housing while aspiring for far better material accommodation puts Allen's 'sense of home' and Damasio's 'emotional homeostasis' in a new perspective. In Tanzanian agrarian societies people traditionally identified home as their ancestral birthplace, whereas in mining circles many adopt a futuristic approach to home as an end to their quest to get ahead. While some still seek to enjoy their old age in a place connected with past feelings of belonging, growing numbers are likely to choose a desired location for building a house that promises status and a shared destiny more aligned to their career-long occupational ties. This is especially the case when a migrant has spent years accumulating earnings making it possible for their desired house and emotional home to finally converge.

Notes

1. Bryceson, "Deagrarianization and Depeasantization," 368–377.
2. Bryceson, et al., *Mining and Social Transformation*; Bryceson and Mackinnon, "Eureka and Beyond," 513–527.
3. Hayes, *Artisanal and Small-scale Mining*.
4. Bryceson, et al., "Unearthing Treasure," 631–649.
5. Damasio, *Strange Order of Things*.
6. *Ibid.*, 12.
7. *Ibid.*, 189.
8. Allen, *Home*, 8.

9. Hill, *Gold Rush*; Ell, *Gold Rush*; Gray, *Gold Diggers*.
10. Kulindwa et al., *Mining for Sustainable Development*.
11. Chachage, "Meek Inherit the Earth," 37–108; Bryceson and Jønsson, "Gold Digging Careers," 379–392.
12. Bryceson and Mwaipopo, "Rural-Urban Transitions," 158–174.
13. Jønsson and Bryceson, "Rushing for Gold," 249–279.
14. Bryceson and Jønsson. "Gold Digging Careers," 379–392.
15. Bryceson, Jønsson, and Verbrugge, "Partnership or Prostitution," 33–56.
16. Fisher, "Occupying the Margins," 735–760.
17. T.K., 34-year-old male used clothes salesman, primary school education. Interviewed 6 July 2011.
18. Bryceson, Jønsson, and Verbrugge, "Partnership or Prostitution," 33–56.
19. Bryceson, Jønsson, and Sheridan, "Miners' Magic," 353–382.
20. Jønsson and Bryceson, "Rushing for Gold," 249–279.
21. US\$=TSh 1275, as of January 2012. (www.w-rates.com. Accessed 1 July 2021).
22. K.M., 72-year-old male local farmer. Interviewed 6 September 2011
23. J.J., 34-year-old itinerant artisanal gold rush miner/farmer, normally resident on a farm in distant rural Kagera, married with two wives and three children. Interviewed 4 September 2011.
24. T.J. 35-year old restaurant owner from the regional capital Mwanza city, lower secondary education. Interviewed 4 September 2011.
25. J.L., 52-year-old pharmacist. Interviewed 4 September 2011.
26. Focus group of four miners from Katoro: A.J. 35 years, Sukuma, born in Bariadi, mined since 1996 at nine locations; K.M., 60 years, born in Geita, mined since 1972 at 13 locations; M.J. 29 years, Sukuma, born in Bariadi, mined since 2003 at 8 locations; J.J. 34 years, Sukuma, born in Bariadi, living in Chato, mined since 1997 at 8 locations. Interviewed 4 September 2011.
27. Secretary of the Mwanza Regional Miners Association (MWAREMA) headquartered in Nyarugusu. Interviewed 8 September 2011.
28. Lemelle, *Capital, State and Labor*.
29. G.M., 30-year-old Chagga GGM employee, born in Arusha. Interviewed 3 August 2011.
30. F.K., 26-year-old Chagga businessman. Interviewed 3 September 2011.
31. S.E.S. 29 years old unmarried Chagga hardware shopkeeper born in Geita with secondary school education and a diploma in project planning and management. Interviewed 8 September 2011.
32. D.K. a 37-year-old Sukuma born in nearby Misungwi District, married with one wife and three children. Interviewed 3 September 2011.
33. S.S.T., 24-year-old married male artisanal miner, born in Geita region, primary school educated. Interviewed 10 July 2011.
34. E.M., 50-year-old local artisanal miner-cum-gold buyer, primary school education with wife, 3 children and 4 grandchildren. Interviewed 10 July 2011.
35. R.N.M., 47-year-old Magistrate Court clerk from Kigoma. Interviewed 13 July, 2011.
36. Jønsson and Bryceson, "Beyond the Mining Site," 2–23.
37. Melber, *Rise of Africa's Middle Class*; Mercer and Lemanski, "African Middle Classes," 429–438.
38. Lahiri-Dutt, *Between the Plough and Pick*.
39. Bryceson, "Artisanal Gold Rush Mining," 31–61.
40. This gold boom primarily involved the *in situ* Kuria population rather than large numbers of migrants. "[T]he gold boom in Nyamongo did not benefit the rest of the economy, not only because the area developed as an enclave society, but also because the gold sector in Nyamongo developed as an underground economy with little linkages to the national economy' Chimhete, "Prosperity," 573. See also Chimhete, *Gold Mining*.
41. Damasio, *Strange Order of Things*.

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