ASHLEY MACRANDER

5. SPATIAL (IN)JUSTICE

Mapping Post-Apartheid South African Tertiary Education Access

> Apartheid was a new term but an old idea. It literally means "a partness" and it represented the codification in one oppressive system of all the laws and regulations that had kept Africans in an inferior position to Whites for centuries. What had been more or less *de facto* was to become relentlessly *de jure*. The often haphazard segregation of the past … was to be consolidated into a monolithic system that was diabolical in its detail, inescapable in its reach, and overwhelming in its power. (Nelson Mandela, 1994, p. 111)

INTRODUCTION

Prior to 1948 and the introduction of *de jure* apartheid, South Africa already operated under a *de facto* culture of racial segregation. Apartheid solidified and sanctioned these social barriers, especially in education where apartheid policy fostered "separate [intellectual] development for separate ethnic groups" (Fataar, 1997, p. 340; Wieder, 2001). Accordingly, institutional rights in postsecondary education during the apartheid regime were largely dichotomised along racial lines. Predominantly White teaching and research institutions were characterised as "insulated islands of racial privilege" whereas, Black universities were "designed as instruments of racial ideology and state policy" (Wieder, 2001, p. 628). The Extension of Education Act exemplified this practice. After its passage in 1959, the government formally adopted control of admission into tertiary education in order to constrain Black African student access into the nation's most prestigious institutions which were predominantly White (Woodrooffe, 2011). The Act's effect is evidenced over time. In 1956, 2,300 Black African students out of ten million were enrolled in postsecondary institutions – less than one percent. By 1983 this number increased to 32,700; however, by 1990 the enrolment rate for Black Africans was still hovering at only 9%, whereas the participation rate for Whites was 60% (du Toit, 2009). Coloureds and Indians comprised the remainder of the college-going population with participation rates of approximately 13% and 40%, respectively (MacGregor, 2014). In 1994, the apartheid regime was dismantled and the tertiary system, specifically, has been challenged to meet goals of equity, human resource development and efficiency to ameliorate past injustices committed against the Black African majority (Department of Education, 1997; Herman, 1995).[1] The 2001

R. M. O. Pritchard et al. (Eds.), Diversity and Excellence in Higher Education, 71–90.

National Plan for Higher Education severed direct state control of tertiary education and established cooperative governance with postsecondary institutions. This new relationship between the government and tertiary education recognised institutional autonomy and limited the role of the state to "systematic planning, funding, and quality assurance" (du Toit, 2009, p. 629; Hall & Symes, 2005). Additionally, the 1997 Higher Education Act instituted a new system of postsecondary admission committed to equality of access for all South Africans (du Toit, 2009). Today, the South African government continues to restructure tertiary education through the creation of policies meant to redress historical inequalities by (1) increasing participation rates for students from disadvantaged racial groups; (2) decreasing the imbalance between Black African and female faculty and staff and their White, male counterparts; and (3) ameliorating structural inequalities between historically Black African and historically White tertiary institutions (Department of Education, 1997; Woodrooffe, 2011). Tertiary education funding facilitates these policy goals. The new funding framework for postsecondary education, introduced by the Ministry of Education in 2004, was devised to mitigate inequalities among historically Black African and White institutions and the student financial aid programme was designed to specifically target students who were denied equal access to tertiary education based on socioeconomic status and racial group (International Education Association of South Africa, 2012; Ministry of Education, 2004; Wangenge-Ouma, 2010).

Yet, despite these and numerous other reforms, discrepancies in participation rates among young South Africans persist. Sixty percent of Whites attend tertiary education, but only 11% of Black Africans do (International Education Association of South Africa, 2012). Literature on post-apartheid South African tertiary education identifies four general access barriers: poverty (Breier, 2010; Letseka et al., 2009; Lindow, 2006; Nimubona & Vencatachellum, 2007; Wangenge-Ouma, 2010), indigenous language use (Greenfield, 2010; Koch & Dornbrack, 2008; Posel & Casale, 2011), inequity in primary and secondary school (Fedderke et al., 2000; Holtman et al., 2005; Spaull, 2012; Yamauchi, 2005, 2011), and parental death (Bicego et al., 2003; Case et al., 2004; Chuong & Operario, 2012; UNAIDS, UNICEF, & USAID, 2004).

BACKGROUND LITERATURE

There is a feeling in South Africa that education, as a common experience, can serve to connect diverse students across the nation. More specifically, tertiary education can "foster social connectedness allow[ing] members to promote social cohesion within the university setting and by extension society" (Woodrooffe, 2011, p. 181). Thus, since the 1990s South African education has served as one facet of the government's strategic plan for social change from apartheid to a non-racialised democratic state (Herman, 1995). However, postsecondary education can only function as a panacea for South Africa's historical ills when it has rid itself of

inequalities in access that are reminiscent of apartheid. Researchers have examined the roots of postsecondary access inequality in South Africa through many different, but interconnected, lenses, including poverty, indigenous language use, inequity in primary and secondary school, and parental death in order to ascertain what barriers continue to preclude access for Black African students. Additionally, a growing body of literature continues to highlight the socio-spatial isolation of Black African and White communities despite the dissolution of apartheid policies which once legally segregated them. The purpose of this paper is to utilise Edward Soja's (2010) critical theory linking marginalisation and geography (spatial (in)justice) to illustrate how geospatial mapping can visually and tangibly help us comprehend how the location of Black Africans, Whites, and the aforementioned barriers to tertiary education, vary across South Africa.[2] It can also suggest how the cumulative effect of multiple barriers located among a socio-spatially isolated population may be responsible for inequality in access to tertiary education in the post-apartheid era.[3]

Socio-Spatial Isolation

Conceptualizing community in South Africa requires acknowledging the country's legacy of enforced racial segregation and the imprint this history has left behind (Rohleder et al., 2007). It wasn't until 1994, the end of legal apartheid, that the segregationist laws which once kept the different racial groups in South Africa socially and spatially isolated from one another were dismantled. Dismantling these laws meant that Black Africans and Whites could now attend the same schools, live in the same neighbourhoods, and enjoy the same public spaces; however, socio-spatial integration has not become the national narrative (Finchilescu et al., 2007). Urban and suburban residential spaces continue to be characterised by separate spheres in which life is privatised along racial lines (Christopher, 2005; Kitchin, 2002; Rohleder et al., 2007). Rohleder and his colleagues (2007) provide a stark description of these separate spheres in their study noting that the urban landscape of Cape Town is reflective of continued residential racial segregation across South Africa. Whites in Cape Town typically live in prime geographical areas with large homes and spacious gardens; whereas, historically, Black Africans have resided in a highly congested, informal settlement living in huts or shanties. While there has been migration by the middle and upper middle class from Black African settlements to formally White areas, much of Cape Town, and South Africa more broadly, continues to be racially divided (Durrheim, 2005; Rohleder et al., 2007).

Public spaces and institutions are similarly polarised. In their study of racial segregation on a South African beach, Dixon and Durrheim (2003) found that interpersonal contact was more likely to happen on an intragroup rather than intergroup level and that the probability of White and Black African beachgoers encountering one another was significantly lower than one would expect due to chance. They found systematic segregation on the beach to be more overt on Boxing Day and New Year's Day during which an influx of Black Africans would

spur the withdrawal of Whites. This was exemplified by a growing trend of White avoidance of beaches on holidays when Black Africans are more likely to arrive in larger numbers. Similarly, in university settings, researchers have described continued racial homogeneity among student populations in historically White and historically Black African institutions, dichotomised seating patterns in informal spaces and residence hall dining centres, and – perhaps most disconcerting – White South African students who have had little to no contact with people of other races (Rohleder et al., 2007; Schrieff et al., 2005). Clearly, race relations remain highly segregated in post-apartheid South Africa as a result of informal socio-spatial isolation in intimate (residential) and public (community and university) settings (Rohleder et al., 2007).

Poverty

> South Africa emerged from apartheid with stark racial, wealth, and wage inequalities. It is estimated that White South Africans own 87 percent of the land, while close to 50 percent of Black South Africans … live in poverty. (Nimubona & Vencatachellum, 2007, p. 149)

Thus, poverty is regarded by some as the country's most pressing social problem given that the extent of poverty in South Africa continues to mirror apartheid patterns of racial segregation (Letseka et al., 2009). This has resulted in South Africa being described as a country of two nations – one White and prosperous, the other Black African and characterised by underdeveloped economic, physical, and infrastructural conditions (Breier, 2010; Letseka et al., 2009; Mbeki, 1998).[4] In fact Letseka and his colleagues (2009) argue that if White South Africa comprised its own nation it would rank 24th in the world in per capita income next to Spain; however, Black South Africa would rank 123rd, just above the Democratic Republic of Congo. This differentiated experience of poverty within Black African communities has led to significantly divergent educational experiences and outcomes.

Under apartheid the National Party government privileged White education while marginalizing Black Africans who were placed in low quality, underfunded schools which continue to be the poorest in the nation (Breier, 2010). This history has impacted access to post-apartheid education. Nimubona and Vencatachellum (2007) investigated White and Black South African familial investment in children's education. Their results indicated that intergenerational mobility is growing at a more significant pace among White families and that the poorest Black African children have the lowest rate of intergenerational mobility; whereas, this is not the case for the poorest White children. The researchers attribute the diminished rate of successive educational achievements in later generations of Black Africans to residual racism from the apartheid regime. Barriers include lack of access to the credit market, as well as the cost and quality of tertiary educational opportunities for Black African students. For those Black African students who do attend tertiary education, meeting

basic needs and financing the cost of postsecondary education are access impediments (Letseka et al., 2009; Lindow, 2006). According to Breier (2010), finances play a very important role in the lives of Black African tertiary students coming from lower socioeconomic backgrounds; financial stringency affects their choice of institution and programme of study, as well as leading these students to depart postsecondary institutions prematurely because of unexpected financial demands or because they underestimated the full cost of education. In many ways, poverty not only contributes to spatial isolation in South Africa, but also continues to relegate Black Africans to second-class citizenship socially and educationally.

Indigenous Language Use

South Africa is a multilingual country with eleven officially recognised languages, nine of which are indigenous languages spoken by the majority of Black Africans as their mother tongue or home language. Yet, English remains the dominant language of business and public life (Posel & Casale, 2011). In tertiary institutions, as well, the colonial languages of English and Afrikaans are privileged, often leading to the denigration of the use of indigenous languages (Greenfield, 2010; Koch & Dornbrack, 2008). Greenfield (2010) found that language arrangements which privilege English and Afrikaans, such as those found within tertiary institutions, naturalise the hegemonic status of these dominant languages and continue a legacy of colonialism in South Africa. As a result, a system of inequality is perpetuated by disadvantaging Black African students. "Rather than representing purely educational interests, these language policies are embedded in a whole set of political, ideological, social, and economic agendas that operate to preserve the benefits of dominant groups" (ibid., p. 518). In creating distinct opportunities based upon language acquisition, tertiary institutions in South Africa have crafted language policy into an instrument for constraining Black African students' educational opportunities.

Initially, post-apartheid policies were enacted, and institutions were developed, to aid the country in transitioning to a more multilingual state and to foster the improved status of the indigenous languages spoken by the historically disadvantaged Black African majority (Posel & Casale, 2011). South Africa's Constitution includes a provision stating: "everyone has the right to receive education in the official language or languages of their choice in public educational institutions where that education is reasonably practicable" (ibid., p. 450). Additionally, South Africa's Language-in-Education Policy of 1997 promotes the use of additive bilingualism; students are taught in their native language as well as in a second language in order to encourage second language acquisition. In the wake of these policy provisions, however, South Africa has evolved into a more monolingual state than it had been during the apartheid era; language policies have become a post-apartheid apparatus for maintaining traditional, stratified systems of social reproduction (Greenfield, 2010; Posel & Casale, 2011).

The effect of this language mismatch has had a devastating impact on the participation of Black African students in education. Black African school children in South Africa struggle in English-only schools due to the lack of English exposure at home and the likelihood that their teachers fail to utilise English as well, instead switching between mother tongue and English, leading to higher dropout rates among Black African students (Greenfield, 2010; Posel & Casale, 2011). Those students who do continue in school are often impaired in their academic success and cognitive development due to the fact that teachers, out of necessity, must stick to rote learning because of students' unfamiliarity with the English language (Posel & Casale, 2011). In Black African classrooms in which language competency is poor, these students have high failure rates at the tertiary level due to their inability "to cope with the demands of more advanced, English-taught, curriculum" (ibid., p. 451). Conversely, the tertiary education performance of White students who learn English or Afrikaans as their primary, home language has been markedly better. Since the primary languages of tertiary education in South Africa are English and Afrikaans, this achievement discrepancy has led to vast inequalities in educational outcomes (ibid.).[5] Though the prominence of English in tertiary institutions is likely due to the language's role as an international lingua franca, Afrikaans does not serve a similar purpose. This begs the question as to whether local indigenous languages could be employed in concert with English instruction as opposed to Afrikaans, a language imbued with South Africa's history of inequality?

Inequity in Primary and Secondary School

"South Africa spends a bigger share of its GDP on education than any other country on the continent. Yet its results are among the worst" (*The Economist*, 2010, p. 47). Much like residential and public life in South Africa, government schools were formally segregated until the end of apartheid, during which education policy was vastly different for South Africa's various racial groups (Holtman et al., 2005). Black African schools, in particular, were utilised as sites for inculcating students with a sense of inferiority and reinforcing state policy (Spaull, 2012). Today, schooling in South Africa still suffers, not from racialised curricula, but from high student-teacher ratios, poorly qualified teachers, and inadequate funding (Fedderke et al., 2000).

Yamauchi (2005/2011) found that primary and secondary education for Black African students remains substandard for two very significant reasons: (1) Black African students attend schools with much higher student-teacher ratios, and (2) school quality reflects school inputs – and inputs are greater in White communities which house residents with higher incomes. Student-teacher ratio is a measure of school quality; it represents the amount of human capital that a teacher can invest in his or her students based upon the number of students in the classroom (Yamauchi, 2005). Thus, the student-teacher ratio in a classroom has long-term consequences for the continued academic development of the student, and the higher student-teacher ratios found in Black African schools have considerable implications for

this group of students, specifically. Yamauchi (2011) also examined the relationship between the spatial isolation of South Africa's racial groups and the school fee. Formerly White primary and secondary schools are still located in primarily White communities and the same is true of formerly Black African schools. A higher school fee is charged in residential areas with a higher proportion of Whites, and Yamauchi (2011) directly linked school fee resources to the matriculation pass rate.[6] In other words, students who attend schools with higher fees are more likely to successfully matriculate through primary and secondary school and pass the exams required for tertiary education.

The educational inequity experienced by Black African students in primary and secondary school is unequivocally linked to their ability to participate in South Africa's tertiary education system. In 2008, of the one in four Black African students who took the matriculation exam in mathematics, only 39% passed compared with 98% of their White peers (*The Economist*, 2010). And, only one in ten Black African students qualifies for postsecondary education; whereas, more than half of White students do (ibid.). While much of the inequity experienced in primary and secondary education by Black African students can be attributed to the apartheid legacy, inadequate teacher preparation, high student-teacher ratios, and poor financing continue to subject Black Africans to inferior educational opportunities.

Parental Death

The HIV/AIDS epidemic has had a devastating impact globally, but one of the most significant consequences has been the rise in the number of orphaned children (Chuong & Operario, 2012; UNAIDS, UNICEF, & USAID, 2004).[7] In sub-Saharan Africa 12 million children are orphaned due to HIV/AIDS, 1.4 million in South Africa alone, and these numbers are expected to rise (Johnson & Dorrington, 2001; UNAIDS et al., 2004; WHO, UNAIDS, & UNICEF, 2008). Research has indicated that orphaned children are academically vulnerable and are less likely to perform at grade level or be enrolled in school (Ardington & Leibbrandt, 2010; Bicego et al., 2003; Case et al., 2004). This is due in large part to the socioeconomic insecurity and instability in family care which accompany parental death (Case et al., 2004; Case & Ardington, 2006; UNAIDS et al., 2004). Children who have lost both parents (double orphans) have the greatest risk for school delay, and the risk for educational delay is increased for males, children residing in urban areas, and older children (Chuong & Operario, 2012). Double orphans experience heightened vulnerability due to uncertainty in guardianship following parental death. Many double orphans reside with their grandparents; however, the grandparents themselves are vulnerable after losing the support of their sons and daughters (Bicego et al., 2003).

Older, adolescent orphaned children are particularly at risk as they develop greater physical and sexual maturity and increased independence (UNAIDS et al., 2004). They may leave school to financially support the family as the new head of household, reduce their participation in community activities as a result of

economic hardship, and/or exhibit excessive risk taking behaviours such as unsafe sexual practices and substance abuse (ibid.). Additionally, adolescent orphans are burdened with the responsibility of silence. HIV/AIDS is still largely stigmatised and to acknowledge that a parent died from AIDS may result in ostracisation at school, among friends, and at home (Thupayagale-Tshweneagae & Benedict, 2011). Fortunately, for those orphaned children who continue their education, progressive levels of schooling have been shown to lower the risk of HIV infection (Hargreaves et al., 2008). And Chuong and Operario (2012) find that maternal presence is a significant protective factor against negative educational outcomes regardless of orphan status, race, age, and other demographic characteristics.

THEORETICAL FRAMEWORK

"Spatial thinking…cannot only enrich our understanding of almost any subject but has the added potential to extend our practical knowledge into more effective actions aimed at changing the world for the better" (Soja, 2010, p. 2). Through his theory of spatial (in)justice, Edward Soja (2010), a critical human geographer, argues that justice has a consequential geography and rather than serving as the backdrop in which justice and injustice are socially experienced, geography or space has a dynamic role in this process. The search for spatial (in)justice occurs on a geographical spectrum from the local to the global over what theory has termed the "right to the city" (ibid., p. 6). Essentially, the right to the city is linked to global processes of urbanisation and refers to the increasing demand for control over the social production of space. Spatial (in)justice materialises in three interdependent and overlapping arrangements: (1) external, (2) endogenous, and (3) mesogeographical. External spatial (in)justice refers to outside influence over the creation of socio-spatial boundaries; examples include South African apartheid, colonialism, gerrymandering, and private property rights. Endogenous spatial (in)justice references internal efforts which lead to geographic inequalities, such as discriminatory decisions made by individuals, firms, and institutions. Lastly, mesogeogrpahical spatial (in)justice highlights the globalisation of geospatial inequity as a result of uneven development.

Soja (2010) argues that employing a critical spatial perspective can illuminate new sources of insight, uncover innovative practical and theoretical applications, and highlight the interdependent relationship between the social and spatial dimensions of human life (the socio-spatial dialectic). Soja's theory of spatial (in)justice allows for a deeper examination, here utilizing Geographic Information Systems (GIS), of the way social and demographic data is concentrated across South Africa's geography. A link existed in this study between the structures of apartheid which created the social and spatial isolation of Black Africans and how this geographic (in)justice is perpetuated today through more endogenous, though no less systematic, efforts as the literature has indicated. The theory of spatial (in)justice is also used to illustrate how isolation has resulted in the concentration of tertiary education access barriers within Black African communities, which is in itself indicative of mesogeographical

(in)justice or uneven development. The following sections describe the use of GIS in this study as well as how spatial (in)justice is employed to understand tertiary education access inequality across South Africa.

METHODS AND DATA SOURCES

The study's research questions were:

1. Are Black African and White communities socio-spatially isolated from one another across South Africa?
2. Are poverty, indigenous language use, inequity in primary and secondary school, and parental death localised within Black African communities?
3. What is gained from a socio-spatial (in)justice analysis of tertiary education access for Black Africans in post-apartheid South Africa?

The proprietary GIS programme ArcGIS 10 was utilised to map: (a) what percentage of the total population Black Africans and Whites comprised in each of South Africa's 234 municipalities; (b) the percentage of the population in each municipality with an annual household income within approximately 125% of the 2011 South African extreme poverty line (see below for an explanation); (c) the predominant home language spoken by the majority of the population in each municipality; (d) the percentage of the population of each municipality over the age of 20 that had completed matriculation; (e) the percentage of the population in each municipality aged 24 or younger that had experienced parental death; and (f) the percentage of the population of each municipality aged 20 or older that has some form of higher education. The South Africa shapefiles were obtained from Africa Open Data 2011. City data were from ESRI 2010.

All map data were gathered from South Africa's 2011 census available from Statistics South Africa and are shown using a technique called choroplething, which utilises shading or colour to visually depict variable variation across geographic space. Population group proportion was mapped by calculating the percentage of the total population of each municipality that was Black African or White. Poverty data included all households with an annual income of 4,800 Rand (635 U.S. Dollars) or less, in each municipality. The extreme poverty line for South Africa in 2011 was 321 Rand per month; thus, the threshold of 400 Rand per month, or 4,800 Rand annually, is approximately 125% of the extreme poverty line. This is a rather conservative estimate of poverty in South Africa. The predominant language of each municipality was calculated from the eleven official languages of South Africa.[8] A language was deemed to be predominant if more than 50% of the population spoke it as their primary household language, or if the language was spoken by at least a third of the population of the municipality as the primary language and no other language was spoken by at least a third of the population. The percentage of the population aged 24 or younger who had experienced parental death in each municipality was calculated by summing the number of individuals who had lost a mother with the

number of individuals who had lost a father and subtracting out those who had lost both. This result was then divided by the total population of each municipality aged 24 or younger. Statistics South Africa (2011) provided data on matriculation and higher education for each municipality. The data for each map are provided at the municipal level; however, the maps are displayed utilizing provincial boundaries for clarity and better depiction of national trends.

RESULTS

Figures 1 and 2 show the percentage of the population of each municipality that is Black African and White. Findings from the geospatial analysis demonstrate that Black African and White communities in South Africa are, in fact, spatially segregated from one another across South Africa's municipalities. There is a very stark line of division between the northern and southern regions of the country. Black Africans total 80–100% of the population of many municipalities in the northern and eastern provinces (Limpopo, Mpumalanga, KwaZulu-Natal, Eastern Cape, and North West); whereas White South Africans appear to reside chiefly in urban environments (Pretoria, Johannesburg, and Cape Town) and the Western Cape. What is perhaps most significant is not that there are municipalities in which Black Africans make up 80–100% of the population, since they comprise almost 80% of the country's total population, but rather that there are municipalities which have a population that is 20–30% White but less than 20% Black African when Whites comprise only 9% of

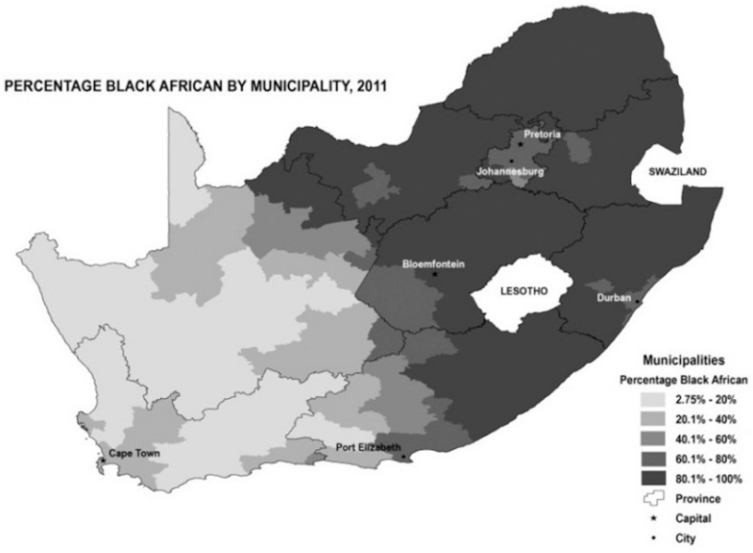

Figure 1. Percentage Black African by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

South Africa's total population. This is not only evidence of socio-spatial isolation, but also indicative of continued *de facto* apartheid in the post-apartheid era.

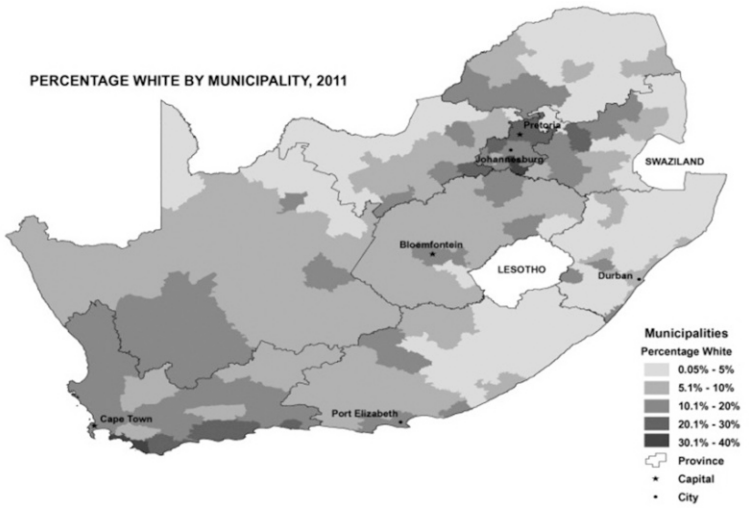

Figure 2. Percentage White by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

These findings are aligned with the literature that indicates residential segregation in South Africa continues, despite the dissolution of apartheid segregationist policies. In discussing the socio-spatial dialectic, Soja (2010) argues that spatial (in)justice affects social life just as much as social life impacts the geography of (in)justice. Residential segregation represents an external pattern of spatial (in)justice which influences racially discriminatory practices against Black Africans in public spaces (an endogenous form of social (in)justice). Social (in)justice reinforces spatial (in) justice against Black Africans in informal environments as well. Examples from the literature include homogenous social grouping patterns in recreational and educational spaces.

Soja (2010) suggests that justice has a consequential geography and that space has a dynamic impact on the way injustice is socially experienced. The geographic isolation of Black Africans in South Africa has created a milieu in these communities which is differentiated from that of White communities due to concentrated inequality and this has significant implications for their access to tertiary education. Research indicated that poverty, indigenous language use, inequity in primary and secondary education, and parental death were barriers to postsecondary education, specifically for Black African students. Findings were consistent with the literature and provide visualisation of how these barriers are localised within Black African communities.

Figure 3 depicts the percentage of the population of each municipality with an annual household income within 125% of the 2011 South African extreme poverty line of 321 Rand. This included all households with an annual income of 4,800 Rand or less, which equates to 400 Rand or less per month. This is a conservative estimate of poverty in South Africa. The map indicates that there are municipalities within South Africa in which roughly a quarter of the population is living in or near extreme poverty and these communities are spatially related to the regions of South Africa with a high proportion (80–100%) of Black Africans (the northern and eastern provinces: Limpopo, Mpumalanga, KwaZulu-Natal, Eastern Cape, and North West).

This spatial relationship is indicative of a pattern of geographically isolated, impoverished Black African communities within the northern and eastern regions of South Africa. Together, spatial isolation and poverty lead to the marginalisation of disempowered Black Africans from the institutions and resources frequented by those with privilege, specifically tertiary education, and allow socio-spatial structures to constrain interaction between racial groups so that access to opportunities is inherently unequal.

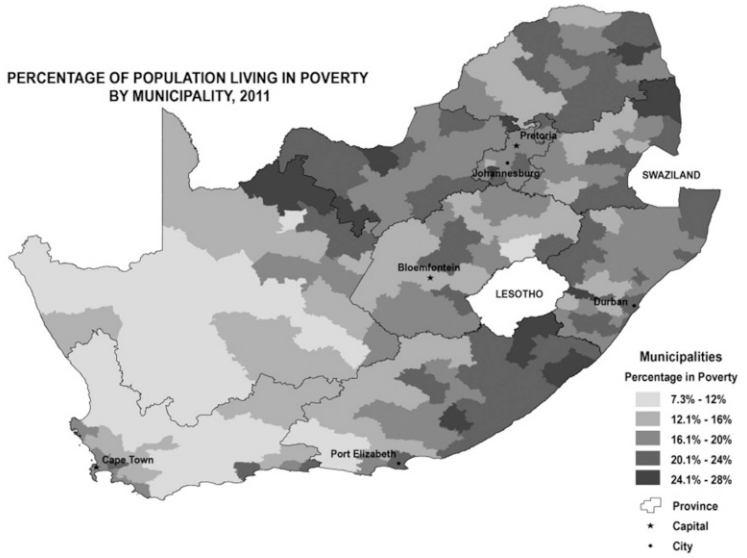

Figure 3. Percentage of population living in poverty by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za

The primary languages of instruction in South African tertiary institutions are Afrikaans and English; however, these are only two of the country's eleven official languages. The other nine official languages are indigenous and, as the literature

indicates, largely spoken among Black Africans. The predominant language of each municipality in South Africa is mapped below (Figure 4). Results affirm the findings of the literature and depict the localisation of indigenous language use within the northern and eastern provinces of South Africa (Limpopo, Mpumalanga, KwaZulu-Natal, Eastern Cape, and North West). This finding is, like poverty, spatially related to the regions of the country in which there are municipalities with high (80–100%) proportions of Black Africans. Since South Africa is a multilingual country, it cannot be inferred from this map that Black Africans do not or cannot speak Afrikaans or English. However, indigenous languages are only the predominant home language in municipalities in which there is a spatial association with high numbers of Black Africans. Thus indigenous language contributes to socio-spatial injustice, relative to postsecondary access, due to its geographic isolation within Black African communities.

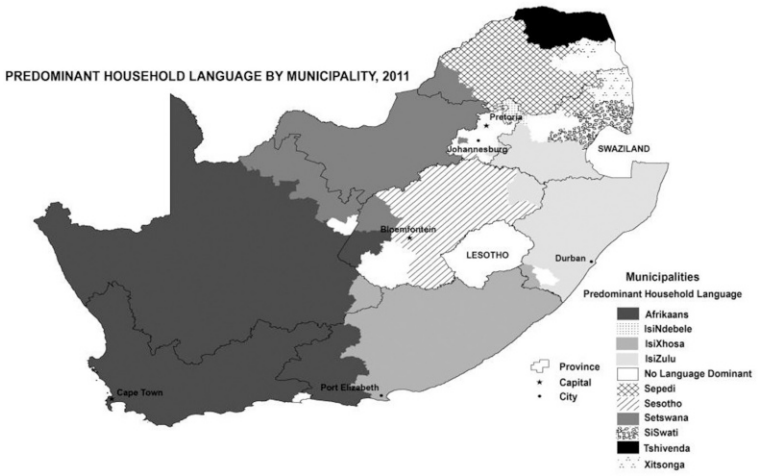

Figure 4. Predominant household language by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

For each municipality, Figure 5 shows the percentage of the population over the age of 20 that had completed matriculation as recorded in the 2011 South African census. Results were aligned with the literature and indicated that matriculation rates were reflective of a school system struggling with high student-teacher ratios, poorly qualified teachers, and inadequate funding. In fact, the highest matriculation pass rate for any municipality was only 39%. Yet, similar to poverty and indigenous language use, the concentration of greatest socio-spatial injustice is within Black African communities. The municipalities in the North West and Eastern Cape provinces with matriculation rates between 9.6–15% have populations that are 80–100% Black African. No municipality with a high proportion of Whites has an equally dismal

matriculation completion rate. This is an example of mesogeographical spatial (in) justice in which uneven development (financial inputs in White versus Black African primary and secondary schools) has had a direct impact on social experiences of inequality.

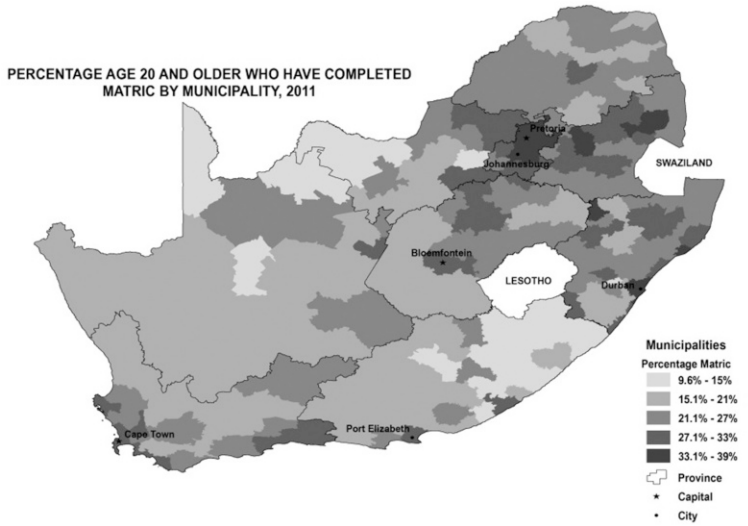

Figure 5. Percentage age 20 and older who have completed matric, by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

South Africa has one of the highest HIV/AIDS rates in the world and – as literature has indicated – a significant consequence of the HIV/AIDS epidemic is the rise in orphaned children (Beyers & Hay, 2007). Figure 6 depicts the percentage of the population aged 24 and younger in each municipality that had experienced parental death of one or both parents. Though the literature defines orphaned children as those who are 18 or younger and experience parental death, the age cut off of 24 is used here to include students of tertiary age. The map illustrates that municipalities in Guateng, KwaZulu-Natal, and the Eastern Cape have the highest rates of parental death, 30.1–36%. One municipality in KwaZulu-Natal depicts a parental death rate of 42%. Again, the municipalities with the highest percentages of those who have experienced parental death are also municipalities with populations that are 80–100% Black African. Municipalities with larger White populations do not reflect the same concentration of parental death. Socio-spatial injustice shapes contact with and experience of parental death and demonstrates how this social injustice impacts upon academic continuity and socioeconomic and familial stability.

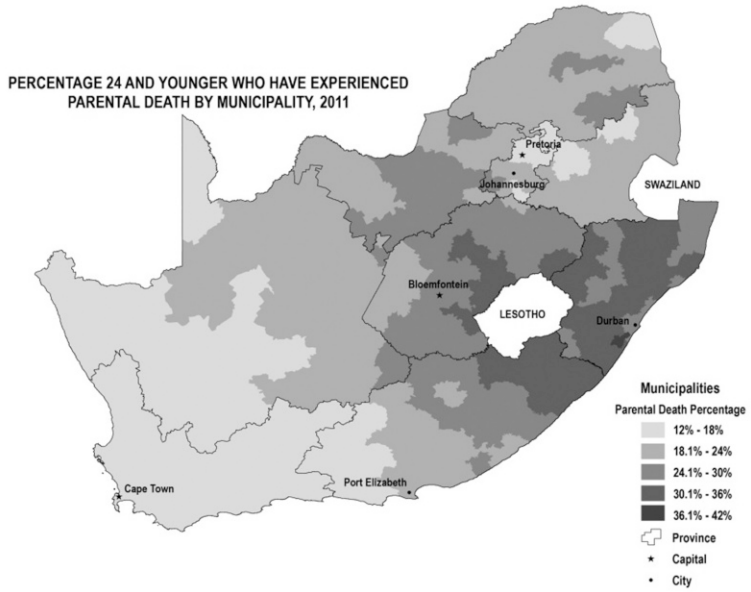

Figure 6. Percentage 24 and younger who have experienced parental death, by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

Figure 7 shows the percentage of each municipality aged 20 or older which has completed some postsecondary education. Similar to the map of matriculation rates, South Africa's inability to produce significant outputs from the country's education systems is obvious. The majority of the municipalities in South Africa depict tertiary education rates of only 2.3–8%. However, the highest rates of tertiary education 20.1–24% are in urban environments which boast a larger White population. Though there are municipalities with relatively high tertiary education rates and large Black African populations, the majority of Black Africans aged 20 and older have not accessed postsecondary education. This is likely due to a history of educational marginalisation under apartheid and the current impact of the access barriers discussed in this paper (poverty, indigenous language use, inequity in primary and secondary school, and parental death). The uneven development across geographic spaces populated by Black Africans and Whites (mesogeographical spatial (in) justice) has created the socio-spatial (in)justice experienced as tertiary education access inequality.

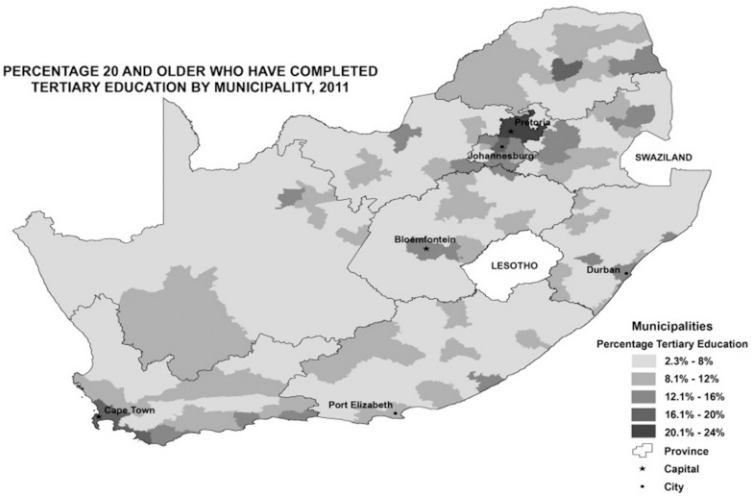

Figure 7. Percentage 20 and older who have completed tertiary education, by municipality, 2011
Source: 2011 South African Census, http://beta2.statssa.gov.za/

DISCUSSION

This paper's research questions sought to find: (1) whether Black African and White communities are socio-spatially isolated from one another across South Africa, (2) whether poverty, indigenous language use, inequity in primary and secondary school; and parental death are localised within Black African communities; and (3) what is gained from a socio-spatial (in)justice analysis of tertiary education access for Black Africans in post-apartheid South Africa? Results of the geospatial analysis indicated that Black African and White communities in South Africa are socio-spatially isolated from one another. Soja (2010) argues that this geographic segregation shapes social life and vice versa. The geographic isolation of Black Africans from Whites has created social experiences dichotomised by race, which for Black Africans has meant the concentration of tertiary education access barriers within their environments. Poverty, indigenous language use, inequity in primary and secondary school, and parental death were all primarily localised within municipalities with populations that were 80–100% Black African. This likely precludes Black African students from accessing postsecondary education at a rate equivalent to their White peers.

This paper sought to weave together multiple bodies of literature on the isolation of Black Africans and tertiary education access barriers in order to visually depict that reduced access to tertiary institutions among Black Africans may be amplified by the socio-spatial isolation of multiple access barriers within Black African communities.

Simply, geographic segregation and the presence of multiple tertiary education access barriers within Black African communities may have a complementary effect that compounds access inequality for Black Africans in a way that might not be experienced were Black Africans exposed to a singular access barrier or only spatial isolation. What is gained from completing an analysis of socio-spatial (in)justice is a more complete picture of the multiple sociological determinants of education that function concurrently to constrain Black African student access to tertiary education; moreover, it shows how geographic space and social life mutually inform one another to create patterns of injustice that have a spatial consequence.

Though this paper presents important findings on the understudied relationship between space and experiences of injustice for Black African students relative to postsecondary education access, limitations to the study exist. Although these data are useful for understanding how socio-spatial isolation shapes postsecondary access for Black African and White students across South Africa, the data cannot provide information about the lived experience of this inequality or within municipality nuances that inevitably exist. Additionally, parental death served as a proxy for the experience of HIV/AIDS as a postsecondary access barrier. Though the two measures are closely related, parental death is a rough estimation of the impact of HIV/AIDS on educational attainment. However, HIV/AIDS data are not publicly available at the municipal level.

CONCLUSION

South Africa's aggressive approach to ameliorating the effects of apartheid within its education system, the country's effort to remain at the forefront of the global conversation on racial reconciliation, and the country's role as the economic engine and education hub of sub-Saharan Africa necessitate that its historically disadvantaged Black African population should be able to access tertiary education in a manner equivalent to their more advantaged White counterparts. Thus, further research on tertiary education access for Black African students is imperative. Studies linking multiple access barriers, both quantitatively and qualitatively, would arguably present the most holistic analysis of what measures the country of South Africa must take in order to ensure that its largest population group becomes one of its best educated. This paper aimed to position itself in the research by beginning to frame how the socio-spatial isolation of Black African communities and the concentrated tertiary education access barriers present within them constrain Black African students' postsecondary attainment and serve to perpetuate an environment in South Africa that privileges Whites and marginalises Black Africans despite the dissolution of the apartheid regime. Yet, this is not only a South African story, nor is it only reflective of conditions in Sub-Saharan Africa. Socio-spatial segregation and its impact on access to resources which promote social mobility, such as education, is an international issue that has been studied among Aboriginal populations in Australia (Atkinson et al., 2010), Scheduled Castes and Scheduled Tribes in India

(Desai & Kulkarni, 2008), Tibetan children in China (Postiglione et al., 2004), and has prompted the term 'American Apartheid' to refer to racial segregation and the creation of the urban underclass in the United States (Massey, 1990).

Future research should utilise comparative frameworks to examine South Africa relative to other countries with historical antecedents of unequal access to tertiary education for indigenous students and students of color. This research should investigate how these countries have attempted to ameliorate this inequality and whether these strategies would be feasible in the South African context. Likely, government policy and development work focused on the social and geographical integration of Black Africans will begin to mitigate the socio-spatial (in)justice that presents obstacles to Black African student tertiary education access and will begin to pave a path to a South Africa that lives out its promise of greater racial equality.

NOTES

[1] According to the 2011 Census, Black Africans comprise 79.2% of the population and Whites 8.9% (Statistics South Africa, 2011).

[2] See Hogrebe & Tate (2012) for an analysis on the use of Geographic Information Systems (GIS) to understand complex relationships among variables across geographic space.

[3] See Soja (2010) for a discussion of critical theory on spatial justice and the relationship between geography and inequality.

[4] South Africa's Gini index was last measured at 65.0 in 2011 by the World Bank. The Gini index is a measure of income inequality which ranges from 0, perfect equality, to 100, perfect inequality. An index score of 65.0 positions South Africa as one of the most unequal countries in the world (Letseka et al., 2009; The World Bank, 2014).

[5] The only tertiary institution in South Africa that provides instruction in a majority of South Africa's official languages is the distance learning university, UNISA.

[6] Matriculation refers to the successful completion of primary and secondary school as well as a passing score on the exams required for admission to postsecondary education in South Africa.

[7] A child is considered orphaned if he or she has lost one or both parents before the age of 18 (UNAIDS et al., 2004).

[8] Census language options, sign language, other, unspecified, and not applicable, were not included in the analysis.

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