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Exploring the connection between socioeconomic insecurity and witchcraft beliefs in Khayelitsha

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Abstract

Khayelitsha is a low-income, urban township in South Africa characterised by dilapidated housing and inadequate sanitation services and waste management. This makes it a valuable site to investigate whether belief in witchcraft might vary depending on personal socioeconomic characteristics, living conditions and behavioural and attitudinal dimensions of personal agency and social cohesion. To explore these relationships, multiple linear regression analysis is conducted using the Khayelitsha Rodent Survey (2018) and the Khayelitsha Panel Survey (2007). Drawing extensively on the anthropological literature on witchcraft, this paper illustrates how ethnographic insights can be supported by more systematic, quantitative methods. This analysis points to the centrality of 'agency panic' and eroded social capital among neighbours when explaining witchcraft beliefs. In Site C, this belief in malign magic is the norm, especially among men and is associated with lower levels of interpersonal trust and an increased likelihood of inertia in the face of rodent infestation, other relevant variables held fixed.

1. Introduction

Belief in witchcraft (the ability to use magic to gain advantage over or harm one's enemies) is 'strong, common and widespread in Africa' (Cohan, 2011:807) and has not dissipated with processes of urbanisation and industrial modernity (Konhert, 2003:225). In this context, these beliefs should not be 'interpreted as figurative or metaphorical statements about something else' (2005:1). This implies, as Ashforth points out, that 'unless we make the imaginative leap to treat propositions about invisible forces seriously, the social and political dynamics of vast portions of humanity will remain incomprehensible' (2005:1).

There is a significant body of anthropological work suggesting that culture and socio-economic status affect witchcraft beliefs. There is also an emerging body of quantitative studies on the determinants of witchcraft beliefs, but none using social survey data to explore the relationship between personal agency and intracommunity social cohesion and witchcraft beliefs in a poor urban context. This paper is a first attempt at plugging this gap by using data from Khayelitsha to investigate whether indicators of deprivation and insecurity are correlated with

beliefs in the power of malign magic to cause harm in everyday life. Finding this to be the case, this paper illustrates how ethnographic insights can be supported by more systematic, quantitative methods.

According to the anthropological and sociological literature, the belief in 'occult cosmologies' (Sanders & West, 2003:10) is a 'rational coping mechanism in the face of uncontrollable external forces' (Ashforth, 2005:3). Similarly, Timothy Melley (2002) argues from a psychological perspective that conspiracy theories (of which witchcraft attacks can be seen as a version), are correlated with feelings of a fundamental lack of control over one's life. This paper will investigate if this theory, alongside Mirowsky and Ross's (1983) psychological theory of powerlessness and paranoia, can help to explain whether people in Site C, Khayelitsha believe that witchcraft should be suspected if a young person dies of illness. This would imply that people reach for the witchcraft paradigm to explain unfortunate and suspicious circumstances. This approach has broader relevance in that, according to Melley, 'marginal forms of paranoia and conspiracy theory must be understood as symptoms of a larger and more mainstream set of anxieties about human agency' (2002:58).

2. The Anthropological Story of the 'Witchcraft Paradigm' in Africa

This investigation into the witchcraft paradigm begins with a review of the existing literature on the subject, most of which is anthropological. Herein it is generally accepted that many African people, 'peasants, business people or politicians alike, even internationally renowned scientists and leaders of Christian churches' (Kohnert, 1996:2), consider witchcraft to be a reality. Witchcraft beliefs have been analysed as 'explanations of evil in the universe' (Krige, 1947:11) and as arising out of 'suffering' (Ashforth, 2002:122). More generally, the occult has been defined as the 'forces impinging on people's lives that make them feel unsafe' (Ashforth, 2005:16).

Within the witchcraft paradigm, people fear that unseen evil forces are 'set into motion by jealousy, hatred and similar motives and generally only against some specific individual' (Krige, 1947:11). Be it by 'spear in war, or by a wild beast while hunting, or by the bite of a snake, or by sickness' (Evans-Pritchard, 1937:85), untimely death is understood to be the result of witchcraft. Evans-Pritchard, one of the earliest writers about witchcraft beliefs among the Azande people in South Sudan, emphasized that witchcraft was the 'ideological pivot' (1937: 85) used to explain untimely death, even by natural causes. This is because, according to Pritchard, death is a 'social fact...the destruction of a member of

family and kin' (1937:85). Thus witchcraft dialogues are superimposed on unexpected deaths, giving them 'moral value' (Evans-Pritchard, 1937:85). According to Krige, pegging this kind of suffering to witchcraft allows people to 'feel secure [because]...the moral order is upheld' (1947: 11). In other words, to believe another human is the reason that your loved one is dead is less existentially disruptive than to believe your suffering is random and inexplicable.

Such early anthropological analyses 'draw attention to the historical predicament of ethnography' (Clifford, Marcus and Fortun, 2010:2) in that they emerge from colonial fantasies about African life. Yet more recent discussions on the relationship between death and witchcraft tell a similar story. Witchcraft continues to be used to explain the deaths of young people and, in particular, to answer 'questions of who is to blame for HIV/AIDS [and] why it affects some people and not others' (Stadler, 2003:358). Ashforth writes extensively on how 'the epidemic of HIV/AIDS [in South Africa] became simultaneously an epidemic of witchcraft' (2001:1). Ashforth wrote that '[if} someone [wants] to see [a] young man dead [they can use] witchcraft to send this AIDS or isidliso to kill him' (2001:1). *Isidliso* here is the Zulu word roughly meaning poison: one that 'covers many symptoms—literally anything that affects the lungs, stomach, and digestive tract—and leads to a slow, wasting illness' (Niehaus & Jonsson, 2005:181). The implication is that witches can kill a person by having sex with them directly or through the contamination of another person. Stadler supports this claim, saying that 'rumors of young women intentionally spreading HIV are at the basis of these moral panics' (2003:365). Dahl (2012) argues that this could help to combat stigma against HIV-positive individuals by redirecting the blame for the illness to evil actions outside the individual's control. If witchcraft beliefs motivate people to blame one another for the spread of AIDS, the paradigm has unsettling implications for social cohesion.

Niehaus and Jonsson dispute this claim, however, arguing that people in the South African lowveld 'clearly distinguished between witchcraft and HIV/AIDS, [meaning that they] invested the diseased person with some measure of choice and responsibility' (2005:81). In particular, these anthropologists differentiate between male and female conceptions of HIV/AIDS in this area. They argue that women were invested in biomedical explanations of HIV/AIDS while men 'invoked conspiracy theories, blaming translocal agents—such as Dr. Wouter Basson, Americans, soldiers, and governments' (ibid:179). More specifically, 'men did not perceive the sorts of insiders who were generally implicated in witchcraft as being responsible for the epidemic; rather, they felt that such responsibility lay with dominant social classes located well beyond the village setting' (ibid:181). In this case, the 'sinister plot' (ibid:182) to which men attribute HIV/AIDS derives from a weakened sense of masculinity- their 'humiliating expulsion from the ranks of South Africa's labour force' (ibid:192) and their

consequently undermined 'prospect of becoming providers, husbands, and fathers' (loc.cit). In this case, a man's socioeconomic difficulties are not the curse of neighbourhood magic but, instead, of 'global forces in South Africa's industrial centers' (loc. cit). In short, it is contended that men are more likely to conspire about unseen forces in attempts to explain socioeconomic hardship.

Furthermore, the witchcraft paradigm is 'premised upon a presumption of malice underpinning community life' (Ashforth, 2002:1). According to Marwick, witchcraft beliefs can be seen as a 'social strain gauge' (1964:263) because witchcraft accusations are likely to become more widespread in times of crisis. Yet the direction of causality (between witchcraft accusations and social circumstances) can go in both directions. Ashforth, for example, argued that suspicions about witchcraft causing AIDS in the 1980s made 'it difficult to build networks of trust [which had] practical implications for civil society' (Ashforth, 2001:138). Gershman makes a similar point, arguing that this 'erosion of social capital is one of the ways in which witchcraft beliefs may disrupt the fragile process of African economic development' (2016:183).

Gershman wrote the first and only large scale empirical study on witchcraft beliefs using 2008–2009 survey data collected by the Pew Forum on Religion and Public Life. Gershman found a negative association between witchcraft beliefs and trust at a national level in nineteen countries of Sub-Saharan Africa arguing that witchcraft beliefs and the erosion of social capital in the region were 'mutually reinforcing' (2015:3). The association was robust to the inclusion of a wide range of individual socio-demographic characteristics and regional-level controls for 'geography, economic development, conflict, ethnolinguistic diversity, prevalence of traditional religion, education, and proxies for the quality of local institutions, in addition to country fixed effects' (Gershman, 2015:3).

The witchcraft paradigm also places ideas of personal agency into contentious territory. 'Notions of personal responsibility for thought and action can be radically different' (Ashforth, 2001:6) when one believes that witches have the supernatural power to interfere with another's life. In short, one loses one's perceived control over one's circumstances when under siege by the magical prowess of witches. This parallels the psychological phenomenon, defined by Melley as 'agency panic' (2002:13), whereby people attribute external forces 'the qualities of motive, agency and individuality that they suspect has been depleted from themselves or individuals around them' (2002:13). Melley argues that 'in extreme cases [this diminished human agency is a feeling that individuals] may not be able to control their own behaviour' (2002:62). This further links up to concepts in the field of psychology around personal control, namely Rotter's (1966) internal locus of control, Wheaton's (1980) instrumentalism, Gecas' (1989) self-efficacy, Pearlin et al.'s (1981) mastery and Seeman's (1983) personal

autonomy. Playing counterpart to these concepts, arguably reinforced by the witchcraft paradigm, are powerlessness (Mirowsky & Ross, 1983:229), learned hopelessness (Elder & Liker, 1982), fatalism (Wheaton, 1980) and an externalised locus of control (Rotter, 1966).

Building on this, Mirowsky and Ross (1983) contend that there is a correlation between a belief in external control, coming in the form of feelings of alienation, hostility, powerlessness and paranoia with low socioeconomic status and low levels of trust in others. These authors claim that the direction of causality is from powerlessness to paranoia in that powerlessness 'leads to the belief that important outcomes in one's life are controlled by external forces and other persons, rather than by one's own choices and actions' (1983:228). They predict that powerlessness, when exacerbated by feelings of victimisation and mistrust of others, produces paranoia.

In this regard, Geis and Ross claim that the 'environment in which a person lives affects his or her sense of control or powerlessness' (1998:232). They delineate how a community rife with 'drug use, fights, vandalism, graffiti, loitering, public drinking and crime' (loc. cit) would suffer from weaker social ties and more entrenched perceived powerlessness. As such, if superstition pertaining to the occult manifests in 'the belief that you have enemies who are plotting to harm you' (Mirowsky & Ross, 1983:229) then it may be that witchcraft beliefs are a form of paranoia that too are associated with (and probably driven by) socioeconomic status and community trust.

While the literature claims that witchcraft accusations tend to be directed at the vulnerable, according to Kohnert there are particular circumstances in which they become a 'means of resistance' (1996:12) by the poor in their struggle against oppression. This is through the establishment of 'cults of counter violence' (1996:12). This has potentially serious implications for both development cooperation and more broadly, democracy. Ashforth imagines a dystopian, but plausible, situation in which people believe that there is collusion between the state and witches - which people feel needs to be stopped. This would be a conspiracy that 'is both extraordinarily difficult to disprove and extremely destructive of trust in the legitimacy of those institutions' (Ashforth, 2002:139). Speaking to this prediction, Gershman provides empirical evidence that witchcraft beliefs erode trust in local institutions, such as police, courts, and local council, but are statistically insignificant for trust in 'larger government' (2015:3) as represented by the army, president, parliament, and the electoral commission.

Therefore, any research into the witchcraft paradigm in contemporary South Africa must take into consideration the impact of 'modernity' on beliefs about witchcraft in the everyday and vice versa. Confirming this, Ciekawy said that the 'influence of witchcraft discourse has become increasingly manifest, precisely in modern sectors of society including politics, sports, new forms of entrepreneurship, and institutions of formal education' (1998:3). This elaborates on Ashforth's understanding that there is always a 'sense that witchcraft is increasing' (2005:305). The sense of urgency posed by the witchcraft paradigm, in contradiction to Giddens' (1994) argument that 'modernity destroys tradition', is flexible and tenacious; an inherent part of community life for many African people today.

This early anthropological work on witchcraft sought to convince the modern (and implicitly Western) reader that 'witchcraft is something more than meaningless superstition' (Krige, 1947:8). At the same time, anthropologists have expressed their conscientious skirting around what could be construed as a 'colonial fascination with African witchcraft' or a 'voyeuristic trifling with the exotic' (Ashforth, 2005:xiii); both of which could propagate stereotypes of illogicality within traditional African epistemology. This has resulted in work focussing on 'text making and rhetoric [in ways that] serve to highlight the constructed, artificial nature of cultural accounts' (Clifford, Marcus & Fortun, 2010:2). It seems thus that there is a need for mixed-methods research into the witchcraft paradigm in South Africa to give density and context to the 'general framework of presumptions and hypotheses' (Ashforth, 2001:xiii) that make up the witchcraft paradigm.

3. Data Description & Weighting: Khayelitsha Rodent Survey 2018

The quantitative research in this paper draws predominantly on the Khayelitsha Rodent Survey (KRS) data set to explore the correlates of witchcraft beliefs in Site C, Khayelitsha. This data set focussed on rodent infestation and control strategies, but it also collected socio-economic and attitudinal data, including data on witchcraft beliefs. Using the KRS, Nattrass et al (2018) touch on the prevalence of witchcraft (*ukuthakatha*) beliefs in Site C, noting 'the mutant, even supernatural character of rats reported from poorer areas' (2018:6). This paper takes the issue further by investigating whether witchcraft-related uncertainties are linked to the precarious socioeconomic circumstances of Site C.

The KRS data set was collected between August 2017 and May 2018. It is a sample of 221 households in Site C (formally Ikwezi Park) in Khayelitsha (CSSR & iCWild, 2018). Khayelitsha was created in 1984 by the Apartheid state as a settlement for African (specifically Xhosa) people. Over the last three decades, Khayelitsha has grown to become the second largest black township in South

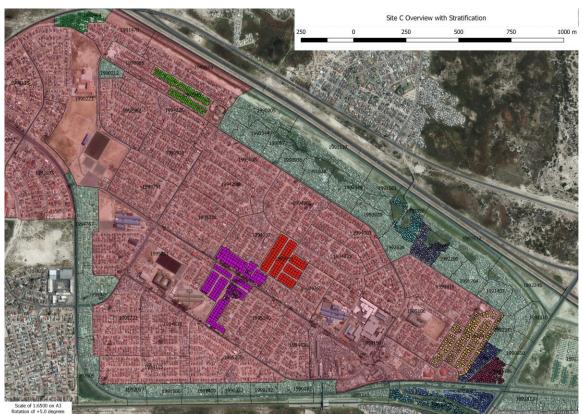
Africa after Soweto in Johannesburg (South African History Online, 2018). More specifically, Site C has a population of 52,184 people which makes up 13.3% of Khayelitsha's population in total, as per the 2011 South African National Census. It comprises an amalgamation of formal and informal housing areas.

Site C is a potentially valuable research site for exploring the correlates of witchcraft beliefs. It is a low-income, urban area that is 'particularly vulnerable to rodent infestation' (Nattrass et al., 2018:5) for reasons that are largely out of the control of its inhabitants. These include dilapidated housing and sanitation services and inadequate waste management. Yet, some people are better off than others, notably those living in the formal areas with internal toilets and where rubbish is collected regularly. As such, even within this predominately poor township there is a socio-economic gradient. This allows for the exploration of the extent to which belief in witchcraft might vary within Site C depending on personal socioeconomic characteristics, living conditions and behavioural and attitudinal dimensions of personal agency and social cohesion.

The KRS employed a stratified two-stage simple random sample. The strata are differentiated according to whether they comprise formal (brick) or informal (shack) housing areas. Within these strata, the primary sampling units are the 'Small Areas': the enumeration areas (EAs) classified by the 2011 census. These EAs are of roughly equal size (210 to 232 structures each). The secondary sampling unit is constituted by the dwelling units within these Small Areas. Once a dwelling unit was selected, a single respondent was interviewed opportunistically. Map 1 shows the small areas surveyed by the KRS. On this map, the differentiation between formal housing small areas (with roads) and surrounding, more densely packed informal areas is evident.

To ensure all results reflect an unbiased representation of Site C as a whole, post-stratified probability weights are used. These account for the survey design effects of stratification and clustering. The design weights place greater emphasis on respondents who were less likely to have been individually captured by the sample, including working people who would not have been at home during the interview times. Post-stratification ensures that the demographic totals of the sample, such as age and gender, conform to those given by the 2011 census, accommodating for seven years of population growth. The weighted sample predicts the population of Site C to be 31,000 people.

To investigate the contextual nuclei of more complex community dynamics in Site C, heat maps and a focus group session¹ with the respondents from the KRS are used. The heat maps display how respondents from each EA answered questions in the KRS. During this session people were given the opportunity to discuss various topics primarily relating to rubbish collection and rodent control. However, in the process, many references were made to witchcraft.



Map 1: Site C, Khayelitsha- Stratification and Clustering (CSSR & iCWild, 2018) (map produced by Jed Stephens)

Unfortunately, the KRS did not ask questions pertaining to community cohesion or personal agency. However, the 2007 wave of the Khayelitsha Panel Study had some questions like this and asked the same question about witchcraft as the KRS. This allowed for some supplementary analysis of the possible relationship between witchcraft beliefs and the psychological phenomenon of paranoia.

8

¹ The focus group was conducted on Saturday 23rd of June, 2018. It was facilitated by Thobani Ncapai and Fezeka Lephaila, both of whom are Xhosa speaking people from Khayelitsha.

4. The Methodological Complexity of Measuring a Belief in Witchcraft

There are some methodological challenges to ensure that any findings in this research are robust. Firstly, there is the difficulty of selecting a variable from the KRS to illicit accurate statistics on who it is that believes in witchcraft in Site C. In the KRS, there are 5 variables about witchcraft. Namely, whether respondents associate witchcraft with cats, mice, rats, owls or untimely death. To pose a question like 'Do you think cats are related to witchcraft?' (CSSR & iCWild, 2018) would limit the potential 'Believers' to those who explicitly perceive witchcraft in their lives in this specific form, or potentially to those who just dislike cats. The question used in this research was selected to capture 'spiritual uncertainty' (Kirk, 1996:12), without precluding any particular 'substances, objects, images, persons and spirits' (Ashforth, 2005:2) from being a vehicle of evil magic. The question goes as follows: If a young adult dies of illness, their family should suspect *ukuthakatha* ('witchcraft') sometimes, always, never?' (CSSR & iCWild, 2018). The respondents were also given the option of declaring themselves to be uncertain.

Lending relevance to this chosen variable, Ashforth said that 'cases of premature death or untimely illness in Africa are almost always attributed to the action of invisible forces, frequently those described as witchcraft' (2002:126). These forces can be mobilised directly by a witch, or emerge indirectly through the power of envy and malice within the community – a phenomenon Ashforth terms 'the negative corollary of the doctrine of *ubuntu*' (2005:1). Ubuntu is a statement of sociality: one person's existence is dependent on, or *through*, another's. It is generally understood as a form of supportive connection among people, but as Ashforth (2005) argues, it has a dark side in that people can be harmed through other people too. Whether people feel that 'the secret source of power lying behind appearances is inherently evil' (Ashforth, 2002:139), and could be the cause of a young person's death, has greater implications for social cohesion and personal agency than whether this power comes specifically in the form of rodents, cats or owls.

Table 1 shows that this untimely death variable correlated with beliefs that cats and owls are linked to witchcraft. The table shows the Chi-square tests for categorical variables, compensating for survey design and post-stratification.² For cats and owls, these tests each yield p-values less than 0.01. This means that the null hypothesis is rejected at the 1% significance level and we conclude that there

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² Chi-square test: H₀: Perceiving witchcraft to be the cause of untimely death ('Sometimes' or 'Always') is independent of perceiving witchcraft to be related to rodents, cats or owls respectively H₁: Believing in witchcraft is statistically correlated to the animal in question

is a statistically significant relationship between the untimely death variable and superstitious beliefs about cats and owls in the KRS. This means that people who blamed witches for the death of young people were more likely also to suspect cats and owls of being agents of witchcraft. In the qualitative responses recorded by the KRS, people expressed a fear of both cats and owls, especially the noises they make in the night. Furthermore, in many of the responses people used timerelated phrases, like 'these days' and 'recently', illustrating that animal-related witchcraft is perceived to be exigent and evolving. For example, people said things like 'people these days use cats to do dirty things. Today's cats, when they are walking on the roof, you would believe that they are human beings' and 'I'm afraid of owls now because they act strange and because of the sounds they make' (CSSR & iCWild, 2018). It is argued that the chosen dependent variable, pertaining to magic-induced death, accounts for 'the inherent capacities of human persons to cause supernatural harm' (Ashforth and Nattrass, 2005:289) without precluding these animal forms as ways in which a person may experience witchcraft.

Table 1 shows that there is no statistically significant relationship between those who associated rats and mice with witchcraft and the untimely death variable. Only 49.4% of the population in Site C believed that rodents are linked to witchcraft. This is less than the 70.8% and 81.1% who believed respectively that cats and owls represented the supernatural. Thus, despite reports of 'mutant, even supernatural' (Nattrass et al., 2018:6) rats, it seems that people in Site C were not overwhelmingly convinced that rodents were vehicles of witchcraft.

Table 1: Testing the relationship between dimensions of the witchcraft paradigm in the KRS

paradigm in the Kr		D-1:	T-4-1		
Rodents are Linked	Non-Believers	Believers	Total		
to Witchcraft	27.00	- 4 004	1000		
'Never' or 'Don't		74.8%	100%		
Know'	47.9%	51.5%	50.6%		
'Always' or	28.0%	72.0%	100%		
'Sometimes'	52.1%	48.5%	49.4%		
Total	26.6%	73.4%	100%		
	100%	100%	100%		
Pearson: Uncorrected	d chi2(1) = 0.	0264			
Design-based F(1, 7	= 0.0427	P = 0.8422			
Cats are Linked to	Non-Believers	Believers	Total		
Witchcraft					
'Never' or 'Don't	37.4%	62.7%	100%		
Know'	54.7%	22.9%	29.2%		
'Always' or	12.8%	87.2%	100%		
'Sometimes'	45.3%	77.1%	70.8%		
Total	19.97%	80.0%	100%		
	100%	100%	100%		
Pearson: Uncorrected	chi2(1) = 17.	2652			
Design-based F(1, 9	= 13.7311	P = 0.0049***			
Owls are Linked to		Believers	Total		
Witchcraft					
'Never' or 'Don't	47.9%	52.1%	100%		
Know'	45.3%	12.3%	18.9%		
'Always' or	4.4	86.5%	100%		
'Sometimes'	54.7%	87.7%	81.1%		
Total	20.0%	80.0%	100%		
	100%	100%	100%		
Pearson: Uncorrected			1		
Design-based F(1, 9	(/	P = 0.0014***			
	*** p<0.01, ** p<				
p 10102, p 1012					

Table 2: If a young adult dies of illness, their family should suspect ukuthakatha ('witchcraft')?

Degree of Suspicion	Frequency	Percentage
Always	75	33.9
Sometimes	102	46.2
Uncertain ('Don't Know')	7	3.2
Never	37	16.7
Total	221	100.0

As seen in Table 2, 33.9% of the Site C believed that witchcraft was 'Always' the cause of untimely death by illness, while only 16.7% of people felt this was 'Never' the case. However, it must be acknowledged that the KRS, and any other survey measuring witchcraft beliefs, might have some inaccuracies. According to Ashforth (2005:14), 'people rarely feel free to talk of such things when they do not feel free to laugh'. When asked about this in the focus group, people declared that they were comfortable to answer honestly about witchcraft. This could have been because the KRS interviewers were Xhosa-speaking people from Khayelitsha. Furthermore, the fact that only 3.2% of people responded that they 'Don't Know' if witchcraft explains untimely death reflects that people felt confident to answer categorically (with 'Sometimes', 'Always' or 'Never') and thus arguably truthfully. It can therefore be assumed that this research provides a reasonably accurate reflection of how people in Site C felt about witchcraft in 2017/8.

Table 3 collapses into a single group people who said they 'Always' or 'Sometimes' accept witchcraft as the reason for a young person's death. For the purpose of this research, these people are classified as Believers, while the people who answered 'Never' or 'Don't Know' are classified as Non-Believers. Despite the evidence in the literature that witchcraft-induced anxiety, and 'uncertainty' (Kirk, 1996:2) in general, are synonymous, suggesting that the people who 'Don't Know' might actually be Believers, this research focuses on understanding under what circumstances one is most likely to unequivocally envisage witchcraft as a part of one's reality. More specifically, the paper investigates whether trust in people (an important indicator of social capital), gender, rural origins, socioeconomic circumstances, and feelings of personal agency affect unequivocal beliefs in witchcraft.

Table 3: Categorising Believers and Non-Believers

Belief	Degree of	Percentage	Frequency	Belief	Belief
Status	Suspicion			Status	Status
				Frequency	Percentage
Believers	Always	33.9	75	177	80.1
	Sometimes	46.1	102		
Non- Believers	Uncertain ('Don't Know')	3.2	7	44	20.0
	Never	16.7	37		
Total		100.0	221	221	100.0

Table 3 shows that the witchcraft paradigm was a kind of 'master narrative' (Melley, 2002:59) in Site C. 80.1% of people, the majority, were Believers. Most of these Believers suspected witchcraft was 'Sometimes', but not 'Always', the cause of a young person's untimely death. While the complex sample design allows this estimate, and others, to be unbiased, it is not as precise as a simple random sample (SRS) of Site C could have been. The witchcraft dummy's mean, the fraction of Site C comprising of Believers, has a design effect of 2.42. This tells us that for the KRS to achieve the same precision as a SRS, the sample size would need to be 2.42 times as large.

5. Descriptive Statistics: Characterising Believers and Non-Believers in Site C

To better gauge if there were socioeconomic foundations to witchcraft beliefs in Site C, the following four tables have been created, using the post-stratified probability weights and correcting for stratification and clustering.

Table 4: Characteristics of Believers and Non-Believers

	Pers		racteristics			
	Non-Believ		Believers			
Female	25.6%		74.4%		100%	
2 0	20.070	71.6%	,, 0	51.9%	10070	55.8%
Male	12.8%	, 1, 1, 0, 10	87.2%	0 21,5 7,0	100%	22.070
	12.0,0	28.4%	071270	48.1%	10070	44.2%
Total	20%		80%		100%	
		100%		100%		100%
Pearson: Uncorrected	chi2(1)	= 5.5	988		L	
Design-based F(1, 9	, ,	0.9191	P = 0.0092	***		
Age		35.1		36.4		36.2
Pr(T > t) = 0.5486					I.	
Matric Certificate	24.1%		75.9%		100%	
(Grade 12)		36.1%		28.6%		30.1%
No Matric	18.3%		81.6%		100%	
Certificate		63.9%		71.4%		61.9%
Total	20%		80%		100%	
		100%		100%		100%
Pearson: Uncorrecte	d chi2(1)	= 0	.9495			
Design-based F(1, 9	Q(t) = Q(t)	0.8222	P = 0.3882			
Scaled Household	0.2998		0.3174		0.3139	
Asset Index						
Pr(T > t) = 0.6552					1	
Not Employed	26.0%		74.0%		100%	
		64.4%		45.8%		49.6%
Employed	14.1%		85.9%		100%	
		35.6%		54.2%		50.4%
Total	20%		80%		100%	
		100%		100%		100%
Pearson: Uncorrected			8834			
Design-based F(1, 9		5.7521	P = 0.0400	**	T	
Born in the Eastern	15.0%		85.0%		100%	
Cape		56.1%		79.4%		74.7%
Born Elsewhere	34.7%		65.3%	• • •	100%	
	• • • • • • • • • • • • • • • • • • • •	43.9%	000:	20.6%	4005	25.3%
Total	20%		80%		100%	
	1000		1000/		1000/	
	100%		100%		100%	
Pearson: Uncorrected	, ,	= 10.				
Design-based F(1, 9			P = 0.0846			
	*** p<0	.01, ** p<	<0.05, * p<0).1		

As shown in Table 4, there was a statistically significant relationship between believing in witchcraft and one's gender according to the Pearson chi-squared test for independence. A greater proportion (87.2%) of men were Believers compared to women (74.34%). Concurrently, while only 50.4% of Site C was employed or self-employed, a greater proportion of Believers (54.2%) fit into this group than Non-Believers (35.6%).³ This runs counter to the argument that socio-economic marginalisation incites witchcraft beliefs- a conspiracy theory that helps people to explain their suffering. Yet being employed in a context of widespread unemployment provokes other anxieties, notably that envy and malice from others might heighten the risk of a witchcraft attack. The nature of the relationship between employment status and witchcraft beliefs is thus unclear, and will therefore be explored in the regression analysis, where other relevant variables can be held constant.

Table 4 also shows that 79.4% of those who migrated to Cape Town from the Eastern Cape (i.e. originated from a more rural and arguably 'traditional' culture) were Believers compared to 56.1% of others, the vast majority of which were born in Cape Town. This difference is statistically significant at the 10% level. Neither age nor having a matric certificate were statistically significantly related to witchcraft beliefs.

The literature suggests that witchcraft beliefs are correlated with existential vulnerability, notably conspicuous differences in socio-economic standing. However, one's household asset index was statistically unrelated to one's witchcraft beliefs. This index is the summation of recorded household items weighted by their average prices and scaled to 1, weighting against the wealthiest respondent in the sample (CSSR & iCWild, 2018). This lack of significance could be because there was not a big enough gradient in terms asset values in Site C.

There was also no statistically significant difference between formal and informal housing areas regarding the distribution of Believers and Non-Believers. However, looking at Map 2, spatial analysis reveals that answers varied spatially, with some suggested neighbourhood effects. There was clustering of those who answered that witchcraft is 'Always' the reason a young person dies of illness in the top left corner in the shack settlement closest to the N1 highway. Moving to the cluster on the bottom right in shack settlements known as 'Taiwan' and 'Island', responses varied much more widely.

Judging from the lack of significance on the asset index *and* the housing variable, it is concluded that socioeconomic vulnerability in general did *not* serve as a

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³ To be 'Not Employed' means one is a student, retired, doing domestic work, unemployed or disabled.

foundation for the belief that witches can, and do, murder young people. This being said, given the homogeneity of socioeconomic status within Khayelitsha, and furthermore, within Site C, it would useful to investigate this hypothesis with a broader sample, including people from outside an informal settlement context. Conspicuous differences in living standards cannot be entirely discarded as a predictor of a person's belief in witchcraft, however. While there were no questions asked in the KRS about jealousy explicitly, or about perceptions of relative welfare or community inequality, it is evident in the qualitative responses that people did compare their livelihoods to those of others. For example, resource and service nexuses emerged as a consistent talking point for people in the KRS. Without being asked, many respondents expressed being 'lucky' (CSSR & iCWild, 2018) that they had clean or private toilets. Conversely, others complained about insufficient public toilets and especially about having to use shared chemical toilets. They said: 'the council workers used to clean [the toilets] for us but now we don't see them anymore' (CSSR & iCWild, 2018). Specifically, Table 5 shows that 96.8% of the people using shared chemical toilets believed in witchcraft compared to 70.1% of those with other toilet facilities. This was a statistically significant difference (at the 10% level). But, note also that only 5.2% of Site C use these shared chemical toilets.

Table 5: Living Environment of Believers and Non-Believers

Table 3. Living Environment of Believers and Non-Believers							
	Living Er	vironment					
	Non-Believers	Believers		Total			
Formal Housing	g 19.0%	81.1%		100%			
(Brick)	46.09	6	49.1%		48.5%		
Informal Housing	g 20.9%	79.1%		100%			
(Shack)	54.09	6	50.9%		51.5%		
Total	20%	80%		100%			
	1009	6	100%		100%		
Pearson: Uncorrec	ted chi2(1) =	0.1348					
Design-based F(1)	= 0.0521	P = 0.8246	-				
Chemical toilet	3.3%	96.8%		100%			
outside the house,	0.9%		6.3%		5.2%		
shared with other							
households							
Other Toilet	20%	80%		100%			
Facility	99.1%		93.7%		94.8%		
Pearson:							
Uncorrected chi2	$(1) \qquad = 2.1275$						
Design-based F(1)	(9) = 4.3801	P = 0.0659	*				
	*** p<0.01, **	p<0.05, * p<	0.1				



Map 2: If a young adult dies of illness, their family should suspect ukuthakatha ('witchcraft') sometimes, always or never? (Source: CSSR & iCWild, 2018). Map produced by Jed Stephens.

A set of variables from the KRS are used to proxy for Mirowsky and Ross's (1983) concept of perceived powerlessness: the belief that one's choices and actions are ineffective in determining the important outcomes in one's life. Because the KRS was designed to investigate the extent of, and coping strategies for, rodent infestation in Site C, the chosen variables pertain specifically to rats. Controlling for whether respondents believed that the rat problem had become worse, and assuming that no one actually *wanted* rats in their living environment, we use the purchase of rat poison or traps as an indicator of personal agency. It is hypothesised that there would be a negative relationship between this and witchcraft beliefs.

As seen in Table 6, over two-thirds of the population (67.6%) purchased poison or used a snap trap or a glue trap in the year preceding the KRS.⁴ This variable is an appropriate proxy for whether one took action against rodents or not because

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⁴ The KRS listed 6 types of rat poisons people could agree to having used. These consisted of poison to control flies and cockroaches (for example, Green Leaf), Rattex, Blue squares ('Steemic'), Blue wheat, Black wheat and Aldicarb (small black grains, 'two-step') (CSSR & iCWild, 2018). Aldicarb is a widely available and cheap illegal pesticide (Nattrass, 2018:7).

poison and traps are the most common methods of dealing with rats in Khayelitsha (Nattrass et al, 2018).⁵ An overwhelming majority of Non-Believers (83.7%) took action. This is more than the 63.7% of Believers who did so.

Table 6: Personal Agency of Believers and Non-Believers

Table 6. Persona							
Dynamics of Personal Agency							
	Non-Believ	vers	Believers		Total		
The rat problem	25.5%		74.5%		100%		
did not get worse		65.3%		44.7%		48.6%	
('Got better' or							
'Stayed the same')							
The rat problem	12.8%		87.2%		100%		
got worse		34.7%		55.3%		51.4%	
Total	20%		80%		100%		
		100%		100%		100%	
Pearson: Uncorrecte	ed chi2(1)	= 4.	.9343				
Pearson: Uncorrected Design-based F(1)	' '			16**			
	' '			<i>1</i> 6**			
	(1, 9) =			16**	100%		
Design-based F((1, 9) =		P = 0.024	36.2%		32.4%	
Design-based F() Did not use traps	(1, 9) =	7.2609	P = 0.024			32.4%	
Design-based F() Did not use traps or poison in the	9.9%	7.2609	P = 0.024			32.4%	
Did not use traps or poison in the past year	9.9%	7.2609	P = 0.024		100%	32.4%	
Did not use traps or poison in the past year Used traps or	9.9%	7.2609	P = 0.024	36.2%	100%		
Did not use traps or poison in the past year Used traps or poison in the past	9.9%	7.2609	P = 0.024	36.2%	100%		
Did not use traps or poison in the past year Used traps or poison in the past year	9.9%	7.2609	P = 0.024 90.1% 75.8%	36.2%	100%		
Did not use traps or poison in the past year Used traps or poison in the past year	9.9% 24.3% 20%	7.2609 16.3% 83.7%	P = 0.024 90.1% 75.8%	36.2% 63.7%	100%	67.6%	
Did not use traps or poison in the past year Used traps or poison in the past year Total	24.3% 20% red chi2(1)	7.2609 16.3% 83.7% 100% = 6	P = 0.024 90.1% 75.8%	36.2% 63.7%	100%	67.6%	

Exemplifying the more subjective experience of the rat problem, 51.4% of people felt that this infestation had *got worse* in the past year. Of these pessimists, 55.3% were Believers. Non-Believers were more likely to say that the rat problem had either 'Stayed the same' or 'Got better'.

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⁵ In 2014 the City of Cape Town launched an educational campaign to discourage poisoning, especially illegal pesticides (Stone, 2014). In spite of this, street sales of rodenticides in Khayelitsha have been difficult to regulate because 'as soon as the police and related environmental health officials start to 'raid' street sellers, most disappear quickly from the scene' (Nattrass et al., 2018:7).

Table 7: Feelings of Suspicion and Distrust by Believers and Non-Believers

Dellevers	Suspicion an	d Distrust	
	Non-Believers	Believers	Total
Agree or neutral	35.1%	64.9%	100%
that most people can	48.2%	22.3%	27.5%
be trusted			
Disagree that most	14.3%	85.7%	100%
people can be	51.8%	77.7%	72.6%
trusted			
Total	20%	80%	100%
	100%	100%	100%
Pearson: Uncorrected	` /	1.9156	
	(9) = 7.0583		1,000
Disagree or neutral		69.8%	100%
that neighbours will	65.4%	37.7%	43.2%
criticise one for			
littering	12.20/	97 90/	1000/
Agree that	12.2% 34.7%	87.8%	100% 56.8%
neighbours criticise for littering	34./%	02.5%	30.8%
Total	20%	80%	100%
Total	100%	100%	100%
Pearson: Uncorrected			10070
Design-based F(1, 9	(/	P = 0.0203**	
Disagrees the best		84.83%	100%
way of controlling	6.52%	9.15%	8.62%
rats is for the city to			
improve rubbish			
collection			
Agrees the best way	20.52%	79.48%	100%
of controlling rats is	93.48%	90.85%	91.38%
for the city to			
improve rubbish			
collection	200/	000/	1000/
Total	20%	80%	100%
D	100%	100%	100%
Pearson: Uncorrected	' '	0.3087 P = 0.6654	
Design-based F(1, 9	/	P = 0.6654	
	*** p<0.01, ** p	<0.03, * p<0.1	

Whether perceived powerless turns into paranoia, according to Mirowsky and Ross, will depend on general trust in other people. There are two variables in the KRS which can be used to proxy for distrust and suspicion. These are whether the respondent felt that people in general can be trusted; and whether the respondent felt that neighbours would criticise one another for littering. Agreeing that community members criticise litterers could be interpreted as an indicator that one feels watched by neighbours who are invested enough in one's actions to make commentary and, by extension, to enact witchcraft against one. Table 7 shows that Believers (77.7%) were much more likely than Non-Believers (51.8%) to disagree with the statement that people in general can be trusted. Believers (62.3%) were also more likely than Non-Believers (34.7%) to agree that neighbours would criticise litterers. Both differences are statistically significant at the 5% level.

It is hypothesised in the literature that this witchcraft-linked powerlessness could have implications for the way people relate to the state, in particular, whether they hold the state accountable for their poverty and misfortune. As such, we examine the responses to the question which asked respondents if they agreed that the best way of controlling rats was for the city to improve rubbish collection. Had this variable been statistically significant, it would have shown that Believers and Non-Believers had a different perception of the role of the state in maintaining the hygiene and safety of their living environment (where it pertained to rodent infestation). This was not the case. There was no statistically significant relationship here.

6. Using multiple linear regression analysis to explore the determinants of witchcraft beliefs in Site C

Multiple linear regression analysis is used here to further explore some of these correlates of witchcraft beliefs in Site C. In selecting a set of possible explanatory variables, it is good practice to be guided by a set of hypotheses. These are derived from the above literature review in conjunction with the KRS qualitative responses and focus group.

- 1. Feeling powerless that one's actions will not produce the desired outcomes dovetails with an acceptance of witchcraft as a form of external control.
- 2. Feeling suspicious and distrustful of others evokes paranoia, which in the context of Khayelitsha manifests itself in acceptance of malevolent forces (witchcraft). Note, however, that the relationship is likely to run in both directions in that the witchcraft paradigm itself evokes paranoia, thereby

eroding community trust and affecting the way in which neighbours treat each other in daily life.

To test these, a probit regression is run on the binary dependent variable: whether the respondent believes that if a young adult dies of illness their family should suspect *ukuthakatha* ('witchcraft'). These results take account of the complex sample design and are thus representative of the target population, Site C, as a whole in 2017/18.

However, to systematically model dynamic witchcraft beliefs is a difficult task. As such, to prevent over-fitting of the data, the model validation technique used here is the crossfold-validation test. This test performs 5-fold cross-validation on a specified model to evaluate its ability to fit out-of-sample data. In other words, it tests how robust the findings of the regression would be if a new sample was drawn from the population. The crossfold result for each model is the average of 5 estimates for the root mean squared error. This is a comparative measure and a lower result indicates a better fit.

As seen in Table 8, being a man increased the average marginal probability of believing that witchcraft should be suspected for the death of a young person by between 12 and 15 percentage points, depending on the other variables in the model. Niehaus and Jonsson argue that '[conspiracy theories] are informed by men's humiliating experiences of job losses and deindustrialization in the global labour market' (2005:179). They contend that this is a particular kind of identity crisis related to the destruction of traditional conceptions of masculinity, according to which the man should play the role of provider.

To explore the effect of being a man, irrespective of whether one had a job and could play this role, regression 2 includes employment status whilst dropping the gender variable, and regression 3 includes both. Employment status is not statistically significant in either regression and the effect of being a man remained unchanged when employment status was added. Furthermore, including employment status weakens the model as indicated by the crossfold estimate. This suggests that being male and harbouring a conspiracy theory like witchcraft, was independent of whether a man had a job.

Being a migrant from the Eastern Cape has a coefficient with a positive sign, but the result is not statistically significant. We retain the variable in the model because it is statistically significant in the bivariate analysis and is a useful control for coming from a rural area.

To 'Disagree' or 'Disagree Strongly' that, in general, others are trustworthy was strongly correlated with witchcraft suspicions, raising the average marginal

probability by between 17 and 22 percentage points depending on the control variables. This supports Mirowsky and Ross's analysis that distrust produces paranoia, a belief that others are plotting to harm one (in this case though witchcraft). It is important to recall that the direction of causality could also run in the other direction- witchcraft beliefs could be provoking a superstition that others have bad intentions. Gershman's argument that the witchcraft paradigm is a 'mutually reinforcing set of antisocial beliefs and behaviours' (2016:183) is useful here.

Table 8: KRS 2018 Regression Output

If a young adult dies of illness, should their family suspect ukuthakatha

('witchcraft')?

(witcherajt):	1	2	3	4	5		
Personal Characteristic							
Male	0.12**		0.12**	0.13***	0.15***		
	(0.04)		(0.04)	(0.03)	(0.03)		
Migrant from	0.19	0.18	0.18	0.17	0.10		
the Eastern	(0.13)	(0.14)	(0.13)	(0.11)	(0.09)		
Cape		, ,	, ,				
Employed		0.06	0.04				
		(0.05)	(0.05)				
				icion & Mistr	ust of Others		
Disagrees that	0.22***	0.20**	0.21**	0.21***	0.17**		
people in	(0.06)	(0.07)	(0.07)	(0.05)	(0.08)		
general can be							
trusted							
Neighbours				0.16**	0.16**		
criticise litterers				(0.06)	(0.06)		
				Pers	sonal Agency		
Feels that the rat					0.13**		
problem has got					(0.05)		
worse							
Purchased					-0.14**		
poison or traps					(0.04)		
in the past year							
N	221	221	221	221	188		
Prob>F (for the	0.0481	0.0205	0.0717	0.0102	0.0527		
probit)							
Crossfold	0.387	0.390	0.392	0.396	0.375		
Result:		1 1	1 1				

Margins are reported, robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Regressions 4 and 5 include a dummy variable for whether the respondent believed that neighbours would criticise others for littering in the community. Geis and Ross would argue that rubbish in an urban area reflects a 'breakdown of informal social control' (1998: 232) which contributes to feelings of powerlessness. Like most informal settlements, Site C has an infamous rubbish problem. As reported by a local news company, GroundUp, littering is even sometimes 'an act of protest...to make more work for the cleaners' (Green, 2018) who have been contracted externally by The City of Cape Town. Adding to the complexity of littering norms, Green's research notes that, because of the uneven dispersion of rubbish collection containers and the unlawful takeover of containers by car-washers and drug-users, certain groups in Site C endorse littering while others do not.

Regressions 4 and 5 show that feeling that neighbours criticised litterers raises the average marginal probability of witchcraft suspicions by 16 percentage points. This suggests that Believers felt at once watched by their neighbours *and* held accountable for their non-cooperative actions. The fact that this feeling runs with a belief in the wilful animosity of others, in the form of witchcraft, is perhaps suggestive that people in Site C are living in a state of suspicion, even fear, of one another. According to Ashforth, 'everyday life [in an informal settlement] - as in most of Africa, most of the time- is lived in a mode of suspicion and fear of occult assault' (2005:12).

Regression 5 includes variables pertaining to personal agency. Controlling for the other variables in the model, believing that the rat problem had got worse in the past year is associated with an increase in the average marginal probability of witchcraft suspicions by 13 percentage points. This could expose an urgent pessimism among Believers: that their situation is perpetually becoming more dangerous.

Irrespective of whether one felt this to be the case, doing something about it (showing agency), by purchasing poison or traps, reduced the probability of witchcraft belief by 14 percentage points. In other words, Believers were less likely to have done anything about the rat infestation, irrespective of how affecting they perceived the infestation to be. This could illustrate a lack of self-efficacy: the perception that if witches are using magic to send rodents to Site C then one is powerless to protect against their invasion and therefore should not even try. Given that less than half of the population specifically associated rodents with witchcraft, this could also be a more general psychological phenomenon of 'agency panic' among Believers when it comes to difficult life circumstances.

This could have severe consequences for civil action. If Believers assign control to magical forces, instead of to themselves or to the state, they could be less

inclined to proactively pursue the objective betterment of their circumstances, such as through rodent control methods. This speaks to Gershman's claim that witchcraft beliefs disrupt the 'fragile process of African economic development' (2016:183). This being said, the variable controlling for whether people felt the state could play a role in curbing rodent infestation (through improved rubbish collection) was statistically insignificant in the bivariate analysis.

Note that regression 5 has the lowest crossfold score, meaning it has the lowest sample predictive error. Therefore, including variables which proxy for personal agency *and* social cohesion, or the lack thereof in both cases, makes for the best fit to the KRS data.

7. Exploring the Khayelitsha Panel Survey (Wave 3, 2007)

There is a limited number of attitudinal questions in the KRS which could serve as effective proxies for personal agency and social cohesion in general, outside the context of the refuse disposal crisis and consequent rodent infestation. As such, the Khayelitsha Panel Study (KPS) is used for further exploration. Wave 3 of this survey (conducted in 2007) asked 517 people questions about work, living arrangements, health and sexual relationships. This was the follow up survey from a panel data set created in 2003. For the purposes of this research, Wave 3 is treated as a simple random survey that was representative of Khayelitsha as a whole, not just Site C. This data was gathered a decade earlier than the KRS, limiting its relevance as a comparison. However, as this survey asked questions pertaining to perceived powerlessness (depression) it provides an opportunity to explore the correlation between this and witchcraft beliefs.

Table 13: KPS 2007 Regression Output

If a young adult dies of illness, should their family suspect ukuthakatha ('witchcraft')?

	1	2	3	4
Agency Panic	0.16***		0.12**	0.12**
	(0.04)		(0.06)	(0.06)
Depression		0.02**	0.01	0.01
		(0.01)	(0.01)	(0.01)
Male				0.04
				(0.04)
N	517	301	517	517
Prob > chi2	0.000	0.0005	0.0005	0.0005
Crossfold Result:	0.478	0.481	0.477	0.481

Margins are reported, robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The KPS survey asked five questions about one's mental health all with answers 'never', 'hardly ever', 'sometimes', 'often' and 'all the time' coded 1 to 5 respectively. The first question asked, 'in the past year have you felt that problems are piling up so high that you cannot cope'. This can be taken as an indicator of 'agency panic' and is coded as a binary variable (according to which one either felt this way 'sometimes', 'often' or 'all the time', experiencing this powerlessness, or 'never' and 'hardly ever'). The other four questions asked about feeling sad and depressed, lonely, nervous or stressed and worried or anxious. Adding the scores of these four variables produces a 'depression index'.

Table 13 shows that 'agency panic' is strongly and positively associated with the belief that witchcraft should be suspected if a young person dies of illness. It raised the average marginal probability of believing this by 16 percentage points in the simple linear regression 1. Being depressed was also positively related to holding this witchcraft belief as seen in regression 2. However, the effect of depression more broadly on witchcraft beliefs is much smaller and the statistical significance of this variable disappears once also controlling for agency panic. Being male has a marginal (and statistically insignificant) impact, but including it weakens the model.

8. Conclusion

The analysis of the 2007 data from Khayelitsha points to the centrality of 'agency panic', or feelings of powerlessness when explaining witchcraft beliefs. The more recent KRS survey data shows that witchcraft beliefs are the norm. According to the KRS, Believers were statistically more likely to be men, all else held fixed. The value of one's assets, having migrated from the Eastern Cape and whether a person had a matric certificate, had no statistical bearing when it came to witchcraft beliefs. It is therefore concluded that socioeconomic vulnerability in general did not stimulate this kind of collective conspiracy theory in Site C.

The only variable that could proxy for personal agency (*not* experiencing 'agency panic') in the KRS data set was whether people had taken action in the face of rodent infestation by purchasing traps or poison. Some people in Site C did not take such action against rodent infestation even if they felt that the problem had become worse in the past year. This arguably illustrates a severe lack of personal agency, perhaps because the Believers felt that their actions would not achieve their desired ends (in this case, rodent control) or because they simply felt helpless in the face of adversity.

This perceived powerlessness arguably manifests as paranoia: the erosion of within-community social capital that encompasses both distrust and blame. Believers in Site C were less likely to trust other people. Furthermore, within the witchcraft paradigm there was a sense that neighbours observed and criticised one another in daily life.

As such, it can be judged that the witchcraft paradigm in Khayelitsha is statistically bound up in perceived powerlessness, distrust of others and, ultimately, that it constitutes a form of paranoia in everyday life.

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