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Understanding Preferences for Humane and Cruel Treatment of Pest Rodents in Site C, Khayelitsha, South Africa

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ABSTRACT

The cruel treatment of pest rodents is a neglected area of study. This paper uses a representative survey from Khayelitsha (Cape Town) to show that a minority of residents preferred rodent control to be humane but that most did not care how rats are killed and almost a fifth said they would be 'happy' if the rats suffered. Agreeing that animal welfare is important and having become used to the presence of rats raised the probability of support for humane rodent control and decreased support for cruel rodent control. Being concerned that rats might be linked to witchcraft increased the probability of a pro-cruel stance. These results were robust to the inclusion of measures of rodent presence in the household and socio-economic status. This highlights the importance of values (notably concern about animal welfare) and cultural beliefs – in this case concerns that rodents might be linked to witchcraft – in predicting whether respondents are likely to have a pro-cruel stance on rodent control or not. Promoting the humane treatment of pest animals in this context thus requires engaging with local culture.

KEYWORDS

Animal welfare; rat and rodent control; SPCA; cruelty; witchcraft

Introduction

The principle of treating animals humanely is well established globally but is commonly not applied to pest rodents. Despite growing concern about the welfare of pest animals (Hadidian, 2015; Mason & Littin, 2003; Meerburg, Brom, & Kijlstra, 2008; Malcolm, 2005; Yeates, 2010), inhumane forms of rodent control remain ubiquitous (Baker & Sharp, 2015). Understanding why people tolerate, and even embrace cruel treatment of pest rodents, is a neglected area of study. This paper analyzes data from a representative sample of people from Site C, Khayelitsha, a low-income suburb of Cape Town, to explore whether cultural beliefs, exposure to rodent damage and attitudes toward animal welfare shaped people's stance on the humane or cruel treatment of pest rodents. It is, to the best of our knowledge, the first empirical exploration of its kind in either a developed or developing country context.

Religious and philosophical prohibitions against animal cruelty long predate the first legislation against it, which was enacted in the UK and USA in the 1800s (Favre & Tsang, 1993, p. 1–2). Jeremy Bentham, the British lawyer and philosopher, summarized the need and justification for animal rights legislation by arguing, "The question is not, Can they *reason*? nor, Can they *talk*? but *Can they suffer*?" (cited in Favre & Tsang, 1993, p. 3). Bentham's question reflects the changing perception of animals in nineteenth-century Britain from being simply objects of personal property, to creatures deserving of protection – including from their owners (Arluke & Lockwood, 1997; Favre & Tsang, 1993).

The passing of legislation against cruelty toward animals and people has come to be seen as part of a broader notion of moral progress, whereby it is acknowledged that societies can advance from being less concerned about their inhabitants to caring more about them and expanding the circle of

concern to include non-human animals (Singer, 2011, p. 14). The field of ethics rests on the application of reason to the expansion of that circle of concern, and on the perpetual questioning of the behaviors and habits societies inherit from their ancestors (Arluke & Lockwood, 1997; Singer, 2011). The first legislation with the sole purpose of preventing cruelty to animals in the UK passed in 1822, expanding the circle of concern to cattle (Li, 2000, p. 266). The Society for the Prevention of Cruelty to Animals (SPCA) was launched two years later.

SPCAs originated in the global North and then expanded into the global South where their reach and influence has been limited by institutional failures and the prioritization of poverty alleviation over animal welfare (Acharya, Acharya, & Wilson, 2018; de la Cruz et al, 2018). Acharya et al note that animal welfare charities in a developing country context can perhaps help change attitudes and behavior but observe that this is likely to happen only if they are “integral” to the community and are not seen as “parachute” organizations (2018, p. 12). In South Africa, the NSPCA services both high- and low-income areas, but because it originated as an offshoot of the animal welfare movement in nineteenth century Britain and was created during the hey-day of apartheid (early 1960s), it retains strong connotations of being a bourgeois, white (and colonial) project.

In 2015, the NSPCA was the subject of local controversy in Cape Town when it issued a prohibition order against a government job creation programme in Khayelitsha in which previously unemployed people were hired to set cage traps in rodent-infested homes and then drown the captured rats (Nattrass, Loubser, & Stephens, 2019). The programme was presented by City officials as pro-poor (because it created jobs and provided a service to people suffering from rat infestation in shack settlements) and as more humane than rodenticides (which, in addition to causing pain and distress to rats, posed dangers also to other animals such as cats and owls through secondary poisoning). However, the NSPCA focused on the fact that drowning was cruel, and the programme was brought to a halt.

The incident raised a set of questions about the humane treatment of rats (notably, whether drowning or rodenticide poisoning resulted in greater suffering) and whether the NSPCA’s values and approach toward rodent control had any support in the local community. The University of Cape Town’s Centre for Social Science Research (CSSR) and Institute for Communities and Wildlife in Africa (iCWild) conducted a representative survey of people in Site C, Khayelitsha, to investigate experiences with rodent infestation and rodent control as well as a range of attitudes toward animals and rats (CSSR & iCWild, 2018). We use this data to explore the connection between attitudes to animal welfare and whether people had a pro-cruel or pro-humane stance – and then we test to see whether socio-economic circumstances and experience of rodent damage affected the relationship.

Rats and mice (*Mus musculus*) are the most prolific and common urban pest species worldwide (Feng & Himsworth, 2014; Hilton, Willis, & Hickie, 2002; Stenseth et al., 2003; Traweger, Travnitzky, Moser, Walzer, & Bernatzky, 2006) and significant pest control effort is directed toward them, especially toward the brown rat (*Rattus norvegicus*) (Biehler, 2013; Feng & Himsworth, 2014). In urban centers they can cause significant structural damage and food spoilage (Feng & Himsworth, 2014; Hilton et al., 2002; Tamayo-Uria, Mateu, Escobar, & Mughini-Gras, 2014), as well as pose a threat to humans as vectors of disease (Archer, Appleton, Mukaratirwa, Lamb, & Schoeman, 2017; Bonnefoy, Kampen, & Sweeney, 2008; Hilton et al., 2002, p. 164). The presence of pest rodents is correlated with the type of conditions prevailing in Khayelitsha and other informal housing areas, including inadequate waste disposal and poor socio-economic conditions where buildings and public spaces are decrepit and neglected (Roomaney, Ehrlich, & Rother, 2012, p. 2; Tamayo-Uria et al., 2014; Traweger et al., 2006).

Rodent control is a complex ethical issue because it involves considerations of animal suffering, human safety and economic cost/efficacy (Mason & Littin, 2003; Meerburg et al., 2008, Yeates, 2010). Historically, animal rights debates have not engaged directly with the rodent issue, perhaps because of the public’s lack of sympathy toward “vermin” relative to animals in general (Edelman, 2002; Mason & Littin, 2003, p. 24). Ethical treatment of pests requires the weighing up of a more diverse range of interests and entities than the ethics surrounding the treatment of animals in general, especially pertaining to public health and poverty. Where informal settlements grow without access to basic amenities, environmental health services frequently find that rodent pest control

requires more manpower, expertise, equipment, transportation, and supplies than they are able to provide (Allen, Davila, & Hofmann, 2006, p. 13; Richards, O'Leary, & Mutsonziwa, 2006, p. 376). This includes health services responding to pest infestations in informal settlements (Knudsen & Slooff, 1992, p. 2; Taylor et al., 2008, p. 39). Under such circumstances, the ethics of rodent control expand to include considerations of both animal and human welfare in poor communities.

People's reactions to the treatment of animals are heavily influenced by the labels/categories applied to them such as "vermin" versus "domestic", "wild" versus "feral", or "pet" (Rajecki, Rasmussen, & Craft, 1993, p. 45). Within the same species, an animal's fate can be very different depending on whether it is viewed as an object or a pet, or more or less similar to humans (Henry, 2008, p. 22). Herzog (1988, p. 473) observed that in an animal-research facility, the subjects of research projects were categorized as "good mice", with a different moral status in the view of humans, that included protection by law, compared to the "bad mice" of the same species, roaming free in the building and exterminated in unpleasant ways. Likewise, the average greater moral standing and protection enjoyed by dogs relative to pigs, in relation to humans, stems from dogs being perceived as less alien than pigs even though pigs are as intelligent, if not more, than dogs (Rajecki et al., 1993, p. 46).

The treatment an animal eventually receives is shaped by the framing of that animal relative to humans including through public discourse (Munro, 1997, p. 142; Plous, 1993, p. 43). The use of mass media can determine how the public perceives certain animals and human-animal conflicts, and what policies get implemented with regards to them (Munro, 1997, p. 142). The movement for the prevention of cruelty to animals that gained momentum in the nineteenth-century UK was linked to a wider reform movement to improve working conditions and provide welfare relief for the poor (Li, 2000, p. 267). Concern about animal welfare gained momentum too at this time, fueled partly by a more empathetic stance toward animal suffering and a concern that treating animals cruelly had a demoralizing effect on human character and became associated in the public opinion with antisocial behavior such as drunkenness, rowdiness, and the kind of public disorder frequently accompanying animal baiting (Li, 2000, p. 267-268). Later research has identified an association between human's cruelty to animals, and subsequent antisocial behavior including further violence toward animals and humans (Flynn, 2001, p. 72).

The acceptability of violence toward particular species, and toward particular categories of animal within the same species has a social and subjective foundation (Vollum, Buffington-Vollum, & Longmire, 2005, p. 211). Yet this is but one contributing factor toward how a certain species is ultimately treated in reality because humans are capable of morally disengaging from arguably objectionable acts of violence against animals (loc. cit.). Our stance toward animals is the outcome of psychological factors, dependent on the public discourse and contextual framing of the time. This paper probes that foundation with regards to rats in Khayelitsha, by asking questions, in the context of the public debate over the NSPCA's halting of the cage-trapping and drowning project, about cruelty toward rats, perceived links between rats and witchcraft, and rats' perceived threat to children, household possessions, etc.

Khayelitsha was created in the mid-1980s by the apartheid government as a black/African township and it quickly expanded to include both formal and informal settlement areas (South African History Online [SAHO], 2013). The transition to democracy after 1994 brought some improvements to sanitation and services in Khayelitsha, but these have been plagued by inefficiency and corruption (Green, 2018; Social Justice Coalition & Ndifuna Ikwazi, 2014). As of 2011, 45% of dwellings were shacks; 38% of households did not have access to piped water on their property, 28% did not have access to a flush toilet on their property, and 19% did not use electricity (City of Cape Town, 2011). As a low-income, dense settlement, Khayelitsha is especially vulnerable to rodent infestation (Roomaney et al., 2012).

Methods

In 2017/18, the CSSR and iCWild conducted the Khayelitsha Rodent Study (KRS) which surveyed a representative and random sample of 222 residents living in Site C, Khayelitsha (CSSR & iCWild, 2018).

Participants

According to the 2011 population census, 391,749 people live in Khayelitsha, 98.6% of whom are Xhosa-speaking Africans. Khayelitsha comprises 28 “sub-places” or “sections” of which Site C, also known as Ikwezi Park, is the closest to Cape Town and the biggest (with 52,184 people).

In drawing the two-stage random sample of 222 households, use was made of the “small areas” demarcated by the 2011 census as the primary sampling unit. The sample was stratified by whether the small area contained housing that had been planned (formal housing on cadastres) or was informal (no cadastres) and typically shack settlements. The secondary sampling unit comprised the households within each small area. Design probability weights (the inverse of the probability of each respondent being in the sample) were used to adjust the analysis so that conclusions can be generalized to people living in Site C. The size of the estimation sample, using these design weights, was 46,666, which has good agreement with the census. The dataset is available for downloading through the University of Cape Town’s “DataFirst” facility (CSSR & iCWild, 2018). Human research ethics approval for the survey was obtained through the University of Cape Town’s Research Ethics Committee (REC/2017/03/001 and REC/2018/02/006).

Face-to-face interviews were conducted from August 8 2017 to June 30 2018 in the local language, isiXhosa and the first adult person encountered in the household was selected for interview. The questionnaire comprised 16 pages of questions and took approximately 30 minutes. Data were collected on household and personal characteristics, attitudes and experience with rodent infestation. People were happy to talk about rodents, including whether they felt stressed by them, had grown used to seeing them, saw them as a large problem for the household or worried that they might be linked to witchcraft. We had no refusals on these questions and only one household declined to participate in the study. Data was collected using paper questionnaires and photographs (where permission was granted) were taken of rodent damage. Data were captured using Excel and checked for entry errors.

Key characteristics of the sample are as follows: 98.7% spoke Xhosa as their home language; 31.7% had completed high school; 55.9% were women; 61.7% lived in shacks and the average age was 36. A household asset index (weighted by the average price of the asset and scaled to 100) was created to proxy for household socio-economic status. The mean value was 31.4, with a standard deviation of 23.4 and a minimum and maximum value of 0 and 100 respectively.

Statistical analysis

For the multivariate analysis, we used Stata 15.1 to run survey design-adjusted probit regressions on two binary outcome variables drawn from a question asking respondents if they cared whether rats were killed in a cruel way (see Table 1). This question was posed after a set of questions probing what respondents thought about the relative humaneness of poisoning or drowning rats. Those who responded ‘yes, I care and would prefer the rats not to suffer’ were coded 1 for the variable “pro-humane stance” and other answers were coded 0.¹ Those who responded ‘no, and I am actually happy if the rats suffer’ were coded 1 for the variable “pro-cruel stance” and other answers were coded 0. Following Williams (2012) we calculate and present average marginal effects rather than marginal effects at the mean. Wald tests and the average of five crossfold estimates (known as the Brier score for binary outcomes) of the out of sample error are provided.

Table 1. Determinants of pro-humane and pro-cruel stance toward rodent control: univariate analysis for attitudinal variables.

	Total	Pro-humane		Pro-cruel	
		1 = Yes, I care how rats are killed and would prefer them not to suffer	0 = other	1 = No, and actually I am happy if the rats suffer	0 = Other
1 = Agrees with "I think that animal welfare is important (people should be kind to animals)"	46.6%	78.8%	44.6%	30.9%	50.5%
0 = Neutral or disagrees	53.4%	22.2%	55.4%	69.1%	49.5%
Total	100%	100%	100%	100%	100%
Pearson (design based)		F(1,9) = 17.7 p = 0.002***		F(1,9) = 19.0 p = 0.001***	
1 = Agrees with "I worry that rats or mice might be linked to ukuthakatha (witchcraft)"	33.2%	21.8%	33.4%	52.6%	28.3%
0 = Neutral or disagrees	66.8%	78.3%	66.6%	47.4%	71.7%
Total	100%	100%	100%	100%	100%
Pearson (design based)		F(1,9) = 1.55 p = 0.245		F(1,9) = 24.3 p = 0.001***	
1 = Agrees or agrees strongly that has got used to seeing rodents and "they don't bother me much now"	27.0%	51.4%	25.5%	15.0%	29.9%
0 = neutral or disagrees	73.0%	48.6%	74.5%	85.0%	70.1%
Total	100%	100%	100%	100%	100%
Pearson (design based)		F(1,9) = 8.3 p = 0.018**		F(1,9) = 7.1 p = 0.026**	

Nattrass et al. (2019) found that people’s attitudes toward animal welfare were significant determinants of whether respondents supported the cage-trapping and drowning project or not: those who worried about secondary poisoning of non-target wildlife were more likely to favor the project than those who believed that drowning was painful for the rat. Attitudes are also likely to matter when it comes to predicting whether respondents adopt a pro-cruel or pro-humane stance on rodent control. In this paper we test whether people’s attitudes to animal welfare and rodents being linked to witchcraft affected their stance on rodent control.

Our first explanatory attitudinal variable captures the respondent’s general attitude toward animal welfare. The KRS asked respondents to select, on a 5-point Likert scale, their response to the statement: "I think animal welfare is important (people should be kind to animals)." Those who selected "agree" or "agree strongly" were coded 1, and other answers ("disagree", "disagree strongly" or neither "agree" nor "disagree") were coded 0.

Our second attitudinal variable also draws on 5-point Likert scale data pertaining to whether respondents agreed or disagreed that rodents might be "linked to ukuthakatha (witchcraft)". People are known to dislike animals they are afraid of or see as a threat (Byrne, Carpenter, Thoms, & Cotty, 1984, Woods, 2000). We hypothesized that those who believed that rodents might be linked to witchcraft would fear and dislike rats and that this would be positively associated with a pro-cruel stance toward them.

Our third attitudinal variable also draws on 5-point Likert scale data concerning whether those respondents who indicate that they have become used to the presence of rodents and are no longer bothered by them, might adopt a more sympathetic, pro-humane, stance toward them. Focus group discussions (held as part of the KRS) revealed that the relationship between people and rats in Khayelitsha was not a simple one, and that at times there was some grudging respect for the rats that shared their homes (Buckland, 2018). Some people thought that rats might keep out mice and that having a strong territorial rat might keep other rats at bay. Some argued that it was better to warn your household rat that you were coming into a room (for example knocking on furniture or the wall) rather than shouting at it, or hurling objects in its direction. In discourse replete with an undercurrent of witchcraft beliefs, some people argued that if you shout at a rat it will "punish" you by destroying your clothes and possessions. While this certainly does not depict a "friendly" relationship with rats, it suggests a form of recognition of rats as sentient animals and thus (possibly) worthy of more humane treatment when it comes to rodent control. We thus included a dummy

variable taking the value of 1 if respondents agreed or agreed strongly that they had got used to the presence of rodents and were no longer bothered by them, and 0 for other answers as a potential explanatory variable.

The multivariate probit regressions take account of the KRS's two-stage stratified survey design and employ individual probability weights. The initial regressions include the three attitudinal variables discussed above. We then take the analysis further by testing whether the results for the attitudinal variables remain robust to the inclusion of an indicator of rodent presence in the household (whether the respondent reported seeing rats/mice often or just about every day in the house over the past month) and two socio-economic indicators (the household asset index and a dummy variable taking the value of 1 if the respondent had completed high school).

Results

Almost three-quarters (73.4%) of respondents reported that they “really don't care if the rats suffer” and almost a fifth (17.9%) indicated that they were actually “happy if the rats suffer” (indicating a pro-cruel stance). Less than 10% (6.2%) said that they cared and would prefer rats not to suffer (a pro-humane stance).

Table 1 presents the univariate relationship between the pro-humane and pro-cruel dummy variables and our key explanatory attitudinal variables. It shows that almost half of respondents believed that one should be kind to animals and the percentage was much higher (78.8%) amongst those who adopted a pro-humane stance on rodent control, and much lower (30.9%) amongst those who adopted a pro-cruel stance. A third of people in Site C (33.2%) agreed that they worried about rodents being linked to witchcraft. We found no statistically significant relationship between concerns about rats being linked to witchcraft and the pro-humane dummy, but such concern was positively and statistically significantly associated with a pro-cruel stance: over half (52.6%) of those who were pro-cruel worried that rats or mice might be linked to witchcraft. Just over a quarter of respondents (27%) agreed that they had become used to seeing rodents and were no longer bothered by them. The percentage was higher for those with a pro-humane stance (51.4%) and lower for those with a pro-cruel stance (15%).

Table 2 presents the results of multivariate probit analysis on our two dependent variables: pro-humane and pro-cruel stances (reporting marginal effects). The regressions show that believing that people should be kind to animals increased the average marginal probability of adopting a pro-humane stance toward rodent control by 7 percentage points and reduced the average marginal probability of adopting a pro-cruel stance by between 7 and 9 percentage points depending on the controls. Reporting having become used to seeing rodents and no longer bothered by them increased the average marginal probability of adopting a pro-humane stance by 6 percentage points and reduced the average marginal probability of a pro-cruel stance by about 10 percentage points. These results remained robust to the inclusion of indicators of rodent presence in the household, household socio-economic status and respondent education. Note that including these additional controls did not strengthen the model, rather, as indicated by the crossfold root mean squared error estimates, regressions 1 and 3 had better out-of-sample generalizability than regressions 2 and 4 respectively.

Agreeing to being worried that rats/mice might be linked to witchcraft increased the average marginal probability of adopting a pro-cruel stance by 13 to 15 percentage points (depending on the controls). As expected, given the results from **Table 1**, the sign for this variable was positive in the regressions on those with a pro-humane stance, but the coefficients were not statistically significant.

Discussion

Our findings show that values are important in predicting whether respondents adopt pro-cruel or pro-humane approaches to rodent management. Controlling for the other variables in the models, believing that animal welfare is important (that people should be kind to animals) increased the average marginal probability of respondents reporting a pro-humane stance and reduced it for those

Table 2. Exploring the determinants of pro-humane and pro-cruel stances on rodent control.

Dependent variables: Do you care if rats are killed in a cruel way?	Pro-humane 1 = Yes, I care how rats are killed and would prefer them not to suffer, 0 = other		Pro-cruel 1 = No, and actually I am happy if the rats suffer. 0 = Other	
	1	2	3	4
1 = believes animal welfare is important (people should be kind to animals), 0 = neutral or disagrees	0.07*** (0.021)	0.069** (0.023)	-0.071* (0.038)	-0.093** (0.038)
	p = 0.009	p = 0.015	p = 0.090	p = 0.035
1 = Agrees with "I worry that rats or mice might be linked to ukuthakatha (witchcraft)" 0 = neutral or disagrees	-0.026 (0.030)	-0.025 (0.030)	0.159*** (0.037)	0.143*** (0.032)
	p = 0.410	p = 0.426	p = 0.002	p = 0.002
1 = Agrees with "I have got used to seeing rats/mice and they don't bother me much now", 0 = neutral or disagrees	0.056* (0.027)	0.060 (0.034)	-0.098** (0.043)	-0.106** (0.037)
	p = 0.072	p = 0.113	p = 0.048	p = 0.018
1 = Has seen rats/mice "many times" or "just about every day" in the house over the past month, 0 = seen rats/mice never or a few times		0.003 (0.033)		-0.014 (0.054)
		p = 0.929		p = 0.806
Household asset index (weighted by average price and scaled from 0 to 100)		0.0003 (0.0009)		-0.002* (0.001)
		p = 0.725		p = 0.086
1 = completed high-school 0 = did not complete high-school		0.001 (0.040)		0.099** (0.040)
		p = 0.976		p = 0.036
Observations (n)	217	216	217	216
Adjusted Wald Test (null hypothesis is that all the variable coefficients equal zero)	F(3,7) = 4.46 Prob>F = 0.047	F(6,4) = 5.62 Prob>F = 0.058	F(3,7) = 12.94 Prob>F = 0.003	F(6,4) = 10.20 Prob>F = 0.021
Average of 5 Crossfold Root Mean Squared Error (RMSE) estimates	0.270	0.264	0.311	0.388

Average marginal effects reported (dF/dx); standard errors in parentheses; ***p < 0.01, **p < 0.05, *p < 0.1

reporting a pro-cruel stance. This was to be expected given that it is unlikely that someone who does not think that animal welfare is important would be concerned about the welfare of rats. More importantly, we found that concerns about rodents being linked to witchcraft increased the average marginal probability of a pro-cruel stance substantially, irrespective of whether we controlled only for other attitudinal variables, or if we included personal characteristics and rodent presence in the household. This indicates that cultural beliefs about witchcraft are an important and independent driver of pro-cruel attitudes toward rodent control.

Witchcraft beliefs function as explanations of evil (Evans-Pritchard, 1937; Krige, 1947) and in the African context have been linked to spiritual and material insecurity (Ashforth, 2005; Geschiere, 2013) and related feelings of powerlessness. This, coupled with the anxieties associated with witchcraft concerns, led Marwick (1964) to present belief in witchcraft as a "social strain gauge". In South Africa witchcraft has also been linked to concerns that jealous and or malicious people in the community may cause harm to others through engaging supernatural/occult forces (Ashforth, 2005; Ashforth & Natrass, 2005). Concerns about witchcraft are similarly widespread in Khayelitsha, including in Site C, and have been linked to feelings of helplessness (Hampton, 2018). A connection between rats and witchcraft is evident in many cultures either through their assumed contact with witches or through their association with dirt and their assumed unnatural ability to reproduce spontaneously and to emerge out of the diseased earth (Cole, 2011, p. 69–70). In many cultures, including in Africa, rats take the role of witches' familiars or even provide a host for the witch itself (Ajayi, 1974; Eves, 2013; Golooba-Mutebi, 2005; La Fontaine, 1963).

This suggests that feelings of powerlessness, fear and revulsion toward rats are likely to be exacerbated when people also worry that rats might be linked to witchcraft and that this in turn prompts pro-cruel attitudes toward their treatment. The fact that rodent presence in the household had no substantive impact in terms of predicting whether respondents had a pro-cruel or pro-

humane stance suggests that addressing rodent infestation per se is unlikely to have much impact in terms of promoting a more humane stance on rodent control unless this is accompanied by changes in beliefs about animal welfare and the implication of rodents in witchcraft.

Conclusion

The fact that less than half of respondents agreed with the statement “I think that animal welfare is important (people should be kind to animals)” is worrying from an animal welfare point of view. Respondents who said they cared about animal welfare were more likely to support humane methods of rodent control and less likely to indicate that they would prefer rats to suffer when they were killed. Encouraging greater support for the kind treatment of animals, including perhaps through educational interventions at school-level, could thus assist in encouraging more humane treatment of animals including rodents. Campaigns by the NSPCA could also help in this regard, although the NSPCA’s actions to halt the cage-trapping and drowning project in Khayelitsha was not supported locally and may well have undermined its efficacy in promoting values associated with animal welfare. People in Khayelitsha are especially concerned about the impact of rodenticides on other animals and wildlife (Natrass et al., 2019) and by stopping the drowning of rodents – thereby resulting in the City shifting back to poison-based strategies – was not appreciated in the local area.

The fact that almost a fifth of the sample indicated that they would be “happy” if rodents suffered when they died is alarming and speaks to people’s frustration and revulsion toward rodents. The fact that controlling for rodent presence in the household, belief that rats might be linked to witchcraft was strongly predictive of whether people were pro-cruel, indicates that such revulsion toward rodents was complicated by fear of witchcraft (harm by others) and related spiritual insecurity.

Our results suggest that increasing support for humane methods of rodent control requires not merely ameliorating rodent infestation through better sanitation and housing policies but seeking also to influence public attitudes to encourage wider support for animal welfare and to reduce fears about animals such as rats being linked to witchcraft. Educational interventions about rodent ecology may perhaps alleviate some of these concerns, but the extent of belief in witchcraft indicates that the issue may be strongly culturally embedded and thus difficult to address easily through interventions of this kind.

Even so, cultural conceptions can be malleable – as illustrated by differing and changing understandings about witchcraft within the South African HIV epidemic (Ashforth & Natrass, 2005). Engagement and collaborations between medical professionals and traditional healers assisted patients to accept Western medical treatment whilst also receiving treatment and rituals pertaining to the removal of curses and avoidance of witchcraft (Wreford, 2009). In a similar spirit, acknowledging people’s fears about rodents being linked to witchcraft could be mobilized in support of more humane approaches to rodent control, for example by tapping into other cultural notions such as treating the rat respectfully, or by emphasizing that concerns about witchcraft need not play themselves out in terms of hatred and aggression toward rodents, but could be consistent with concern also for animal welfare. Conventional education programs could learn from the HIV epidemic by engaging with, rather than ignoring, cultural dimensions of human attitudes and behavior.

Note

1. We coded one of the “other” responses as a 1 because this respondent said, “Yes and no: yes because I care but on one hand I have to remember and cannot ignore that they’re troublesome and so cannot let them live.”

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