



# Public attitudes to urban foxes in London and the south east



© Caroline McHardy



# Public attitudes to urban foxes in London and the south east

Adele Brand<sup>1</sup> & Marc Baldwin<sup>2</sup>

## ABSTRACT

Humans and foxes have a long history of coexistence and conflict. We assessed the “likeable” and “reproachable” characters of foxes as perceived by two populations of adults and children in England via a questionnaire. Londoners were more averse to neighbourhood foxes than respondents from the south-east, while attitudes of women were more favourable than those of men. Our data add to the pool of information about human perception of urban wildlife and may contribute to the development of conflict-resolution strategies by helping target education.

## INTRODUCTION

The red fox (*Vulpes vulpes*), found throughout the northern hemisphere, is the most widely distributed wild carnivore in the world, with a range covering nearly 70 million km<sup>2</sup> (Macdonald & Reynolds 2008). Their adaptability has led foxes into a long history of conflict with humans (Lewis 2009), which in recent times has extended to urban landscapes.

While the urban fox phenomenon is a relatively new occurrence in much of Europe, largely resulting from the decline of rabies (e.g. Deplazes et al. 2004), in Britain they have been recorded in larger cities such as London since at least the 1930s (Collenette 1937, Teagle 1967). Many urban areas are colonized in two stages: foxes establish themselves on the fringes before spreading into town centres (Harris & Baker 1986), although in some cases they simply do not move on when new estates are constructed (Hemmington 1997).

Foxes have a strikingly polarising effect on people (pers obs) and their increasing proximity to humans presents opportunities for conflict. While concerns about urban foxes have received press coverage since at least the 1970s (e.g. Haddon, 1973), the attack on twins Isabella and Lola Koupparis in London in 2010 led to fresh debate

about urban fox management (Cassidy & Mills 2012). Some called for calm and pointed to this being an isolated incident (Dimmer 2010), while others wrote that foxes should be “cleared from our streets” (Aslet 2010). In the short term at least, public trust of wildlife seemed to decrease (Gray 2010). Nonetheless, many people in Britain feed foxes, either intentionally or unintentionally (pers obs). With population growth and urbanisation projected to add 2.5 billion people to the world’s urban population by 2050 (United Nations 2014), there is a need to quantify and mitigate human-wildlife conflict. This is particularly the case given the costs and practicalities associated with culling foxes in urban areas (e.g. Baldwin 2018).

We obtained a snapshot of public opinion of foxes among adults and children from London and south-east England using a questionnaire, building on earlier work by Harris (1981) and Macdonald (1985). Our aim was to establish whether aspects that people like and dislike about having foxes in their neighbourhoods can be categorised, with a view to understanding public concerns and developing a “coexistence toolkit”.

<sup>1</sup>60b Nasmith Road, Norwich, NR4 7BJ ([adelebrand@hotmail.co.uk](mailto:adelebrand@hotmail.co.uk))

<sup>2</sup>35 Albany Road, Southampton, SO15 3EF ([baldwin\\_marc@hotmail.com](mailto:baldwin_marc@hotmail.com))

**Key words:** urban fox; wildlife perception; wildlife conflict; red fox; wildlife survey questionnaire.

Full citation: Brand, A. & Baldwin, M. (2020) Public attitudes to urban foxes in London and the south east. Mammal Communications 6: 34 - 41, London.

## METHODS

We commissioned Onepoll Ltd to survey 1,100 members of the public between 12-22 October 2015. The respondents were members of Onepoll's research omnibus panel and comprised 1,000 adults and 100 children split equally between London and south-east England. The age, gender and county / borough of each respondent was also noted.

Each participant was first asked to confirm whether foxes were present in their neighbourhood. Participants who responded "yes" were asked:

1. *Do you like having foxes in your neighbourhood?*  
(Likert scale: rank 1-5; 1 strongly disagree, 2 disagree, 3 undecided, 4 agree and 5 strongly agree)

They were then asked two qualitative, open-ended questions:

2. *Is there anything you specifically like about having foxes locally? (If so, please describe.)*
3. *Is there anything you specifically dislike about having foxes locally? (If so, please describe.)*

This approach enabled us to test for correlations between the strength of opinion about foxes and perceived positive and negative characteristics. The resulting data were subjected to an ordinal logistic regression in SAS 9.4 to assess whether there was a relationship between "Likeability" and respondent age, sex or location. The  $H_0$  was that location, age, gender and sex did not affect the respondent's opinion about foxes. Likeability models (Likeability = Intercept + Gender + Age range + Area + error) were run using ordinal and binary dataset variants for robustness (see Appendix).

Freeform responses were reviewed for key words according to whether foxes were liked (Table 2) or disliked (Table 3). Using these key words, frequencies for 'Like' and 'Dislike' responses were generated for all responses and for London and south-east England separately.

**Table 1. Table showing the boroughs and counties from which responses were received. Responses were received from all 33 London Boroughs (total 522) and 9 South East counties (total 511).**

<b>Borough/County</b>	<b>Region</b>	<b>No. Responses</b>			
Barking and Dagenham	London	18	Hounslow	London	14
Barnet	London	18	Isle of Wight	South	13
Berkshire	South	29		East	
Bexley	London	25	Islington	London	9
Brent	London	13	Kensington and Chelsea	London	6
Bromley	London	21	Kent	South	52
Buckinghamshire	South	31		East	
	East		Kingston upon Thames	London	17
Camden	London	17	Lambeth	London	19
City of London	London	21	Lewisham	London	16
City of Westminster	London	6	Merton	London	15
Croydon	London	28	Newham	London	11
Ealing	London	16	Oxfordshire	South	55
East Sussex	South	63		East	
	East		Redbridge	London	22
Enfield	London	27	Richmond upon Thames	London	8
Greenwich	London	5	Southwark	London	14
Hackney	London	7	Surrey	South	15
Hammersmith and Fulham	London	13		East	
Hampshire	South	184	Sutton	London	26
	East		Tower Hamlets	London	4
Haringey	London	11	Waltham Forest	London	20
Harrow	London	11	Wandsworth	London	19
Havering	London	24	West Sussex	South	69
Hillingdon	London	21		East	
			<b>Total</b>		<b>1,033</b>



## RESULTS

Responses were received from all 33 London boroughs and nine south-eastern counties (Table 1).

Respondents who indicated that they had no foxes in their local area were removed from the dataset, resulting in 908 responses for analysis. The ordinal logistic regression used Likeability as the dependent variable (Likert scale), and independent variables of gender, age range and area. Two statistically significant trends were observed.

Firstly, Londoners were significantly more likely to dislike foxes than those in the south-east ( $p < 0.0001$ , Figure 1). Secondly, women were more likely than men to view

foxes favourably ( $p=0.0232$ ). There was no significant difference between age groups.

The like/dislike responses from participants were categorised (Tables 2 and 3) and used to generate Figures 2 and 3. Figure 2 illustrates how reasons for liking foxes may tend towards philosophy (a connection with wildlife/nature), while those for disliking foxes can often be quantified more easily (noise, faeces, bin raiding). Figure 3 shows how respondents from London may be less tolerant towards certain elements of fox behaviour than those in the South East.

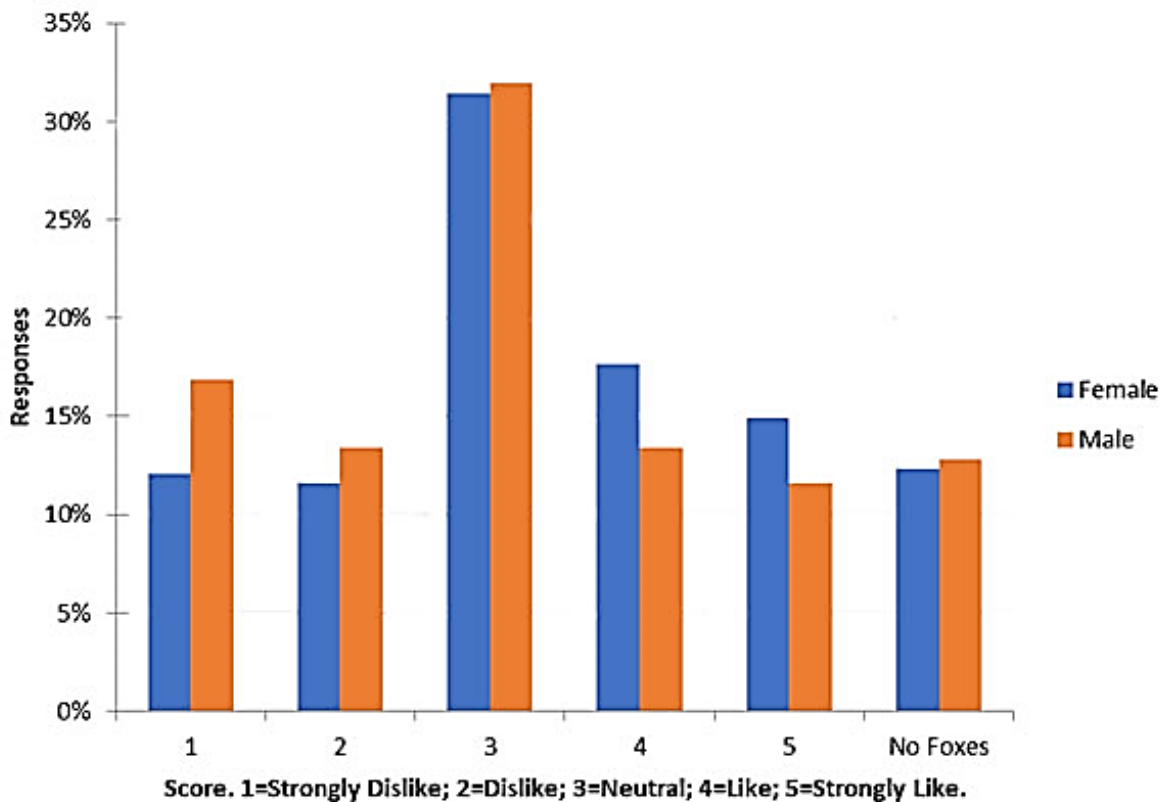
**Table 2. Reasons provided for liking the presence of foxes in respondent's neighbourhood.**

	Description	Example key words
Ecological value	Predation on perceived nuisance species or helping maintain ecological balance	Control rats, slugs, pigeons "Helps to regulate the food chain"
Aesthetic value	Positive comments on the fox's physical appearance or general perceived character	Pretty Beautiful Good looking Friendly Cute Adorable Attractive "I think they're sweet"
Intrinsic value	Value outside of any benefit to humans	"They have as much right to be here as we do" "They're a part of nature" "There is a need to allow things to flourish because we have taken so much away"
Enhance area	Having foxes in the neighbourhood makes it a better place	"having them around adds a spot of colour and interest to the local environment"
Contact with nature / countryside	Foxes provide a sense of connecting with rural Britain and / or wild nature	Countryside Nature around us "It feels like having a bit of countryside in suburbia" "It's nice to feel that nature is still around us"
Wildlife watching	Opportunities for watching, photographing or feeding	"It's nice to see them" "Chance to see wildlife up closer" "The experience of feeding them"

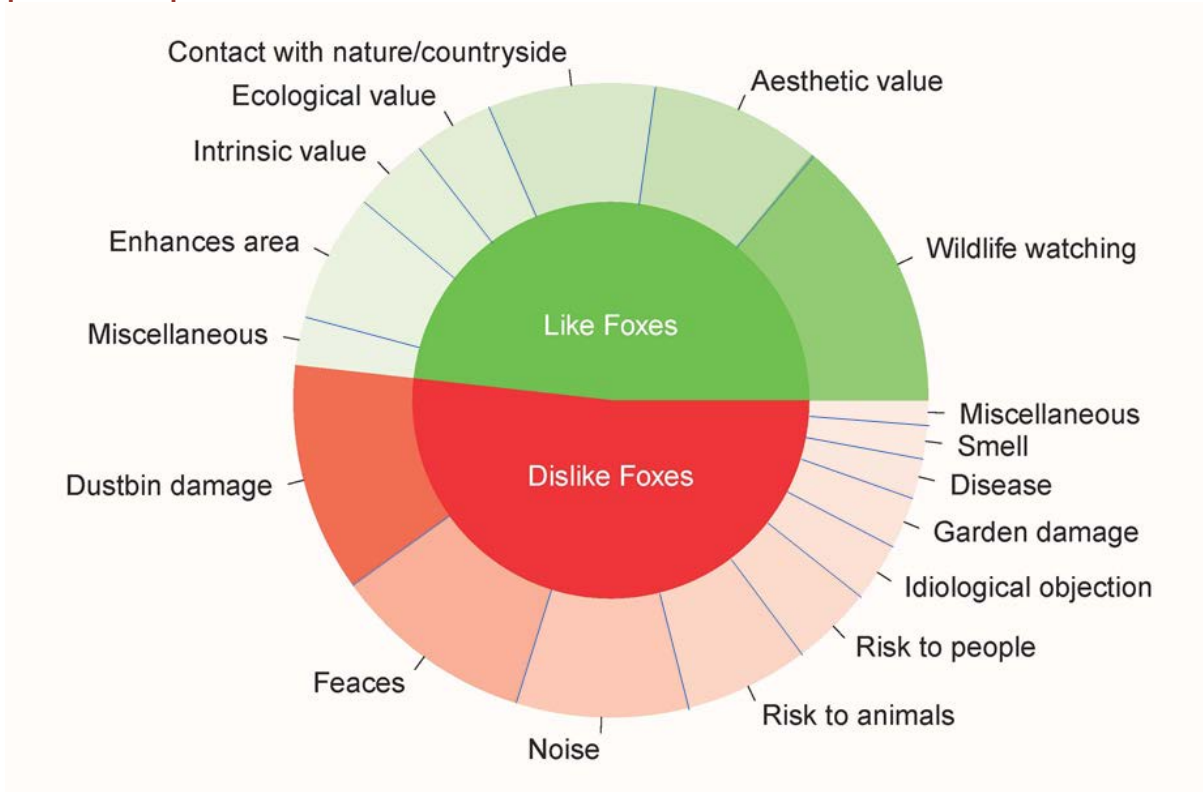
**Table 3. Reasons provided for disliking the presence of foxes in respondent’s neighbourhood.**

	Description	Example key words
Risk to people	Risk of physical attack on a person	“They can be dangerous to kids” “Children cannot play outside” “killing baby”
Risk to animals	Risk of physical attacks on pets, livestock and other wildlife	“My cats are at risk”
Ideological objection	A belief that foxes do not belong in the respondent’s neighbourhood, or an unspecified general objection	“They are vermin” “They don’t have many advantages in an urban area” “They invade my personal space when they enter my garden” “They have no purpose” “They don’t seem to be afraid of me”
Faeces		Mess (except where this clearly refers to dustbins)
Noise		
Smell		
Disease	Foxes suffer from disease or are perceived to risk exposing people or pets to disease	
Garden damage	To the lawn, outdoor toys, flowerbeds etc.	
Dustbin damage	Including bringing rubbish into gardens	“Scavengers who make a mess”

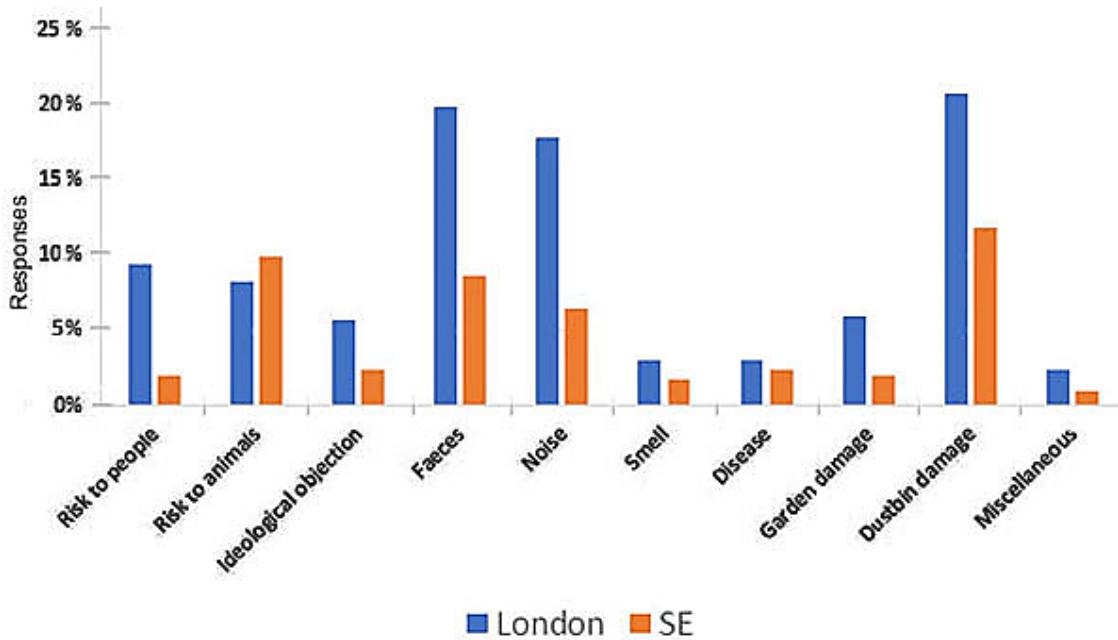
**Figure 1. Sex-based frequency distribution of adult respondents to the question of whether foxes were “liked” or “disliked”. Where respondents considered foxes absent from their neighbourhood this was recorded as “No Foxes”.**



**Figure 2. Frequency distribution pie chart showing reasons given for liking or disliking foxes. Darker shades represent greater proportion of responses.**



**Figure 3 Relative frequencies of opinion responses from adults (n: 417 in SE, 459 in London) for disliking foxes according to region.**



## DISCUSSION

While a majority of respondents in both survey areas claimed to be positively or neutrally disposed towards foxes, the proportion expressing dislike was higher in London than the south-east. This is not an unexpected result. Londoners are among the group most detached from nature in the UK and many struggle to even identify iconic taxa such as kingfishers (Connor 2016). If, as Juniper (2013) suggests, society's inclination to protect nature is associated with the value that humans assign to it, detachment is likely to foster intolerance, particularly of controversial species such as foxes.

Fear of foxes was 2.8 times higher in London, while "ideological" objections (e.g. "foxes do not belong in my area") were 1.4 times higher. Ten people from the "ideological objection pool" expressed concerns about foxes becoming "too bold", e.g. unafraid of humans or visible in daylight. It is interesting to note that other urban mammals, such as red deer *Cervus elaphus* in Richmond Park, are not expected to be nocturnal, and yet a perception that foxes are "cheeky" or "brazen" if not strictly active by night persists.

Approximately half of the reasons given for disliking foxes cited tangible behaviour such as raiding bins, fouling lawns or damaging gardens (Figure 2), and Londoners were again more likely to reference such activities (Figure 3). It is possible, however, that respondents who object to foxes on ideological grounds may justify their attitudes by referencing such complaints, even if they seldom have any negative experiences. Conversely, householders who have suffered significant damage may still be very tolerant of foxes if their core values encourage coexistence (pers ob.) It is therefore uncertain whether simply limiting damage will improve coexistence; globally, efforts to improve attitudes towards canids by reducing

financial loss have had mixed results (e.g. Agarawala *et al.*, 2010). Nevertheless, most problematic fox behaviour can be practicably addressed, e.g. by repellents or fox-proof rabbit hutches. In addition, where over-feeding of foxes is increasing population density by reducing territory size (Baker *et al.* 2000), education of householders can assist.

Both London and the south-east returned responses that foxes offer wildlife watching and photography opportunities, were "beautiful", or were educational for children. A higher proportion of Londoners stated that they provide positive contact with nature and the countryside, suggesting that greater engagement with foxes may help urban areas reconnect with wildlife. Women were significantly more likely to view foxes positively than men, a result reflected in the authors' experience. Consumer surveys often report that women are more inclusive than men (Marty 2019), implying increased compassion, and although studies have failed to demonstrate this empirically, there is evidence that females may express compassion differently to males (Mercadillo *et al.* 2011).

Overall, these data provide a window into the way people view an important wild carnivore that appears to be increasingly colonising British cities (Scott *et al.* 2018). While the dataset is small and geographically restricted, it nonetheless indicates important areas for consideration by those wishing to mitigate human-fox conflict and highlights areas for further study. In particular, the interaction between ideological objections and those resulting from genuine practical concerns needs further investigation, as does how a person's perception of the intrinsic value of foxes and other "local" nature is formed.

## ACKNOWLEDGEMENTS

This survey was funded entirely by the authors. The authors wish to extend their thanks to Jesse Thissen for help with statistical analysis and to Dr Stephanie Powley, Ali Merchant and John Gurnell for feedback on an early draft of this manuscript.

## REFERENCES

- Alwin, D.F., Cohen, R.L. & Newcomb, T.M. (1991). *Political Attitudes Over the Life Span: The Bennington Women After Fifty Years*. University of Wisconsin Press, Wisconsin.
- Aslet, C. (2010). It's time to clear foxes from our streets. *The Daily Telegraph*, 8<sup>th</sup> June, p 18.
- Baker, P.J., Funk, S.M., Harris, S. & White, P.C.L. (2000). Flexible spatial organization of urban foxes, *Vulpes vulpes*, before and during an outbreak of sarcoptic mange. *Animal Behaviour* 59: 127-146.
- Baker, P., Newman, T. & Harris, S. (2001). Bristol's Foxes - 40 years of change. *British Wildlife* 12: 411-417.
- Baldwin, M. (2018). Should we be culling urban foxes? Wildlife Online: <https://www.wildlifeonline.me.uk/questions/answer/should-we-be-culling-urban-foxes> [Accessed 25th March 2019].
- Beckford, T. (1781). *Thoughts on hunting*. Hodder and Stoughton, New York.
- Cassidy, A. & Mills, B. (2012). "Fox Tots Attack Shock": Urban foxes, mass media and boundary-breaching. *Environmental Communications* 6: 494-511.
- Collenette, C.L. (1937). *A history of Richmond Park: with an account of its birds and animals*. Sidgwick & Jackson, London.
- Connor, L. (2016). Londoners are the most detached from nature in the UK, survey reveals. *The Evening Standard*. <https://www.standard.co.uk/lifestyle/london-life/londoners-are-the-most-detached-from-nature-in-the-uk-survey-reveals-a3296116.html> [Accessed 17th March 2019]
- Deplazes P., Hegglin, D., Gloor, S., & Romig, T. (2004). Wilderness in the city: the urbanization of *Echinococcus multilocularis*. *Trends in Parasitology* 20: 77-84.
- Dimmer, S. (2010). Fox expert warns against culling. *Coventry Evening Telegraph*, 9<sup>th</sup> June, p 2.
- Gamborg, C., Palmer, C. & Sandoe, P. (2012). Ethics of Wildlife Management and Conservation: What Should We Try to Protect? *Nature Education Knowledge*. 3: 8.

- Grey, L. (2010). Fox attack leaves 1 in 5 afraid of wildlife. *The Daily Telegraph*, 2<sup>nd</sup> September, p 9.
- Haddon, C. (1973). Vulpicide in Orpington. *The Sunday Times*, 17th June, p 15.
- Harris, S. (1981). The food of suburban foxes (*Vulpes vulpes*), with special reference to London. *Mammal Review* 11: 151-168.
- Harris, S. & Baker, P. (1986). *Urban Foxes*. Whittet Books, Essex.
- Hemmington, M. (1997). *Foxwatching: In the shadow of the fox*. Whittet Books, Essex.
- Hosaka, T., Sugimoto, K. & Numata, S. (2017). Effects of childhood experience with nature on tolerance of urban residents toward hornets and wild boars in Japan. *PLOS ONE* 12: e0175243.
- Juniper, T. (2013). *What has nature ever done for us?* Profile Books, London.
- Lewis, B. (2009). *Hunting in Britain from the Ice Age to the present*. The History Press, Gloucestershire.
- Macdonald, D.W. (1985). Fox about town. *BBC Wildlife*. 3: 479-482.
- Macdonald, D. W. & Reynolds, J. C. (2008). *Vulpes vulpes*. IUCN Red List of Threatened Species. Version 2008. International Union for Conservation of Nature. [Accessed 3 February 2019].
- Marty, A. (2019). Women are markedly more tolerant than men. SACS Consulting: <https://sacsconsult.com.au/women-are-markedly-less-bigoted-than-men/> [Accessed 24th November 2019]
- Mercadillo, R. E., Diaz, J. L., Pasaye, E. H., Barrios, F. A. (2011). Perception of suffering and compassion experience: Brain gender disparities. *Brain and Cognition*. 76: 5-14.
- Scott, D.M., Baker, R., Charman, N., Karlsson, H., Yarnell, R.W., Mill, A.C., Smith, G.C. & Tolhurst, B.A. (2018). A citizen science based survey method for estimating the density of urban carnivores. *PLOS ONE*. 13: e0197445.
- Stone, J. (2016). Fox hunting opposition hits all-time high, latest poll finds. *The Independent*. <https://www.independent.co.uk/news/uk/politics/fox-hunting-boxing-day-poll-opposition-all-time-high-theresa-may-hunting-ban-act-vote-a7495336.html> [Accessed 14th February 2019]
- Teagle, W.G. (1967). The fox in the London suburbs. *The London Naturalist*. 46: 44-68.
- Truett, K.R. (1993). Age differences in conservatism. *Personal Individual Differences* 14: 405-411.
- United Nations, Department of Economic and Social Affairs, Population Division (2014). *World Urbanization Prospects: The 2014 Revision, Highlights* (ST/ESA/SER.A/352).

