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Roaming Companion Cats as Potential Causes of Conflict and Controversy: A Representative Questionnaire Study of the Danish Public¹

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Abstract

Cats have grown in popularity as companion animals, but there are also people who strongly dislike them. Companion cats allowed to roam freely outdoors are seen by some as a nuisance. This paper, drawing on research conducted in Denmark, aims to quantify potentially conflicting attitudes to cats among the public that may feed into cat-related conflicts and controversies. Questionnaire data were collected from a representative sample of the Danish population ($n = 2,003$), where 21% ($n = 415$) owned cats and 79% ($n = 1,588$) did not. In all, 65% of respondents confirmed that they liked cats, 21% reported that they did not, and 14% were undecided. The main reasons for disliking cats concerned “behavior,” not hazards such as the spread of diseases and predation. Of the 21% of the surveyed Danes who reported that they currently had a cat in the household, 72% allowed their cat to roam outdoors. Sixty percent of the respondents did not perceive this as a problem. However, the potential for conflict was demonstrated by the fact that 27% of respondents regarded outdoor roaming as problematic. Of these, about a quarter saw free-roaming cats as a big problem and as a cause of strife between neighbors. Comparatively fewer of those who owned cats saw their animals as a cause of problems. Thus, only 12% of those owning outdoor cats thought that problems were

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caused when their cats defecated in a neighbor's garden, which compares with the 17% of the total population who are bothered by other people's cats defecating in their gardens. Our data show that while the majority of Danes believe cats should be allowed to roam in public spaces, a significant minority strongly dislikes cats and would prefer restrictions on roaming.

Keywords: attitudes, cats, public, human–animal interaction, questionnaire survey, roaming

Domestic cats may have lived with humans for as long as 10,000 years (Driscoll, Clutton-Brock, Kitchener, & O'Brien, 2009). They were common in Egypt around 3,700 years ago (Driscoll et al., 2009). From there the practice of living with cats seems to have spread across Europe, and later European emigrants introduced it to North America and Australasia. So, it is fair to say that cats have been kept by humans in the Western world since prehistoric times.

Cats were used primarily to control rodent pests, but with their proximity came to be valued as companion animals. In ancient Egypt, the cat was regarded as a divine creature, but since at least medieval times, its significance has become more complex and controversial. During the Middle Ages in Western Europe, cats were often portrayed as the personification of the devil, and this served as a justification for their frequent persecution (Nikolajeva, 2009). At this time, cats seem to have been treated as “a sort of universal scapegoat; something to blame and punish for all of life's numerous perils and hardships” (Serpell, 2000, p. 12).

With the secularization of Western countries, cats came to be considered less alien. Thus, since at least the 19th century, cats have become increasingly popular in the West as companion animals. Many cats kept as companions were outbred, so-called domestic shorthair cats, but in parallel with the emergence of organized dog breeding in the nineteenth century, the breeding of purebred cats became extremely popular in England and other Western countries. However, interest in this “cat fancying” declined, and the majority of cat owners, unlike dog owners, continued to keep domestic shorthair cats that were neither purebred nor pedigree, nor the result of planned breeding (Hartwell, 2003–2015).

We possess limited evidence of how popular it was to keep cats as companions in the past, but for the last 50 years or so we have documentation from several Western countries showing that cats have become increasingly popular as companions. According to one set of statistics from the UK, there was more than a doubling of the relative number of companion cats, from less than 8 per 100 human inhabitants to over 16, between 1960 and 2004 (Sandøe, Corr, & Palmer, 2016, p. 18). Over this period, cats for a while overtook dogs as the most popular companion animal in the UK. It is likely that a similar development has taken place in other Western countries, driven predominantly by socio-economic and demographic factors.

During the same period, there have been significant changes in the way cats are typically kept and cared for. First, many cats today are confined indoors; this happens more commonly in the US than it does in Europe (Rochlitz, 2005; Shawnee, 2013). A second shift is that the majority of domestic

cats are now neutered (Chu, Anderson, & Rieser, 2009). These changes mean that although companion cats have grown in number, they may be less likely to cause problems in the community, because many of them never leave the home, and those that are let out or go astray are often unable to reproduce.

Despite this, companion cats are increasingly giving rise to polarized debates and controversies that have recently been described as “Cat Wars” (Marra & Santella, 2016). Broadly speaking, the people involved in these disputes fall into two groups: on the one hand, some people believe that cats should be restricted in public spaces—that companion cats should be confined indoors or have restricted outdoor access; on the other hand, there are people who believe that companion cats should be allowed to roam freely in public spaces. However, the arguments that emanate from these two positions relate to a wide range of issues, including the protection of public health, concerns about wildlife and livestock, nuisance complaints, and cat welfare.

People who favor the confinement of companion cats represent a diverse group with several rather different concerns. Nature conservationists, bird enthusiasts, hunters, and scientists in the field of biodiversity are concerned about the threats that cats (companion, feral, and stray) may pose to local wildlife species (Loss, Will, & Marra, 2013; Van Heezik, Smyth, Adams, & Gordon, 2010; Williams, 2009). Some cat owners may also confine their cats to the home as a result of their concerns about native wildlife (Toukhsati, Young, Bennett, & Coleman, 2012). Some people are concerned about human and veterinary health. They worry that cats may transmit diseases to humans and other animals (Barrows, 2004; Longcore, Rich, & Sullivan, 2009). Finally, some people, typically representing animal protection NGOs and cat owners, are concerned about the safety and health of the companion cats themselves (Bernstein, 2007; Rochlitz, 2004). They argue that roaming may lead to injuries or death caused by exposure to infectious diseases, traffic, cat fighting, and attacks by dogs and by predators such as raptors and coyotes.

However, cat confinement creates divisions among those concerned about cat welfare, and differing views are taken on what responsible ownership requires and on what counts as welfare where companion cats are concerned. One idea, as mentioned above, is to restrain companion cats from roaming freely so as to avoid potential threats to the environment. Another is to allow companion cats some outdoor access, because that will allow them to express their natural behaviors (Van de Kuyt, 2004) and avoid the increased risk of behavior problems that arises when they are confined indoors (Amat, de la Torre, Fatjó, Mariotti, Van Wijk, & Manteca, 2009; Sandøe et al., 2017).

Wald, Jacobsen, and Levy (2013) investigated differences in stakeholder attitudes to outdoor cats in the US. When they asked “bird conservationists,” “TNR supporters,” and the general public about the impacts of roaming cats on people, wildlife, and the environment, they found that the attitudes of members of the general public were in general less extreme than those of the other two stakeholder groups. A few other studies have surveyed the views of the general public. For example, in Victoria, Australia, Toukhsati and colleagues (2012) explored attitudes to containment in cat owner and non-owner groups ($n = 424$) and examined cat containment practices among owners.

They found general support for cat confinement among both cat owners and non-owners. The highest level of support was found among the non-owners and was based mainly on a wish to protect wildlife. Another survey, looking at attitudes of the general public in Western Australia ($n = 1261$), found significant differences between cat owners and non-owners, both in their acceptance of the need for cat legislation and in their views on the impact of cats on wildlife: cat owners were less likely to favor restrictions and were less concerned about the wildlife impacts of roaming cats than non-owners (Grayson, Calver, & Styles, 2002).

In the US state of Georgia, the results of an internet survey ($n = 298$) of randomly selected Athens-Clarke County households indicated that respondents had mixed perceptions of cats. Thus, “general public preferences were not clearly in favor of cat advocacy or wildlife conservation management preferences” (Loyd & Hernandez, 2012, p. 349). Fifty percent of those surveyed answered that pet cats should be allowed to roam outdoors, and 45% of the cat-owning respondents (51% of the sample) allowed their cats to roam freely outdoors. However, 50% of respondents agreed that feral cats are a “nuisance,” and 65% of all respondents agreed that more effective management of feral cats is needed. Another US study, presenting the results of a representative telephone survey of Ohio residents (aged 18+ years) ($n = 703$), found that 30.9% of all participants owned one or more cats (Lord, 2008). Around half (48.7%) of the participants who answered the question (546) expressed positive or sympathetic feelings toward free-roaming cats, 32.4% expressed neutral feelings, 29.1% expressed negative feelings, and 14.3% expressed negative or angry feelings toward the situation or owners (multiple responses were allowed). Finally, a survey of randomly selected households in Italy ($n = 397$) showed that the majority of respondents (90%) believed that free-roaming dogs and cats were a problem even though a significantly smaller proportion of the respondents actually saw free-roaming cats (61%) or dogs (76%) in their area (Slater et al., 2008). The reasons reported for the negative attitude focused mainly on personal safety, followed by animal welfare, public health, and environmental sanitation.

In this paper, we present the results of a survey of the general public in Denmark. This study differs from those mentioned above in that it focuses on a northern European country. Compared to, for example, the USA, cats are much less frequently kept as pets in Denmark, as approximately 15–20% of Danish families have a cat (Danmarks Statistik, 2000; Sandøe et al., 2017). Cats in Denmark, unlike those in Australia and North America, have been present in the country for around 1,500 years (Nationalmuseet, n.d.). As a consequence, there has also been a high degree of adaptation of local wildlife to cats (Møller & Ibáñez Álamo, 2012)—an adaptation that may have started even earlier due to predation by European forest cats.

The study also differs from most of the other studies in that, using a large sample of the general public ($n = 2,003$), it investigates the relationship between cat ownership, socio-demographic factors, and attitudes to cats. In an earlier publication, where other results from this study were reported, it was found that approximately 21% of Danes live in households with a cat, 13% have previously had a cat in the household, and the remaining 66% have never lived with a cat (Sandøe et al., 2017). In this study we aim to answer the following three research questions: 1) What are the

demographic characteristics of cat owners, and how are cats acquired and kept? 2) What are the overall attitudes to cats among Danes, and why do some people dislike cats? 3) What opinions do Danes hold about the practice of allowing companion cats to roam, and what are seen as potential problems with the practice?

Methods

Survey Design

The data used in this study are from a questionnaire survey of Danes ($n = 2,003$) conducted in October 2015. They are based on a probability sampling of respondents in a pre-recruited panel consisting of Danes (15 years or older) that is hosted by a Danish survey company (Norstat). The study was based on a mixed mode set-up where the questionnaire was responded to either on the internet, where respondents were invited and received a link via e-mail, or by telephone interviews, where an interviewer called the respondent and invited him/her to participate in the survey. Both groups of respondents gave their consent when they were invited to participate in the survey. Respondents were completely anonymous to the researchers involved in the design of the study and the subsequent data analysis.

When this study was planned, only biomedical research was covered by ethics committees in Denmark and the University of Copenhagen did not have Institutional Review Boards to address participant protection issues within the social sciences. Further details on response rate, recruitment, sampling, and response mode have been provided elsewhere (Sandøe et al., 2017). The questionnaire consisted of 45 questions. All participants were asked a number of demographic questions together with questions which investigated their general attitude to cats and to cats being allowed to roam. Respondents were also asked whether they kept a cat in the house, and additional questions were put to owners relating to their cats.

Statistical Analysis

We began by identifying the socio-demographic predictors of cat ownership. A logistic regression was run with cat ownership as a dependent variable (dependent variable: 0 = no cat in the household; 1 = cat in the household). Variables indicating respondents' gender, age, household type, household income, educational level, residential area, and housing type were inputted as predictors.

Following this analysis, we focused on the cat owners ($n = 415$). Our aim here was to establish frequencies of cat acquisition, how much was paid for the cat, whether the cat was an indoor or outdoor cat, and how many of the cats were purebred, domestic shorthair, or mixed breed. Danes' general attitudes to cats, as well as reasons for not liking them (among those who report this) were ascertained. Finally, we focused on roaming cats. Our aim was to investigate the extent to which roaming cats are seen as a problem, differentiating between cat owners, previous cat owners, and Danes who have never owned a cat. Reasons for perceiving roaming cats as a problem were identified as were aspects of roaming which lead to problems with other people for cat owners who allow their cats to roam.

To account for over- and under-representation, all analyses (except the logistic regression) were weighted. The weight variable ensured representativeness on gender \times age \times region relative to official statistics.

Results

Demographic Characteristics, Acquisition, and Management

The results from logit regression showed that a number of socio-demographic factors affect the likelihood that householders will own a cat. The regression analysis is reported in detail in Table 1, while the prevalence of cat ownership for different values of the socio-demographic factors that were identified as statistically significant (at the 0.05 level) in this model are laid out in Table 2.

The most important factors explaining cat ownership in Denmark were population density in the residential area and type of housing. Thus, more people living in a village or the countryside (37%) than people living in large cities (> 100,000 inhabitants (13%)) had cats. People living in suburbs close to a large city (18%), medium-size cities (20%), and small cities (25%) fell logically between these two extremes. Regarding housing, only 13% of those living in a house/flat without a garden had a cat, and the corresponding figure for those who lived on a farm or a house in the countryside is 52%.

Another important factor affecting the likelihood of living with a cat is whether there were children in the home. Approximately 30% of the adults living with children also lived with a cat. For couples without children, the figure was 20%, and for people living alone it was 13%. Age was also an important factor. The likelihood of having a cat was lowest in the youngest (15–29 y) and oldest age brackets (60 y or more). It was highest at 30–59 years of age and this coincided with the life phase at which many households were co-occupied by children.

We found no statistically significant association between income and cat ownership. Where education was concerned, the proportion of those living with a cat was highest among low-educated Danes, that is, those with a basic (mandatory) education (26%), and lowest among those with tertiary education (14%).

Most owned cats (54%) were acquired from private homes in which the resident cat had had a litter (Figure 1). The second most common way a cat was acquired was through a shelter (15%). The third most common means of acquisition was that the cat itself chose to move in (11%). Only 8% of cats were bought from a breeder.

The way cats were acquired is reflected in how much people paid for them. The majority of cat owners did not pay anything for their cat, and only 15% paid a significant amount of money (140 € or more) (Figure 2).

These results correspond with the statistics about the breeding of the cats kept, where only 15% had a purebred cat, the majority (62%) owned a domestic shorthair cat, and 21% had a mixed breed cat. Cat owners living in a large city (> 100,000 inhabitants) were more likely to keep a purebred cat (21%) than cat owners in the countryside (8.6%).

The majority of owned cats in Denmark (72%) were allowed to roam (Figure 3). Some of these (38%) were indoor cats with opportunities to be let out, 25% were indoor cats with outdoor access via a cat flap, and 9% were kept as outdoor or farm cats and were rarely or never inside. The proportion of cats allowed to roam outdoors decreased as population density rose: 95% of cat owners who lived in the countryside provided outdoor access to their cats, while only 60% of cat owners living in a large city did so.

In summary, the kind of person most likely to own a cat in Denmark was someone (or a couple) with children living at home, in a house or on a farm either in a small town or in the countryside. Most Danish cats were domestic shorthairs or of mixed breed and had either been given away or sold at a very low price to their owners. Most of these cats had outdoor access. Only a small proportion of Danish cats were purebreds.

General Attitudes to Cats

As mentioned in the introduction, two-thirds of Danes have never owned a cat. However, this does not mean that two-thirds of Danes do not like cats. It is rather the other way around: nearly two-thirds (64%) of respondents described themselves as people who like cats. Most of the remaining respondents (21%) said they did not like cats, and 14% neither confirmed nor denied that they liked cats.

Figure 4 shows that more than one in five of the respondents who said they disliked cats gave several reasons for this. The three most common reasons are primarily aesthetic in nature: “I don’t like their behavior” (59%), “They are dirty/the cat tray smells” (39%), and “They are too independent and impossible to train” (39%). Among those who did not like cats, only 22% agreed that “They are killing small birds and other animals,” and only 10% agreed that “They are spreading diseases.”

Attitudes to Roaming

Danish attitudes to the practice of allowing owned cats to roam broadly aligned with Danes’ general attitudes to cats. Sixty percent of respondents did not see roaming cats as a problem, 27% perceived them as a problem, and 13% had no opinion on the issue. As shown in Figure 5, people who had never owned a cat (35%) were more inclined to perceive roaming cats as a problem than those who owned a cat (10%) or had previously done so (15%).

The proportion of people not owning cats who saw roaming as a problem increased as population density decreased: 24% of those who lived in a large city (>100,000 inhabitants) saw outdoor cats as a problem, while 48% of those who lived in a small city (< 10,000 inhabitants) and 45% of those

who lived in a village or the countryside saw it as a problem. This is probably explained by a parallel likelihood of being exposed to roaming cats in one's neighborhood. Thus, roaming cats were very seldom encountered in large cities, where only 8% of the households kept cats in this way, but they were quite commonly seen in rural areas, where 35% of the households allowed the cat out. When those who saw roaming cats as a problem were asked about the nature of the problem, the most widespread reason given was feline defecation in their gardens (63%). A majority of those who were asked to clarify the problem (57%) also thought that cat owners should keep their cat indoors (Figure 6). Still, even among those who saw roaming cats as a problem, only 25% saw this as a big problem, and only 28% saw it as an issue that would give rise to neighbor disputes.

The impression that roaming cats only cause a moderate amount of disagreement between neighbors was confirmed when cat owners who allowed their cats to roam were asked whether issues relating to their roaming cats gave rise to problems with neighbors. A little more than 50% stated "No, none of these problems" when presented with a list of potential problems with roaming cats (Figure 7). The biggest problem that the owners of roaming cats were aware of in relation to people living in the neighborhood was that of cats catching birds and other animals, which was seen as a problem by 20% of owners of roaming cats. Other perceived problems were that cats lie on and leave footprints on cars, strollers, and other property (13%), defecate in other people's gardens (12%), and fight with other cats (11%).

Discussion

Our first research question investigated the demographic characteristics of cat owners and asked how cats are acquired and kept. As in other studies, we found that people who live in the countryside are more inclined to keep cats (Carvelli, Iacoponi, & Scaramozzino, 2016; Murray, Browne, Roberts, Whitmarsh, & Gruffydd-Jones, 2010), as are people with children living at home (Westgarth et al., 2010). Our study also found an association between educational levels and cat ownership, as fewer people with university degrees owned cats. Based on data from seven European countries, a low educational level has previously been associated with a greater probability to own cats (or dogs) (Eller et al., 2008), but the reverse relationship between cat ownership and high educational background has also been identified in studies conducted in the UK (Murray et al., 2010) and in US (Leaderer et al., 2002). The reasons for these divergent findings are not clear; perhaps other socio-demographic factors may be the driving force behind this. The present study is the first that identifies the link between education and cat keeping after controlling for a comprehensive range of possible socio-demographic confounding variables (such as residential area [the urban-rural divide], income, housing, and household type). Therefore, the speculation that these other factors are in play can be safely ruled out in a Danish setting. Perhaps available time could be an explanation, as higher educational levels could lead to a higher number of working hours. Still, as the difference is observed in many countries, the use and understanding of family cats (and dogs) appears to be educationally patterned. In other words, some sort of cultural differentiation that is linked to educational qualifications emerges in many countries. The exact way this differentiation operates is worthy of further study.

Danish companion cats are mostly domestic shorthair cats and are generally acquired at a low price or no cost. Previous research has also found that they are often not very well cared for in terms of veterinary treatments, and that the vast majority of cat owners do not have health insurance for their cats, partly because they do not find it necessary (Sandøe, Bjørnvad, Forkman, Nørspang, & Lund, 2016). Most Danish companion cats (72%) are allowed to roam, which means that as many as 11% of the cats end up moving into a new home (Sandøe, Bjørnvad, et al., 2016).

The widespread practice of allowing cats to roam is linked to the fact that most cat owners live in less densely populated areas with access to gardens. In contrast, confined cats and purebred cats are more often found among people who live in densely populated areas, often, presumably, without access to gardens. Unlike the link between urbanization and confinement, the link between urbanization and a higher frequency of purebred cats is less obvious. One explanation could be that whereas domestic shorthair cats are abundant in the countryside, they are less readily available in the cities where people who want a cat will therefore go out and buy one. Another reason could be that some purebreds, for example, the Persian, are deemed unfit for the potential challenges and dangers that lurk outside and are therefore more attractive to people living in housing types without direct access to the outside (e.g., apartments). Also, purebred cats are often expensive which may not appeal to people living in the countryside where cats are easily acquired for free or at a low cost. However, to our knowledge this issue has not yet been examined and deserves further study.

The level of cat ownership we found in Denmark (21% of households) is low, compared with figures reported for other Western countries: for example, 30.9% of survey respondents ($n = 703$) in Ohio (USA) (Lord, 2008), 31.8% of respondents ($n = 1,205$) in the USA (Chu et al., 2009), 33% of respondents ($n = 424$) in Victoria, Australia (Toukhsati et al., 2012), 22.5% of respondents ($n = 884$) in Sydney, Australia (Toribio et al., 2009), and 26% of the households sampled ($n = 2,978$) in the UK (Murray et al., 2010). However, these percentages are derived from studies with different sampling methods and sample sizes and so caution is called for when comparing the numbers.

Judging by figures from studies conducted in other countries, the proportion of companion cats allowed to roam in Denmark is relatively high: 45% of 152 cat owners in Athens-Clarke County, Georgia, USA provide outdoor access for their cats (Loyd & Hernandez, 2012), 39% of 217 cat owners in Ohio, USA (Lord, 2008), and 50% of 60 cat owners in the Teramon Province of Italy (Slater et al., 2008) do so. In Sydney, Australia, only 19.7% of 198 cat owners keep their cats indoors and/or in “pet park” type enclosures (Toribio et al., 2009), whereas a study conducted in Victoria, Australia, showed that 80% of 142 cat owners confine their cats to a property during the night and 41.2% do so during the day (Toukhsati et al., 2012). These differences may not simply reflect different traditions in the keeping of cats, as they may be indicative of differences in the negative effects the cats have on wildlife and differences in the dangers the cats encounter when they roam. In Denmark, unlike some of the other studied countries, domestic cats have been around for approximately 1,500 years, allowing local wildlife to adapt, and very few predators such as stray dogs and wild carnivores pose a serious danger to roaming cats.

Turning to our second research question about general attitudes to cats among Danes and why some dislike cats, we found that about two-thirds of them like cats and one in five do not. Among those who dislike cats, the commonest reported reasons are linked to cat behavior and physical appearance (e.g., do not like their behavior, they are dirty, independent, impossible to train). Concerns about wildlife and public health, which play a major role in public debates about cats, appear to matter less. There is a clear contrast here with studies undertaken in countries such as Australia and the US (Dabritz, Atwill, Gardner, Miller, & Conrad, 2006; Grayson et al., 2002; Loyd & Hernandez, 2012; Toukhsati et al., 2012) where the public display greater concern about the effects of cats on wildlife.

The opinions of Danes on the practice of allowing companion cats to roam, and what they see as potential problems with this practice, are diverse but mainly positive: most Danes (60%) do not see it as a problem that companion cats are allowed to roam freely, although a significant minority (27%) of the public regard roaming cats as a problem. The view that roaming cats are a problem is more common in less densely populated areas. At the same time, roaming cats are more common in these areas. Thus, it seems that people who are more exposed to cats in public spaces (and potentially on private ground) are more likely to perceive roaming as problematic. Interestingly, however, not all of those who see outdoor cats as a problem think that cats should be kept indoors, nor do most of these respondents perceive outdoor cats as a big problem or an issue in neighbor disputes.

As previously described, studies conducted in other countries paint a diverse picture, with divisions between people who are reported to favor cat advocacy and others with wildlife conservation management concerns. Some show rather high levels of support for owners who allow their cats to roam (Athens-Clarke County, Georgia, USA: Loyd & Hernandez, 2012); some generally support cat confinement (in various forms) (Victoria, Australia: Toukhsati et al., 2012); some are generally more neutral than other stakeholder groups to outdoor cats (members of a bird and conservation advocacy organization and TNR supporters) (Florida, USA: Wald et al., 2013); and some show overall acceptance of most aspects of cat control legislation (neutering of cats, licensing of pet cats, restrictions on the number of cats per household, and restricting cats to their owner's property) (Perth, Western Australia: Grayson et al., 2002). Importantly, however, this mixed picture of public attitudes in different regions and countries should be seen in the light of several national and cultural differences, including the national or regional history of cat ownership; the popularity of cats; the numbers and management of stray and feral cats; the local wildlife; and attitudes to the animals that cats hunt (e.g., rats, mice, birds, rabbits). Methodological differences reflected in survey design, rhetorical variation in survey questions, and differences in the response options and the methods of eliciting them can all create dissimilar backgrounds that also render comparisons more difficult.

Conclusion

A majority of Danes favor cats being allowed to roam in public spaces, but a significant minority strongly dislike cats and prefer restrictions on their movement. The main reasons for concern are

aesthetic in character rather than a matter of protecting wildlife or minimizing the potential spread of diseases. It would be interesting to examine whether a similar picture is found in countries with highly polarized “cat wars.” If so, the discussions about roaming cats should be conducted in much broader terms than is currently the case.

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Conflicts of Interest

There are no conflicts of interest.

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