

**Pet Ownership as a Component of  
Psychosocial Resilience to Disaster:  
An Exploratory Study in West Moors,  
Dorset, United Kingdom**

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A dissertation submitted to  
Auckland University of Technology (AUT)  
in partial fulfilment of the requirements for  
the degree of  
Master of Emergency Management  
(MEMMgt)

2020  
School of Public Health and Interdisciplinary Studies  
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ATTESTATION OF AUTHORSHIP

*“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”*

Signed: \_\_\_\_\_

Date: 10 January 2020 \_\_\_\_\_

Sahrah Gwendoline Mai

## ACKNOWLEDGEMENTS

I would like to thank Dr Loïc Le Dé for supervising my study and keeping me on track to the finishing line. He provided excellent guidance and insight, as anticipated; what surprised and was helpful to me was the speed with which he responded to queries and his recollection, at any point, of even the most obscure details from our discussions about my study. I am very grateful for Loïc's oversight, supervision and encouragement.

## ETHICS APPROVAL

Ethics application number 18/386 was approved on 7 November 2018.

## ABSTRACT

When disaster strikes, the focus of disaster management is on protecting the lives of humans and there is little or no provision for the welfare of animals. This approach, as well as denying animals protection as fellow sentient beings, fails to take into consideration the importance of animals to humans, particularly where there is a strong bond such as between an owner and their pet. Pet ownership influences health and wellbeing with consequences for individual psychosocial resilience. Pet ownership also influences social capital which is a key component of resilience at community level and has consequences for wider society. However, while there is growing literature on these various elements, research making links between them remains scarce. Using the United Kingdom as case study and through thematic analysis of interviews conducted with five pet owners and three emergency management practitioners, this dissertation explores links between pet ownership, health and wellbeing, social capital and psychosocial resilience. The objectives were to explore the strengths and weaknesses of pet ownership in the face of disasters and identify implications for policy and practices geared towards Disaster Risk Management (DRM). The findings agree with those of earlier studies that pets are part of the family and the relationship between owner and pet can be as close as between humans. Pet ownership and the presence of a pet in the community positively influence social capital, while distress at the death or loss of a pet has a negative effect on the psychosocial resilience of the owner and on others in the owner's social networks. Distress and grief may lead to mental illness including Posttraumatic Stress Disorder (PTSD), and/or lowered social capital, both of which have consequences for community resilience. In a disaster, pet ownership can be a protective factor, for example through the security and comfort of pet's presence, but can constitute risk where people refuse to evacuate in a disaster if their pets cannot be evacuated with them. The study considers implications of the findings for policy and practices geared towards DRM and concludes that there is a need to protect pets in a disaster, for their own sakes and as a way of safeguarding human health and wellbeing.

Keywords: disaster, pet ownership, pet, wellbeing, psychosocial resilience, social capital, community

## CHAPTER ONE: INTRODUCTION

### 1.1 Overview

The imperative to protect life in disasters has seen the development internationally of increasingly sophisticated approaches to emergency management including realistic training scenarios and multinational coordinated responses supported by satellite-fed technology (Bello & Aina, 2014); however, this progress has not been matched by redefinition of the *life* to be protected: this remains generally understood as *human* with the lives of animals receiving limited consideration (Irvine, 2006). In addition to being speciesist (Irvine, *ibid*) this approach fails to take into consideration the importance of animals to humans, particularly where there is a strong emotional connection such as that between an owner and a beloved pet they consider a member of their family (Walsh, 2009a, 2009b; Cohen, 2002; Carlisle-Frank & Frank, 2006).

Pets, or companion animals are, according to Amiot, Bastian & Martens (2016) “animals we live with and that have no obvious function” (p. 552) compared to animals such as race horses and farmed pigs whose value is evidently practical or economic. Serpell and Paul (1994) observe that it is the beneficial nature of the owner-pet relationship that gives pets their importance, and this is exemplified in Glassey’s (2010) online survey of pet owners in Taranaki and Wellington (New Zealand [NZ]) in which 99 per cent of owners identified their pet as part of the family and 63 per cent identified their pet as an important coping mechanism during times of stress.

Darroch and Adamson (2016) argue that animal lives are seen as second best, and this might indeed be inferred from reports such as those of the 2010 earthquake in Christchurch, NZ, which reported no direct loss of life (Ministry for Culture and Heritage [NZMCH], 2016) although approximately 3,000 animals died (Glassey & Wilson, 2011) and the Black Saturday fires in Australia which reported 173 human deaths but did not mention the one million wild and domesticated animals estimated by the Royal Society for the Prevention of Cruelty to Animals (RSPCA) to have perished (Black Saturday Fires, n.d.). More recently, one billion animals are estimated to have been killed since September 2019 in Australian wildfires which continue to burn (NBC News, 2020). Similar inference may be drawn from the scant reference to animals in disaster management legislation around the world, including New Zealand’s (NZ) Civil Defence Emergency Management Act 2002 and the United Kingdom’s (UK) Civil Contingencies Act 2004. As Rogers (2015) succinctly states, “if a situation is not safe for people, it’s not safe for animals” (p. 270), from which it is inferred that

because animals are fellow sentient beings that feel injury, pain, fear and distress (Australian Veterinary Association [AVA], (n.d.); Ministry for Primary Industries [MPI], 2013) there is a moral imperative for humans to protect animals if we are able to do so. This study focuses on animals kept as pets. All animals deserve attention and the researcher is aware of the literature relating to other groups of animals (for example, wildlife, livestock and captive animals); however, because of the scope of this dissertation, animals other than pets are purposefully excluded from discussion.

Moral considerations aside, it makes no sense societally or financially to ignore pets in disasters in light of the evidence that saving pets saves people by increasing evacuation compliance and reducing psychosocial impact (for example, Edmonds & Cutter, 2008; Heath, 1999; Irvine, 2009). As well as this disaster-specific reference to the protective influence of pets on human safety and welfare, the weight of evidence suggests that having a pet improves human health (for example, Headey, 2003; Herzog, 2011; Morley & Fook, 2005). A positive association between pets and health implies consequences for general wellbeing, and Marmot and Wilkinson (1999) suggest there are blurred boundaries between physical, psychological and social influences on health.

Individuals with good health and wellbeing are more likely to go out and about, engaging with others in their community and participating in social networks. These social connections and their inherent norms of reciprocity and trust are termed *social capital* (Putnam, 2001; Bourdieu, 1997; Coleman, 1990) and constitute a vital component of community resilience; that is, a community's sustained ability to withstand and recover from adversity (Chandra et al, 2011). An individual's capacities and coping mechanisms determine their psychological wellbeing and, in the context of disaster, a person with high social capital has the social connections, networks, goodwill, reciprocity and trust which improve their chances of survival and psychological recovery from the shock and distress of the event. A study by Wood (2017) finds that social capital is higher among pet owners, and there are, therefore, links between pet ownership, psychosocial wellbeing and social capital. However, the links are under researched and there is limited literature in the context of disaster.

This study explores the links between pet ownership, psychosocial resilience and social capital, and considers the implications for Disaster Risk Management (DRM) in the UK. Section 1.2 describes the relationship between people and their pets and Section 1.3 considers the links between pets and psychosocial resilience. Section 1.4 considers implications of these relationships for DRM and Section 1.5 introduces the study. Section 1.6

presents a case study including an overview of hazards in the case study area. Section 1.7 summarises the introduction.

## 1.2 The relationship between people and their pets

Bowlby (1969) proposes that the owner-pet relationship is underpinned by attachment theory which assumes that a person wants to be close to an attachment figure who meets the four criteria of being sought out and available when needed; providing protection and support during distress; being a reliable base for risk-taking and exploration; and whose absence causes separation distress (Mikulincer & Shaver, 2007).

While the nature of the owner-pet relationship is an emotional bond, the legal ties that bind owner and pet are commonly those of ownership and in the UK a pet is a chattel that can be kept, used, given away, sold or disposed of as the owner wishes. Aspects of pet welfare that an owner is able to control are, however, subject to legislation under which animals must be kept in such a way that they have freedom from hunger, thirst, discomfort, pain, injury and disease, fear and distress; and are able to freely express (most) of their normal behaviours (Department for Environment, Food & Rural Affairs [DEFRA], 2006). The statistics demonstrate high owner compliance with the legislation: in a total UK pet population estimated in 2019 at 54 million (Walfowitz, 2019) the number of complaints about animal cruelty and neglect in the UK numbered approximately 130,700 (Royal Society for the Prevention of Cruelty to Animals [RSPCA], 2019). The care that a pet receives from its owner is reciprocated by the pet's positive influence on the owner's health including psychosocial aspects which are outlined next in Section 1.3.

## 1.3 Pets and psychosocial resilience

People feel better when they receive emotional support from loved ones such as partners, family and friends. Brown, Richards and Wilson (1996) contend that this support is also found within an owner-pet relationship where the companionship, affection and unconditional love given by the pet increase the owner's feelings of security and wellbeing. Experimental research by Zilcho-Mano Mikulincer and Shaver (2011) suggests that simply thinking about one's pet may confer psychological benefits, although there has been limited research in this area. The psychological benefits and positive feelings arising from the owner-pet relationship are among the factors that promote psychosocial resilience, which may be understood as an individual's ability to cope with a traumatic event, adapt to changing conditions and move forward in life. Among the many definitions of psychosocial resilience are Bonanno's (2004) "ability to maintain a stable equilibrium" (p. 20) and Ahmed's (2007) suggestion that resilience is promoted by an individual's internal characteristics (such as secure attachments

and optimism) and external factors (for example, emotional sustenance). Dückers (2017) proposes psychosocial resilience as a concept comprising individual, community and societal layers and also as a process that takes place on (at least) interconnected individual, community and societal levels. Dückers (ibid) contends that the connectedness of the community is dependent upon interconnection at individual level.

At individual level, personal capacities and coping mechanisms determine resilience; therefore, as pet ownership is shown to positively influence psychosocial resilience, pet ownership can be seen as a coping mechanism and as a positive influence on owners' capacities to cope. This is resilience by extension. From this it can be reasoned that if a strong owner-pet bond, as a secure attachment and source of emotional sustenance, positively influences psychosocial resilience, then a broken bond must have negative consequences. This reasoning is supported by the finding that an owner may feel their pet's death on a level similar to losing a human loved one (Gerwolls & Labott, 1994) or family member (Brown, Richards & Wilson, 1996). Darroch and Adamson (2016) point out that in a disaster the death of a pet may come on top of losing human family and/or be accompanied by guilt where the pet has been abandoned (Chadwin, 2017; Hunt, Al-Awadi & Johnson, 2008). Grief at this level affects mental health and recovery and in some cases leads to the development of Posttraumatic Stress Disorder (PTSD) (Hunt et al, ibid). As well as traumatising the owner, a broken owner-pet bond has consequences for the wider community as suggested in Zottarrelli's (2010) observation that "there are significant human health and safety consequences of pet loss" (p. 120).

The literature thus suggests that pet ownership influences psychosocial resilience, social capital and community resilience. Zottarrelli (ibid) highlights the need for policymakers and practitioners to "consider the role of the human-animal bond in human behavioural choices during disasters" (p. 120); however, there is limited empirical work in this area. The implications of this for DRM are outlined in Section 1.4.

#### 1.4 Implications of pet ownership for Disaster Risk Management (DRM)

Chadwin (2017) contends that the importance of pets to their owners needs to be recognised and considered during disaster planning, observing that by protecting pets and improving pet welfare, owners' health is improved and the risks of distress and PTSD are reduced. Inferred from this is that the psychosocial resilience of pet owners and the wider community is better where pets as well as humans are protected in a disaster. This is relevant and of concern in

the UK because the Civil Contingencies Act 2004 does not make specific provision for pet welfare and yet almost half of UK households contain a pet.

In addition to consequences for psychosocial resilience, failing to provide for pets in a disaster may directly lead to human lives being endangered. Pet ownership is the most significant factor in evacuation failure, with many owners refusing to leave if they cannot take pets with them or, if forced to evacuate without pets, subsequently re-enter the disaster zone to attempt a risky rescue (for example, Heath, Kass & Beck, 2001). Day (2017) contends there is a strong argument for pet ownership being evaluated as a health and safety risk by organisations involved in DRM and whose job it is to protect and uphold public health and safety. One clear implication for DRM is that if human lives and psychosocial resilience are to be protected, consideration must be given to pets in disasters.

### 1.5 The researcher

The researcher grew up in the UK in a home shared at various times with cats, mice, rabbits, budgerigars, goldfish, frogs, stick insects, butterflies and miscellaneous bugs. As an adult she has hand-reared 117 abandoned kittens and nursed back to health numerous injured creatures. The researcher holds a New Zealand veterinary nursing qualification and has worked in pet boarding facilities, wildlife parks, veterinary clinics, rescue centres and animal Accident and Emergency (A&E). In these contexts, and as a pet owner, she has had extensive exposure to the distress associated with animal loss and death, and has personally experienced the trauma and grief that comes with the death of a pet with whom there is a strong emotional bond. The researcher's experiences, and subsequent reflection and studies, have emphasized for her the links between a person's emotional bond with their pet, their psychological wellbeing and their relationships. The research process highlighted the paucity of literature on the research question and on consequences of pet ownership and pet loss in disasters, and as a result the study was refined to focus discussion on areas with particular regard to DRM.

### 1.6 The study

The research question is *"How does pet ownership influence psychosocial resilience in a disaster?"* This will be addressed through:

- Exploring the strengths and weaknesses of pet ownership in the face of potential disasters
- Identifying implications of pet ownership for policy and practices geared towards DRM

The present study is motivated by a significant gap in the literature. While it is evident from the literature reviewed that there are links between pet ownership, psychosocial resilience and social capital, the bulk of existing research has been conducted without reference to DRM. This study examines these links among a group of pet owners in the UK and considers the implications for resilience in disasters. Section 1.6 presents the case study.

### 1.7 Case study: West Moors, Dorset, UK

The UK was chosen for the study for three main reasons. Firstly, the UK is representative of occidental, high-income countries with high levels of pet ownership; secondly, the British are known as a nation of pet lovers and the UK is at the forefront of animal welfare policies; and thirdly, the UK, in common with that of many other countries, makes no specific policy provision for pet welfare in the event of a disaster.

The UK is Europe's largest island, located at 55.3781°N 3.4360°W in the northern hemisphere off the northwest coast of continental Europe and bordered by the Atlantic Ocean, North Sea, Irish Sea, Celtic Sea and the English Channel. The location of the UK is depicted in Figure 1 below. Comprising four countries (England, Wales, Scotland and Northern Ireland), the UK covers an area of 242,514 km<sup>2</sup> and has a population of 67,683,720 million comprising 0.88 per cent of the 2019 world population (Worldometers, 2019).



Figure 1: World map with United Kingdom highlighted. From Free World Maps. Retrieved from <https://www.freeworldmaps.net>

The population of the UK is distributed among approximately 27.8 million households (Office for National Statistics [ONS], 2018) of which 82 per cent (56,012,276 people) are in urban settings. 45 per cent of households (12.4 million households) own an estimated total of 54 million pets (Walfowitz, 2019), the most common species being dogs, and cats (10.9 million) followed by rabbits (900,000), then caged birds and fish (People’s Dispensary for Sick Animals (PDSA), 2019). Among dog and cat ownership there is regional divide with more dogs in the North and West and more cats in the South and East. These pet ownership statistics are set out in Table 1.

Table 1

*Pet Ownership in the UK, 2019*

<b>Species</b>	<b>Pet population (millions)</b>	<b>Households owning a pet (percentage)</b>	<b>Regional divide: dogs and cats</b>	
Dog	9.9	25	North and West	
Cats	10.9	17		South and East
Rabbits	900,000	2		

*Note.* Pet ownership is shown in relation to the top three species of pet kept in the UK. The numbers refer to the total UK pet population in millions for each species and the percentage of households owning the species. The regional divide between dog and cat ownership is also shown. From PDSA, 2019.

The species of pet owned varies from region to region within the UK as illustrated in Figure 2 on the following page.

# Our (United) Animal Kingdom

The practicalities of living in specific regions mean that the UK's most popular pet varies depending on the location in the UK.

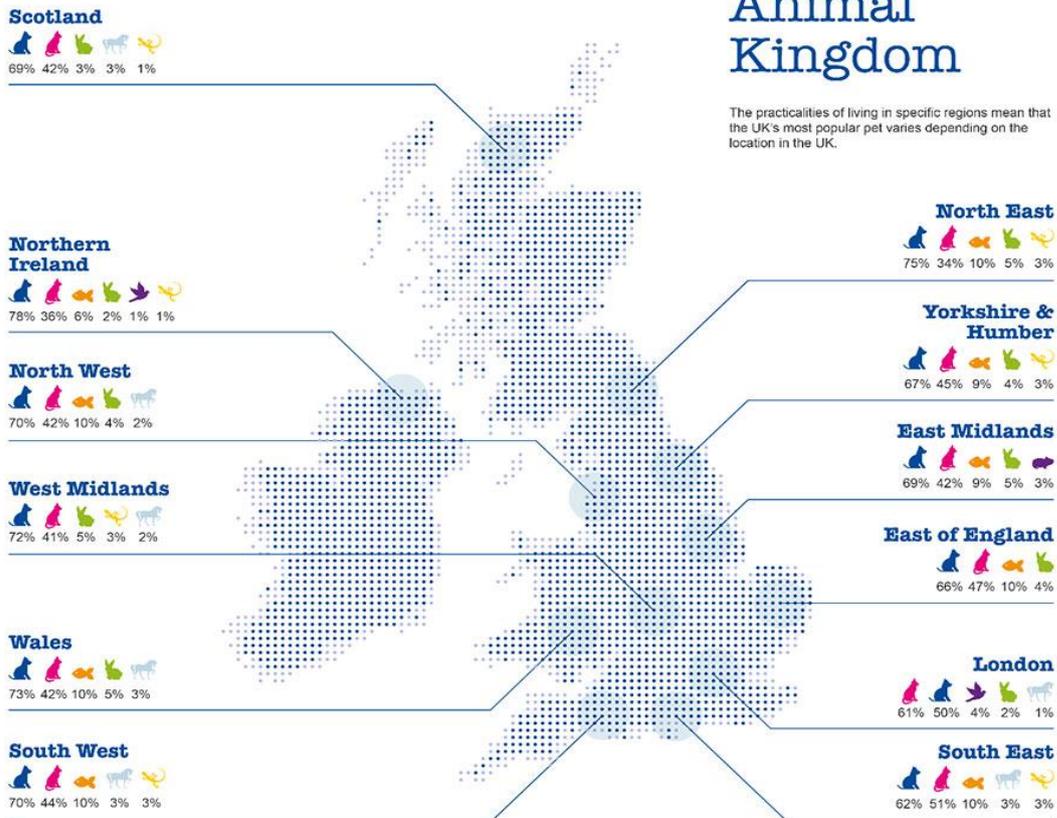


Figure 2: Map of the UK showing the regional distribution of pet species. From *Pet Plan*. Retrieved December 4, 2019 from <https://www.petplan.co.uk/pet-information/uk-pet-census-and-stories/>

The data collection area for the study was West Moors in the country of Dorset in the South West of England, where 70 per cent of households own dogs and 44 per cent own cats. The location of Dorset is shown in Figure 3 below.



*Figure 3:* Map of the UK showing the location of the data collection area (West Moors, Dorset). From *Wikipedia*. Retrieved from [https://en.wikipedia.org/wiki/Dorset#/media/File:Dorset\\_UK\\_locator\\_map\\_2010.svg](https://en.wikipedia.org/wiki/Dorset#/media/File:Dorset_UK_locator_map_2010.svg) Copyright (n.d.) by Nilfanion. Reprinted with permission.

The UK is susceptible to disasters arising from natural hazards and from human actions. Among the hazards, those most likely to impact the area studied are those related to the environment, such as flooding or forest fires; severe weather such as strong winds, heavy snow or heatwave; and infectious diseases. One recent example of an event affecting the study area is a significant heath fire in 2018 which threatened properties and was attended by over 100 firefighters.

## 1.8 Summary

Chapter one has introduced the study, explained the research gap, stated the purpose of the study, and set out the study objectives. This chapter has also explained why people become so attached to their pets, outlined the connection between pet ownership and psychosocial resilience, and explained why pet ownership is relevant and important to DRM. Chapter two comprises a critical review of extant literature related to pet ownership with a particular focus on psychosocial aspects. Chapter three discusses the study's methodology and methods used and explains how data was gathered and analysed. Chapter four then presents the findings of the research in relation to the objectives set out in chapter one. Chapter five first discusses the findings documented in chapter four in relation to the existing literature and to the objectives set out in chapter one, and then identifies implications for DRM.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

The study is concerned with how pet ownership influences psychosocial resilience in disasters. Chapter two explores the academic literature on pet ownership, human health and wellbeing, social capital and psychosocial resilience and seeks to identify evidence and indications of links and associations between these. The main search for literature took place between December 2018 and April 2019 and additional literature was sourced throughout the study period as suggested by readings, interview findings and researcher reflection. The initial search strategy employed was a trawl of databases including Web of Science, Scopus and PsychInfo for relevant peer-reviewed items in journals. An arbitrary date parameter of 2000-to date was set for the trawl and key literature prior to this was searched individually according to the topic (for example, social capital) or author and known date (for example, Bourdieu, 1986). Relevant literature was found primarily in journals concerned with disaster and emergency management, human health, psychology, social science, zoology, veterinary medicine, and animal welfare. Search words and phrases included 'pets and human health', 'pet ownership and social capital', 'pet ownership and psychosocial resilience', and 'pets and disasters'. Combinations of these terms, and substitutions such as 'companion animals' (in place of 'pets') were also used. Of the search results, the first 200 were skim read for relevance to the study and 131 items were included in the review. A further 47 items were accessed for background information on context or for technical detail.

The literature is reviewed in five sections: Section 2.2 examines pet ownership, first setting out a brief history of the relationship between people and pets and discussing the legal status of a pet, and then examining the emotional bond that develops between people and their pets. After that, literature on the influence of pets on health and wellbeing is reviewed. Section 2.3 explores social capital, first defining the term and its different forms and then outlining the positive and negative aspects of social capital. The final part of this section discusses links between pet ownership and social capital, focussing on trust and reciprocity which are key components of social capital. Section 2.4 explores psychosocial resilience, first providing an overview of the different ways in which resilience can be viewed and then examining psychosocial resilience at individual, community and societal levels. Section 2.5 explores Disaster Risk Management (DRM) in relation to pet ownership, starting with an overview of DRM and the reason for the recent paradigm shift from response and recovery

to risk mitigation. The overview is followed by discussion of the relevance of pet ownership to DRM and examination of UK legislation in relation to pet welfare. Section 2.6 presents the key findings of the literature review.

## 2.2 Pet ownership

### 2.2.1 Pet ownership: The history

Although pets have been described as having no obvious function (Amiot, Bastian & Martens, 2016) there is considerable evidence that the relationship between humans and animals is enduring; including, for example, the proposal that human responses to animals evolved as a consequence of the intimate involvement of hunter-gatherer groups with other living organisms throughout more than 99 per cent of human history (Wilson, 1993). In the present day many people share their households with an animal they regard as a family member (Cohen, 2002; Carlisle-Frank & Frank, 2006). These non-human family members are *pets*, a word believed to derive from the Scottish *paeta*, meaning 'tamed animal', or a 1530's Scottish/northern English term for an animal kept as a favourite (StackExchange, n.d.). Increasingly, the term *companion animal* is used in recognition of a pet's role and importance to its owner, and the appropriateness and significance of the broader term is acknowledged here; however, for consistency throughout this study, the word used with reference to any animal living in a human household is *pet*.

The legal status of a pet in the UK is *chattel*, in other words, an item belonging to an owner who is entitled to decide if and how they keep it, care for it and dispose of it. Many consider chattel status inappropriate for a living being, and propose as an alternative that the legal obligation towards a pet be that of *guardianship*. However, guardianship would legally prioritise a pet's needs above all other considerations including the guardian's ability to pay for treatment, and many veterinary professionals contend that guardianship could be financially onerous and, in some cases, lead to veterinary attention being withheld or pets being disposed of inhumanely. For this reason many veterinarians favour retaining the *ownership* status of a pet, despite the paradox of an owner being able to decide to keep or dispose of a pet without consideration of what is best for the animal, and yet who is required by law to ensure the welfare of the animal in their care and control (even in disaster situations) in accordance with the provisions of animal welfare legislation. Abuse, neglect and/or cruelty to an animal constitute a breach of the legislation but these terms clearly cannot be applied to a chattel and therefore the legal basis for prosecution is insecure.

Beyond the legal relationship, an owner and their pet generally share an emotional bond, and this discussed in the next section.

### 2.2.2 The human-animal bond and attachment theory

An online survey in 2016 of 27,000 consumers in 22 countries found that, globally, 57 per cent of households own at least one pet, with similar levels of ownership among men and women (Pet Food Industry, 2016). Animal ownership is common across cultures and social classes, although the nature of the relationship and attitudes to the welfare of the animals vary (Messent and Horsfield, 1985). In the UK almost half of all households include a pet (Statista, 2019). Various explanations are suggested as to why people bring animals into their lives; for example, Herzog (2011) attributes it to the misfiring of parental instincts, while Wilson (1993) suggests it is a consequence of *biophilia*, that is, the emotional affiliation humans have for other life forms, and Amiot, Bastian and Martens (2016) propose that the human brain is wired to think differently about inanimate objects and animals. Anecdotally, 'accidental adoption' is often cited as the reason a pet was acquired and this refers to a situation whereby, for example, a teenager moves away from home and their parents agree to continue caring for a pet acquired on impulse; or a family takes in a hungry, non-microchipped cat found in their garden and whose owner cannot be traced.

People generally love their pets. A study by Herzog (2011) found that when asked about what they get from their relationship with pets, owners typically mention companionship, having a play partner and the need to care for another creature, although Zilcha-Mano, Mikulincer and Shaver (2011) suggest that people are drawn to pets by the stability of the relationship, the lack of judgment and the unconditional love the pet gives them. Pet owners believe their pets love and accept them unconditionally and non-judgmentally, and this may lead to the forming of an attachment bond (Levinson, 1969). Attachment is said to exist where a person prefers to be close to an attachment figure, particularly when stressed; in need of support or encouragement; or needing the security of a safe base from which to take risks; and where the person feels distress if separated from the attachment figure (Bowlby, 1982, 1988; Hazan and Shaver, 1987; Mikulincer & Shaver, 2003, 2007). Levinson (ibid) argues that a pet, as an available, active, mobile and affective entity, is a natural object of attachment; and Karen (1994) observes that a relationship with a non-human being allows a wide range of behaviours and interactions (although this does not give an opportunity to seek advice or talk through worries and anxieties).

The literature suggests that, in a disaster, an owner whose pet was with them would feel calmer, safer and more protected than if separated from their pet. In addition to the emotional pitfalls of the separation, the distressed owner may attempt a risky rescue and further endanger lives already impacted by the disaster (Chadwin, 2017). There is, therefore, risk associated with pet ownership and with a broken owner-pet bond, and this has implications for psychosocial resilience and DRM. Psychosocial resilience is examined in Section 2.4 below. Despite the emotional highs and lows of having a strong emotional attachment to their pet, most owners firmly believe their pet is good for them.

### 2.2.3 How pets influence human health and wellbeing

The commonly-held assumption that pets are good for their owners has been termed 'the pet effect' (Allen, 2003) and may be a consequence of early studies of the effects of pets on human health which found, almost exclusively, positive associations. For example, pet owners were found to have higher survival rates after heart attacks (Friedmann, Katcher, Lynch & Thomas, 1980); lower increases in blood pressure when stressed (Allen, Shykoff and Izzo Jr, 2018); improvements in mental health (Morley & Fook, 2005); and better physical and psychological wellbeing (Raina et al, 1999). These finds are, however, contested: Herzog (ibid) points out that many of the early studies lacked design rigour and were conducted with small samples, relying solely on pet-owners' (subjective) responses rather than scientific (objective) measurement. Herzog (ibid) argues that the idea that pets improve physical and mental health and psychological wellbeing is not proven, and recent research has been unable to replicate many of the findings of earlier research into the effects of pets on health. Furthermore, some recent studies contradict earlier studies, finding, for example, that pet owners are more likely to die within a year following a heart attack (Parker et al, 2010); there is no difference in blood pressure between people who do and do not have pets (Wright et al, 2007); and pet owners suffer more from psychological problems (Parslow et al, 2005; Koivusilta & Ojanlatva, 2006). Moreover, as well as contradictory findings, some recent studies suggest negative associations between pets and health; for example, Parslow, et al (ibid); Amiot, Bastian and Martens (2016); McNicholas et al (2005). A lack of consensus about the influence of pets on human health is evident from these contradictory findings, which Herzog (ibid) deems a 'mishmash of conflicting results' (p. 237).

Despite the lack of consensus, however, and while there is emerging evidence of the connection between animals and health being varied and complex (Amiot, Bastian and Martens (ibid), the weight of current evidence strongly suggests a positive association and

this concurs with pet-owners' firmly-held beliefs that their pets are good for them. Belief affects biology (Lipton, 2005) and it is therefore plausible that an owner who believes their pet has a positive effect on their health and psychological wellbeing experiences a positive effect and functions accordingly, even though an objective evaluation of their health might produce a different result. A potential difference is therefore accepted as existing between subjective and objective health measurement, and recognition of this possibility is important in the current qualitative study. Data collected from participants may indicate a health status different to that if it were measured, leading to unsafe findings about whether pets are, in fact, good for owners (and hereby further contributing to Herzog's (ibid) perception of a 'mishmash' of findings (p. 237).

As well as influencing health and wellbeing, having a pet increases a person's social capital, and this is discussed in Section 2.3.

## 2.3 Social capital

### 2.3.1 Social capital defined

Social capital has many definitions with the common theme that social connections and networks have inherent value in the form of shared norms and values, trust, reciprocity and mutual obligation (eg Putnam, 2000; Bourdieu, 1997; Coleman, 1990). The value of social capital accrues from a person's investment of effort and goodwill into a social group that can, according to Horolets, Stodolska and Peters (2019) later be withdrawn with benefits, for example to achieve personal goals or social position. Putnam (2001) proposes two forms of social capital, 'bonding' (among horizontal networks with shared characteristics) and 'bridging' (between people or groups with different characteristics). A refinement of bridging social capital, termed 'linking' (upwards to formal or institutionalized power or authority) is proposed by Szreter and Woolcock (2004). Examples of bonding and bridging capital in the context of this study are that bonding social capital would form among the horizontal network of people with the shared characteristic of owning a pet, while bridging social capital would form between pet owners and people who did not own pets. Bourdieu's (1986) study of the dynamics of power in society proposes four types of capital, the others being economic, cultural and symbolic. While Bourdieu (ibid) suggests that each type of capital ultimately has economic value, Onyx, Edwards and Bullen (2007) make the point that social capital is the single resource that can be accessed by all communities irrespective of levels of wealth, and it is, according to Lang and Homburg (1998) what holds society together. However, while social capital may help society stick together it can also be divisive. Social capital facilitates

coordination and cooperation for mutual benefit, and it is a benevolent force in creating connectedness and membership among like-minded people (Cox, 1995); however, inferred from this is that a lack of social capital further disadvantages people who are already socially isolated, for example, because of age or infirmity. Furthermore, social capital can be misused; for example, to create an elitist group to the exclusion of others (Onyx, Edwards & Bullen, *ibid*) or to force compliance among members with rules and norms of behaviour that disadvantage or harm people outside the group. In the context of disaster, examples of misuse of social capital would be leveraging personal networks to obtain medical attention contrary to the accepted arrangement of medical triage, or asking a friend working in a disaster shelter to grant access, thereby excluding a person who had no-one to help them jump the queue.

### 2.3.2 How pet ownership influences social capital

Social capital is higher among pet owners. A study by Wood et al (2017) of 2692 pet-owners in Perth, Australia, and the US cities of San Diego, Portland and Nashville concluded that social capital is higher among people who have pets; dog owners have higher social capital than owners of other species of pet; and people who walk their dogs are likely to have higher social capital than owners who do not. The key reasons for the higher social capital seem to derive from the influence of a pet's presence in a social setting, and on two of social capital's components: reciprocity and trust.

The presence of a pet in a social setting breaks the ice and gets strangers talking (McNicholas & Collis, 2000). A survey of Australian pet owners found that 58 per cent of respondents had got to know people and made friends through pets (McHarg, Baldock, Heady & Robinson, 1995), although Collis, McNicholas and Harker (2003) contend that a casual acquaintanceship formed through meeting a pet does not necessarily develop into a relationship that provides social support; also, having a pet does not mean that the owner will in consequence develop a wide or strong social network (Collis et al, *ibid*). However, the empirical evidence is that many people meet others as a result of striking up conversation because of a pet, and some of these encounters develop into neighbourly relationships and/or enduring friendships within which there is trust and reciprocity. Pets also get strangers talking on social media: in a disaster context, images of pets in distress such as those below in Figures 4 and 5 are widely shared on social media and elicit widespread public concern and offers of (sometimes international) help to rescue, feed or foster pets found wandering in the neighbourhood. Images such as these convey the sad plight and bewilderment of pets in disasters, and partly explain why owners refuse to leave their homes

if beloved pets cannot be taken with them to a place of safety. Pet ownership is the most significant factor in evacuation failure (Heath, Kass and Beck, 2001).



*Figure 4: Pet dog in flood water*  
From *Sierra Club*. Retrieved from <https://www.sierraclub.org/sierra/what-happens-animals-during-natural-disasters>. Photograph by Khlongwangchao/IStock



*Figure 5. The cat man of Aleppo: rescuing battle-weary Syrian strays.* From *The Guardian*. Retrieved from <https://www.theguardian.com/world/gallery/2019/aug/06/the-cat-man-of-aleppo-rescuing-battle-weary-syrian-strays>. Photograph by Anas Alkharboutli.

### 2.3.3 Social networks, reciprocity and trust in pet ownership

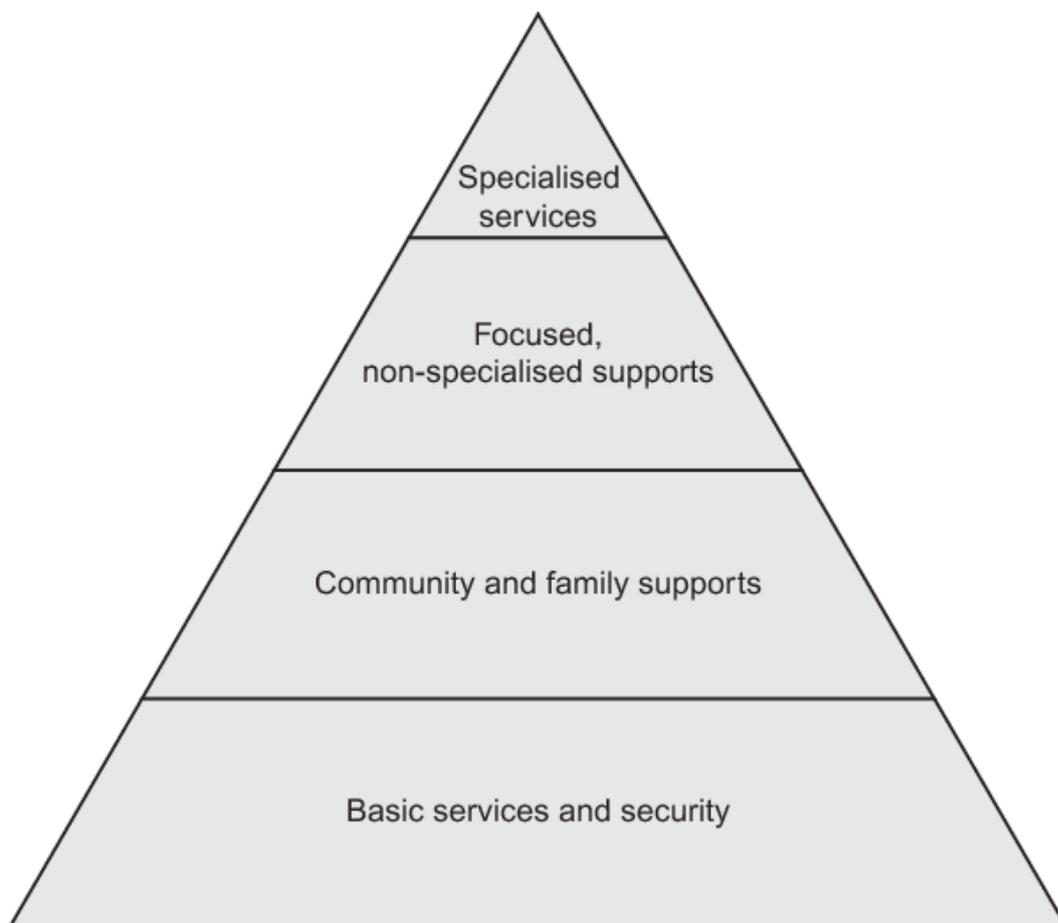
According to Kawachi, Kennedy, Lochner and Prothrowstith (1997) trust is a potential indicator of social capital, and pet owners' higher social capital (particularly bonding social capital) may be attributable partly to the strong ties and localised trust created as a result of their interactions with others through their pet. Onyx, Edwards and Bullen (2007) suggest that when a pet owner feels they can safely leave a beloved pet in the care of another person they are demonstrating as much trust in that person as if they were leaving them their child. Cusack (1988) concurs, drawing a parallel between pets and children in terms of the emotions they bring out in people. The type of trust involved here is not 'social trust', ie giving a stranger the benefit of the doubt, but the 'trust of familiars' that exists within a social network (Baum & Ziersch, 2003) (p.321) and it may be reciprocated by, for example, a later exchange of favours. Wood (2000) suggests that reciprocity may in itself be symbolic of trust, inferred from which is that the trust derives from doing someone a favour without agreeing a tit-for-tat arrangement and yet anticipating (and trusting) that the favour will be returned in kind at an unspecified future date.

Putnam (2000) proposes that social networks like these, and the trust and reciprocity within them, are key components of social capital. Chandra et al (2011) contend that social capital is a vital component of community resilience and Moore, Chandra and Feeney (2013) argue the importance of social networks to community resilience, and the need to preserve them in disaster response. Pet owners' social capital is therefore relevant to discussions of community resilience and DRM, and Wood et al (2017) propose that pets are "an under recognised conduit for building social capital and strengthening the social fabric of communities" (p. 447). The importance of pets in a disaster context is also under recognised: Thompson (2018) observes that amid the chaos of a disaster, being with one's pet lowers a person's stress, provides companionship and gives "feelings of safety, security, warmth and protection", while pet loss "can increase the risk of social disconnection after a disaster" (p. 225) by the pet not being there to facilitate social interaction and help prevent the owner feeling lonely. In a study by Quackenbush and Glickman (1984) of pet owners dealing with pet loss or the illness of their pet, 70 per cent reported diminished social activities. Inferred from this is that people distressed about their pets will probably withdraw from contact with other people, thereby negatively affecting their social capital. That is, however, conjecture and the social capital of pet owners and the influence of this on community resilience and DRM remains an under-researched area. In addition to influencing social capital, having a pet affects how a person feels and consequently influences decision making and behaviour. There are therefore links between pet ownership and psychosocial resilience, and this is explored in the next section.

## 2.4 Psychosocial resilience

### 2.4.1 Defining resilience

Estimates suggest that up to 80 per cent of people affected in an emergency will experience at least short-term mild distress; 15-40 per cent medium-term, moderate, or more severe distress; 20-40 per cent a mental disorder or other psychological morbidity associated with dysfunction in the medium term, and 0.5-5 per cent may have a long-term disorder (North Atlantic Treaty Organisation [NATO] 2009). This means that while most people are able to cope, adapt and move on with their lives, others struggle to regain their psychological equilibrium and become mentally unwell or develop Posttraumatic Stress Disorder (PTSD). To address this, the Inter-Agency Standing Committee (IASC) proposes intervention at four levels depending on the severity of individual need and the levels and support mechanisms are shown in Figure 6 below (IASC intervention pyramid for mental health and psychosocial support).



*Figure 6:* Intervention pyramid for mental health and psychosocial support. From IASC. Retrieved from [https://www.who.int/mental\\_health/emergencies/IASC\\_guidelines](https://www.who.int/mental_health/emergencies/IASC_guidelines)

A person who gets through and moves forward in life after a traumatic event or situation is said to be resilient. The word *resilient* was used until the twentieth century only to describe the ability of physical materials to bounce back into shape after being forcibly distorted by, for example, impact or stretching. In relation to resilience in humans, however, interdisciplinary perspectives differ and resilience can be viewed as trait, process or outcome (Southwick et al, 2014; Luthar, Cicchetti & Becker, 2000).

Viewing resilience as a trait, Bonanno (2004) proposes that hardiness, ego-resiliency and adaptive flexibility help a person to optimally adjust to different situations. Ahmed (2007) agrees that there are factors that protect but differentiates between internal traits like optimism, trust and secure attachments, and external factors such as safety, religious affiliation, emotional sustenance. Contradicting these views, the American Psychological Association (APA) (2014) states that resilience is not a trait and defines resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress” and involving behaviours, thoughts and actions that anyone can learn and develop. This APA definition is dismissed by Southwick et al (2014) with the contention that it does not reflect the complex nature of resilience. Furthermore, the APA (ibid) defines resilience as bouncing back, a concept more aligned with Bonanno’s (ibid) discussion of stable equilibrium and the North Atlantic Treaty Organisation’s (NATO) (2009) reference to an individual’s capacity to adapt without lasting damage. In the context of DRM, striving to return to normal is a false goal: Mooney et al (2011) contend that returning to normal after a disaster is neither possible nor desirable, and that the focus needs to be on “coping positively with a disaster and progressing towards a situation that has psychosocially and physically changed” (p. 27). Aligned with this forward focus, Connor and Davidson (2003) view resilience as the integrative process of biopsychospiritual homeostasis, and Norris et al (2008) define it as a process that links an individual’s adaptive capacities to a positive trajectory of functioning and adaptation.

The focus on adapting and moving forward rather than returning to normal appears to parallel the paradigm shift in disaster management from focussing on response and recovery to anticipating future events and mitigating disaster risks. This contemporary approach is echoed in psychotraumatology where there has been a shift from helping a person regain mental wellness after a traumatic event, to helping build their resilience in normal times (before a traumatic event occurs). Bonanno (ibid) emphasizes that there is a difference between recovery (a trajectory within which a person initially suffers and then recovers and moves on) and resilience (the ability to maintain a stable equilibrium). Where the focus is on

moving forward, resilience may be viewed as not only a trait or process but also as an outcome after a person has experienced adversity (Masten, 2001; Southwick et al, 2014).

#### 2.4.2 Resilience in a multi-layered framework

Despite the differing interdisciplinary perspectives on the meaning of resilience, all mention adversity and positive adaptation (Fletcher & Sarkar, 2013). The term used when referring to a person's health, wellbeing and ability to function in the context of the psychological and social environmental influences on them is *psychosocial resilience*. Dückers (2017) proposes a multi-layered framework within which psychosocial resilience may be understood and Dückers' (ibid) framework is interpreted here as illustrated in Figure 7.

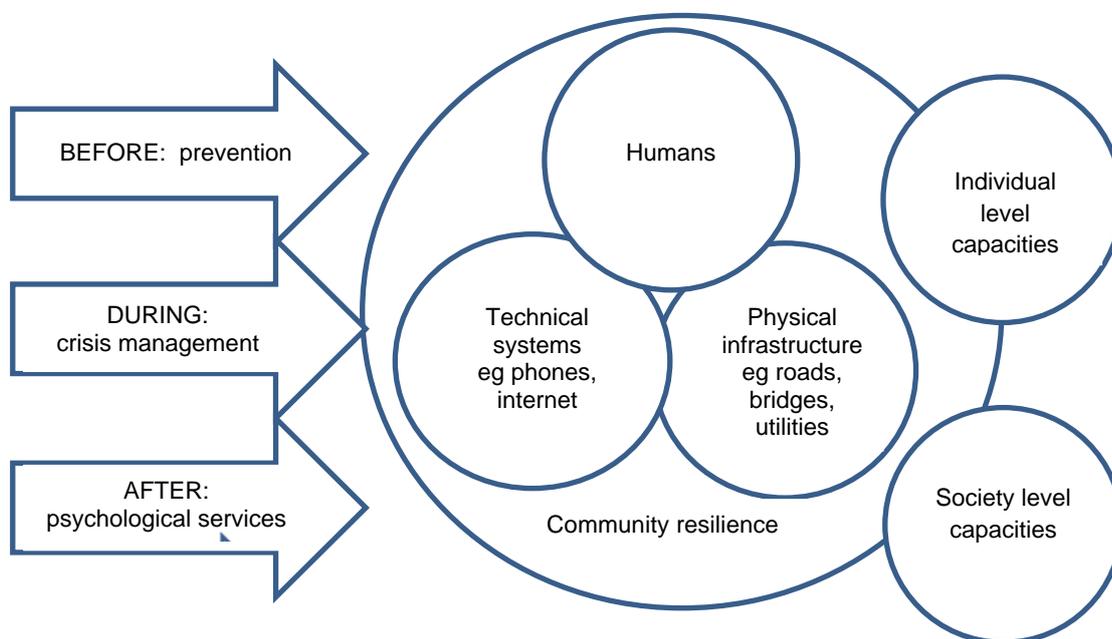


Figure 7: A multi-layered psychosocial resilience framework. Adapted from Dückers, 2017

According to Dückers' (ibid) framework, psychosocial resilience occurs on at least three levels (individual, community and society) within each of which there are sets of adaptive capacities that are probably interconnected. According to Adger (2000), community resilience, which is the ability of the people in a community to cope with a shock or threat to their infrastructure, functions as the link between individual capacities and those at society level comprising socio-economic, political- and institutional conditions, and operational structures and resources. Weaknesses in any area contribute to vulnerabilities ie "the predisposition of individuals and societies to be affected and the inability to manage disaster (International Strategy for Disaster Reduction [ISDR] 2004).

The literature on psychosocial resilience, and in particular Dückers' (ibid) framework, strongly suggests the interrelatedness of individual psychosocial resilience with that of the community and wider society, and this means that factors influencing an individual's psychological wellbeing are important not only in terms of their own mental health and happiness but also the resilience of their community and, by extension, society in general. It is therefore important to identify and understand factors in a person's life that can exert an influence on psychosocial resilience, and one of these factors is pet ownership. The literature suggests that an owner-pet bond, as well as a human-human bond, can be a source of the social support, security and emotional nurturing proposed by Dückers (ibid) as among the protective factors for individual psychosocial resilience. However, there is little academic literature on the effect of pet ownership on psychosocial resilience, what this means for the community and how that is relevant to DRM.

## 2.5 DRM and pet welfare

### 2.5.1 Contemporary DRM: The focus on resilience

In recent years the focus of DRM has shifted from relief and response to identifying and mitigating risk (Yodmani, n.d.). The key driver for the paradigm shift in disaster-management focus from post- to pre-event was recognition that the escalating costs (in terms of human lives, economies and the environment) of disasters could be reduced if, rather than just responding to a disaster and dealing with the aftermath, mitigating action were taken to anticipate a future disaster of unknown date and only estimated likelihood and severity. The forward focus was adopted in 2015 in the United Nations accord entitled the Sendai Framework for Disaster Risk Reduction 2015-2030 within which member states, including the UK, pledged to address the four priority areas of understanding disaster risk; strengthening disaster risk governance to manage the risk; investing in Disaster Risk Reduction (DRR) for resilience; and enhancing preparedness to be able to better respond and recover (United Nations Office for Disaster Risk Reduction [UNDRR, 2015]). The implementation of DRR is DRM which has a strong focus on the resilience of communities.

The resilience of a community cannot, however, be addressed adequately unless the identity of the community is fully understood. The term community has multiple definitions (McQueen et al, 2001) all characterised by comprising a "group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings" (p. 1936). Pet owners constitute a community in their own right; also, throughout the UK there are numerous communities arising from, dependent

upon or related to pet ownership and pets, as well as communities based on geographic location. Individual pet owners are contemporaneously members of other communities including those in which they reside (for example, their street, neighbourhood and county).

Individual psychosocial resilience is linked to community resilience which is a key concept in DRM and among the Sendai Framework priorities, yet neither makes provision for pet welfare, and the Sendai Framework mentions animals only in the context of protecting livelihoods and the risk of zoonotic diseases. In a disaster, as well as the need for practical solutions for evacuating and sheltering pets, the resilience of the pet-owning community is tested in a way that causes unique concern, and that is the loss of a pet. Pet loss has implications for DRM because of the negative impact of the ensuing distress on psychosocial resilience of the individual and the consequent damage to the resilience of the communities to which the individual belongs. As an example, an architect grieving for their dead pet stops going to the dog park because they no longer have a pet to exercise. As well as missing out on the physical daily routine, the grieving owner no longer has social interaction with other dogs' owners and loses touch with what is going on in the community, including requests for volunteers to work on local projects in which they would normally be involved. The architect's absence from the dog-owner social network and their lack of involvement in community matters, compared to their previous engagement and effort, has a negative effect on their social capital and on the community's resilience.

#### 2.5.2 Disaster Risk Management in the UK and pet welfare

Preparation for, and response to, disasters and large-scale emergencies in the UK are mandated in the Civil Contingencies Act 2004, a product of the Civil Contingencies Secretariat (CCS) which sits within the UK Cabinet Office at the heart of UK government in Whitehall, England. The CCS was set up in 2001 with the aim of improving the UK's preparedness and response through partnership with key UK stakeholders and the devolved administrations of Scotland, Wales and Northern Ireland. The Civil Contingencies Act 2004 (CCA 2004) is the current legislation although the UK's impending departure from the Economic Union (EU) and the signing of the Sendai Framework are expected to lead to revisions.

The UK is susceptible to disasters arising from natural hazards and resulting from human actions and technologies; for example, chemical, biological, radiological, nuclear and explosive [CBRNE], global climate change and terrorism. The Cabinet Office maintains the UK Risk Register, the 2017 update of which identifies the following risks as being of

increasing likelihood and severity: emerging infectious diseases, cyberattack, antimicrobial resistance (AMR), and climate change. One example of a present risk in the UK is tidal flooding in the capital, London. The government's Regional Flood Risk Appraisal (2018) warns that tidal flooding from the River Thames presents a serious threat to London despite the Thames Barrier which was constructed across the 520 metre wide river to regulate tidal surges. The Barrier has been closed 185 times since becoming operational in 1982: most recently, the threat of 10m tidal flooding prompted closure in September 2019. Considered in isolation as example of disaster risk, the threat of tidal flooding in London prompts questions about provision for pets in evacuation policy and practice in the UK because among London's population of 9 million people living in a compact built environment, 61 per cent of households have dogs and 50 per cent have cats. The consequences in terms of evacuation compliance and animal and human deaths are likely to be significant.

Ignoring pet welfare in the CCA 2004 and the Sendai Framework suggests a gap in the knowledge about links between pet ownership and psychosocial resilience and about the implications of these for DRM. A humans-only approach to DRM overlooks the importance of pets to their owners and the implications for resilience when owner-pet bonds are severed. In a disaster, when a person is faced with devastation and danger their immediate priority is safety for themselves and loved ones, and this includes pets they count as part of their family. Owners do not like to be separated from their pets, and when mandatory evacuation takes place during a disaster many owners refuse to leave their homes if they cannot take their pets, making pet ownership the leading cause of failed evacuation (Chadwin, 2017). If owners are forced to leave, many return and breach cordons in efforts to reach their pets, further endangering their lives (Chadwin, *ibid*). As well as the physical dangers created by separation from their pets, owners experience distress that extends to people who know owner and pet (for example, family, friends, neighbours, other pet owners, and staff at their veterinary clinic). If a distressed or bereaved pet owner withdraws from social networks, they cease to be visible in their community and this has negative consequences for their psychosocial resilience and for the resilience of their communities.

## 2.6 Summary of the literature review

In the UK approximately half of all households include pets regarded as members of the family. The emotional bond between owners and pets can be as strong as between human loved ones, and owners feel their pets' love as unconditional and non-judgmental. Pets can function as attachment figures, providing companionship, security, comfort and confidence in daily life and through times of stress. Most owners believe their pets are good for them and,

although the literature is inconclusive, the weight of evidence strongly suggests that pets positively influence psychological wellbeing. Pet ownership supports psychosocial resilience, which can be viewed as a trait, process or outcome and involves protective factors like optimism, trust, secure attachments and emotional sustenance. These factors partly determine an individual's ability to cope, adapt and move on after personal challenges and traumatic events, and they are commonly found in an owner-pet relationship. As well as directly benefitting the owner's psychosocial resilience, pet ownership has an indirect effect whereby the presence of a pet gets strangers talking and friendships develop in the community with the formation of strong local ties and the creation of social networks among whose members there is reciprocity and trust. Pet owners have higher social capital, which is a component of community resilience and functions as the link between capacities at individual level and those at society level. Community resilience is a key focus of Disaster Risk Reduction (DRR) in the UK and in the Sendai Framework for Risk Reduction 2015-2030, to which the UK has committed. However, no provision is made in UK legislation, or in the Framework, for the protection of pets in a disaster despite pet ownership being the leading cause of evacuation failure, and even though the distress from a broken owner-pet bond affects not only the owner but also the community and, by extension, wider society.

While most people recover from trauma over time and without formal intervention, some need help. To address the needs of people affected by mental health and psychosocial issues in emergency settings such as disasters, a four-level pyramid for intervention is proposed by the Inter-Agency Standing Committee (IASC). Intervention depends on the severity of need: the basic level provides for social considerations in basic services and security. Above that, intervention is focused on strengthening community and family supports. The next level up is for people who need person-to-person, non-specialised support; and at the top of the pyramid are specialised services for the small number of people with severe need.

In summary, the literature shows that pet ownership influences resilience at individual, community and society level, and failure to provide for pet welfare in a disaster may result in consequences for psychosocial resilience at individual level with consequences at community and societal level.

## CHAPTER THREE: METHODOLOGY

### 3.1 Introduction

Chapter three describes the methodological approach and the methods applied in this study. The chosen methodology was qualitative descriptive because the study is in an emerging field of inquiry where literature is scarce, and the focus is on the individual experiences of study participants. Qualitative methodology enables exploration of the nature of the issues under scrutiny (Kumar, 2011) and descriptive research allows systematic consideration of the aspects of the situation (Cavana, Delahaye & Sekaran, 2001).

The paradigm adopted was interpretivism, since the interpretivist assumption of empathetic understanding, or *Verstehen* (Dilthey, 1883, cited in Neuman, 2006) is well suited to a study of relationships (in this case relationships between people and their pets) and the meanings people attach to these relationships. People understand reality in different ways (Cavana et al, *ibid*) constructing and reproducing their own reality and knowledge through communication and interaction (Tracy, 2013) and an interpretivist approach enables the researcher to investigate each lived experience and identify what is meaningful to the individual participant (Cavana et al, *ibid*).

A case study was used to enable pet ownership to be examined in a discrete location and the United Kingdom (UK) was selected. The rationale for choosing the UK for the study is provided in Section 3.2. Section 3.3 describes study design and the chosen sampling method. Section 3.4 describes data collection and analysis. Sections 3.5 and 3.6 concern, respectively, ethics approval and researcher reflexivity.

### 3.2 UK as case study.

The location chosen for the case study was the UK because, in common with many occidental high-income countries such as Australia and the United States (US), the UK has a high rate of pet ownership with pets widely considered part of the family. The percentage of households in each of these countries which owns pets is shown in Table 2 on the next page.

In addition to a similar level of pet ownership, UK is also susceptible to disasters arising from natural hazards and from human actions.

Table 2

*Percentages of Households with Pets in the UK, Australia and US*

Percentage of households with ...	UK	Australia	US
- a pet (of any kind)	45	62	57
- a dog	25	38	38
- a cat	17	29	25

*Note.* From (UK) People’s Dispensary for Sick Animals (PDSA) (2019); (Australia) Royal Society for the Prevention of Cruelty to Animals (RSPCA); (US) American Veterinary Medical Association (AVMA) (2016)

A case study method was used as this enables an event or phenomenon to be explained, described or explored, and complex issues to be understood, in the everyday contexts in which they occur (Crowe et al, 2011; Yin, 2009). Also, insights from this type of study have the potential to directly influence policy, procedures and future research (Merriam, 2001) and the prospect of future research on links between pet ownership and psychosocial resilience is of interest to the researcher.

### 3.3 Study design and sampling method

Participants for the study were recruited using a purposive sampling strategy as this was suited to the task of obtaining specific information, opinions and experience from the limited number of people able to provide this (Cavana et al, 2001). Patton (1990) contends that purposive sampling generates information-rich cases for study in depth. Pet owners were pivotal to the study, and the inclusion of the practitioners was important so that their professional experience and observations during large-scale emergencies could inform the study of links between pets, pet ownership and psychosocial resilience. The data sought could only reasonably be held by pet owners and practitioners who engage with pet owners in the context of dealing with emergencies and therefore these groups were targeted specifically and exclusively.

Alongside the purposive sampling strategy, a convenience sampling approach was used as this enables the best quality data to be obtained from the low number of cases to be sampled (Patton, *ibid*); also, the researcher was resident in the UK for the data collection phase of the study and exploited the opportunity of being in the UK to recruit and study local participants easily and at low cost (Gravetter and Forzano, 2017).

Semi-structured interviews were conducted with participants individually. This data-collection method was selected because relationships are complex and, according to Cavana et al

(2001), semi-structured interviews generate rich data and facilitate the exploration of complex issues. Also, Neuman (ibid) suggests that the combination of an unstructured (open) primary question and subsequent planned questions on defined topics allows opinions and beliefs to be captured and this was important to the study's exploration of thoughts, feelings and behaviours related to pet ownership. Furthermore, as well as being appropriate to both groups of participants (that is, pet owners and practitioners), the semi-structured interview format was suited to the researcher's interview skills (Cavana et al, ibid) including her ability to maintain control of the topic, direction and pace as is essential to the process (Neuman, ibid).

### 3.4 Data collection and analysis

#### 3.4.1 Data collection

Data was collected in interviews held in the UK in November and December 2018. As listed in Table 3 below, participants were five pet owners and three practitioners comprising an emergency manager, an emergency services officer who specialises in technical animal rescues, and a local councillor. The pet owners all lived in a small village on the edge of the New Forest in the south of England, and the professionals work in council and the fire and rescue service covering the geographic location in which the pet owners live.

Table 3

#### *Study Participants*

Participants	Nr.	Gender F/M	Age	Lived alone	Live with partner	Lived with family
Pet owners	5	F (all)	30s – 60s	2	1	2
Practitioners						
▪ Emergency manager	1	F	30s			
▪ Technical animal rescue specialist	1	M	30s			
▪ Local councillor	1	M	70s			

*Note.* Author's own, 2019.

The data collection process comprised preparing documents to attract, recruit and gain the informed consent of participants, and communicating with participants. To attract pet owners, documentation was prepared as described below in 3.5 Ethics. Respondents to the advertisement were all pet owners with an estimated age range of 30s-60s. All were female; no responses were received from males. However, subsequently during interviews participants spoke for themselves (using 'I') and expressed views jointly held with their

partners (using 'we'). Responses to the advertisement were acknowledged by email and/or phone within 24 hours and copies of the study information sheet and consent form were attached to that email. Initial contact with the practitioners was through enquiry to the public website of their employer, except for the technical animal rescue specialist who was known to the researcher and had previously indicated an interest in the study. Respondents who subsequently agreed to participate were then screened by phone to confirm they satisfied the inclusion criteria which were, for pet owners, adult (over 18) and currently the owner of a pet; and, for practitioners at least five years' experience in emergency management or animal rescue. The decision to require five years' experience was based on the low number of large-scale emergency events that had occurred in the UK in the period 2014-2019 and the perceived likelihood of practitioners' involvement in these. Two out of the three practitioners were also pet owners and so, to counter bias in this respect, the need to express a professional rather than a pet-owner perspective was emphasized during the initial conversation. Interviews were then arranged with prospective participants who met the criteria; people who opted to not proceed or withdrew after consenting were thanked for their interest and not pursued. Three people decided not to participate after reading the Information Sheet, citing, respectively, low interest, an uncle in the final days of terminal cancer, and the recent death of a brother.

Each interview with a pet owner took approximately 45 minutes and commenced with questions about the person's relationship with their pet and the effects of this on their normal daily life. Later in the interview participants were asked to spontaneously respond to disaster scenarios described by the researcher and hypothetically involving the pet owner, their family and their pet. Each interview with a practitioner lasted approximately one hour and used indicative questions related to their involvement with pets in emergency situations. One interview was conducted by phone due to the interviewee's poor health and house-bound status; all other interviews were conducted in person so that, in addition to the interview being audio recorded for later analysis, the researcher could witness and make note of participants' emotions as they spoke, to further enrich the data collected and facilitate the subsequent analysis of latent as well as manifest data.

### 3.4.2 Data analysis

Data was analysed to identify, code and categorise patterns in the data (Patton, 1990) with the aim of identifying 'recurrent behaviours, objects, phrases or ideas' (Neuman, 2006) (p. 467). Thematic analysis was then conducted. Boyatzis (1998) observes that as well as

minimally organizing data sets in rich detail, thematic analysis often goes further and interprets various aspects of the research topic. The purpose for conducting the analysis this way was to enable comparison between interview data and the findings of the literature review.

The initial approach to coding was deductive because themes had been suggested by previous research. Data was coded holistically to five broad categories comprising the five component parts of the study's focus: owner-pet attachment; effects of pet ownership on health; psychosocial resilience; social capital, and pets in the context of DRM. Provisional codes were then developed within each of these five categories to enable identification of similar data. Data was first coded using a manual decision support tool (table) developed by the researcher using MicroSoft Word and using a RADaR (Rigorous and Accelerated Data Reduction) technique to quickly and easily organize, code and analyse patterns in the data (Watkins, 2017). In line with the observation by Minichiello, Aroni, Timewell and Alexander (1990) that data exists on at least two levels, coding included data that was manifest (in other words, data was present in the form of quotes from participants) and latent (that is, the underlying symbolism of participants' responses). Inductive coding was also used because the study was in an emerging field and was exploratory.

As themes were suggested by the data, they were grouped by internal homogeneity (the extent to which there is a meaningful connection between them) and external heterogeneity (the extent to which difference between the themes were clear) (Guba, 1978). The constant comparative method was used, whereby new themes are uncovered incrementally as the researcher reads the raw data (Cavana et al, 2001). The researcher avoids using the phrase 'emerging' in relation to themes, agreeing with Ely, Vinz, Downing, and Anzul (1997), that emerging could be misinterpreted as meaning that themes reside in the data and emerge if the researcher looks hard enough, whereas themes could only reside in the researcher's head as a result of the data being thought about, with links being created in consequence.

After grouping the themes were examined for categories and concepts that cluster together, and the rules for including them were checked for internal homogeneity and external heterogeneity. In line with Neuman's (1997) suggestion that negative evidence should also be identified, the data was read again, this time to specifically check for the absence of evidence (one example being comments about, or implying, a negative influence of a pet on the owner's wellbeing). Finally, the findings were considered in total before being written up.

### 3.5 Ethics

Because the study involved human subjects, ethics approval was sought and Ethics application number 18/386 was approved on 7 November 2018, before the study commenced. Since the development of the Nuremberg Code, drafted in 1947 to protect human rights in research, individuals and institutions conducting research must protect subjects' rights by ensuring that anyone who takes part does so of their own free will, knowing what is involved in the study including any risks; that subjects can withdraw consent and leave the study at any time; and that subjects are protected from harm, suffering or death (Fouka & Mantzourou, 2011). The granting of ethics approval for this study confirmed that the proposed research complied with local and international codes of ethics and would be conducted with the informed consent of participants to whom no harm would be done and whose anonymity, confidentiality and privacy would be respected.

Care was taken to ensure that participants were treated ethically. Documentation to support the data collection process was agreed in the ethics approval process prior to the commencement of the study and, for pet owners, comprised an advertisement, information sheet, consent form and indicative questions. The advertisement was printed in colour to attract readers' attention and, with the explicit verbal agreement of relevant premises managers and retailers, copies were displayed prominently on notice boards in local shops and the community hub. In each location colour copies of the advertisement were provided to enable prospective participants to each take a copy to read at leisure. For the practitioners, documentation comprised the information sheet, consent form and indicative questions. The indicative questions for each interviewee group were printed for the researcher's use during interview to ensure consistency among interviews.

Participants had been made aware through the Participant Information Sheet that if the interview brought up feelings related to pet loss and that they would like to talk about, help was available through 'Blue Cross Volunteers and The Ralph Site', and 'The Samaritans'. Participants were reminded at the conclusion of each interview that this help was available if needed.

Following each interview the researcher rang the interviewee to thank them for participating in the study and to provide an opportunity for them to raise any questions or concerns about the interview process or content. None was raised. Interview transcriptions were later emailed to interviewees with the request that they confirm the accuracy of transcription or advise corrections or comments, and all were returned approved and without request for amendment.

### 3.6 Researcher reflexivity

Reflexivity enables the researcher to acknowledge how the researcher process has changed them and how these changes have affected the research process (Palaganas, Caricativo, Sanchez & Molintas (2017). Reflexivity requires self-awareness (Lambert, Jomeen & McSherry, 2010) and the researcher demonstrated this by continuously challenging her own thinking, as informally documented throughout the study, to understand the filters through which she was working (Lather, 2004) and from this to improve the quality of her research and develop as a researcher.

## CHAPTER FOUR: FINDINGS

### 4.1 Introduction

The study's aim was to explore the influence of pet ownership on psychosocial resilience in the face of disaster. To conduct the exploration it was important to first understand participants' normal (in other words pre-disaster) daily lives with their pets. Participants were interviewed about their relationships with their pets, and the effects of pet ownership on their health, wellbeing and social capital. After that, and to determine participants' likely compliance with evacuation orders in a disaster, three disaster evacuation scenarios were described and participants were asked to give a spontaneous response indicating what they would do in the circumstances. Chapter four presents the findings: Section 4.2 concerns the owner-pet connection; Section 4.3 pet ownership and health and wellbeing; and Section 4.4 pet ownership and social capital. Section 4.5 presents the findings about pet owners' likely compliance in evacuations.

### 4.2 The owner-pet connection

To explore the owner-pet relationship, participants were asked to describe the connection between themselves and their pet. To provide context, Table 4 show pet ownership per participants at the time of interview, listing the species, number owned and the length of the relationship.

Table 4

*Pet Ownership per Participant*

<b>Participant</b>	<b>Pets owned: Species / number</b>	<b>Time owned to date</b>
PO1	Rabbit / 1 Aquarium fish / not stated	8 weeks (rabbit) not stated (fish)
PO2	Dog /- 1	2.5 years (dog)
PO3	Dog / 1 Cats / 3	Since puppy stage (dog) 5+ years (cats)
PO4	Cats / 2	17.5 years (both cats)
PO5	Dog / 1	6.5 years (dog)

*Note.* Participants' pets are listed per species owned and the duration of ownership is shown. Author's own, 2019

All participants felt a strong emotional connection to their pets, irrespective of length of ownership, and used the terms 'affection', 'love' and 'absolute joy' to describe their feelings. All participants believed that the pets loved them in return; furthermore, the pets' love was

experienced as unconditional and non-judgmental. While the strength of feeling appeared similar to that between human loved one, participants clearly valued the comparatively undemanding nature of the pet's love compared to that between connected humans:

*"I talked to my dog as therapy... you kind of have that little bit of release where you don't get any nonsense back."* (PO1)

*"I think it's having a living creature who's pleased to see you ... always happy to see you..."* (PO3)

*"She's the first thing ... when I walk in, my poor husband knows, she's the first one that gets cuddles out of me. She's just everything ... she's not going to ask me how my day is, she's not going to ask me for a cup of tea, she's not going to ask for anything, she's just going to let me give her a big old snuggle."* (PO5)

Participants counted pets as family members and wherever possible included their pets in family activities:

*"The whole family's involved, you know ... if we go anywhere, the dogs normally come ... you don't see her as a dog sometimes, just see her as a member, a member of the family..."* (PO2)

Family dynamics were altered by the pet including the allocation of roles, by the pet, related to the pet's care:

*"...if she's hurt or wants food or anything, she'll always come to me ... but my husband, he's her playmate, he's her friend."* (PO2)

Whether participants lived alone or with others, their pets provided companionship. Although no participant used the word 'lonely' to describe their feelings, this sentiment was suggested by interview comments:

*"You don't get pets because they're animals, you get them because you want companionship."* (PO1)

*"...someone to talk to and you don't feel alone, because I'm retired and I'm alone in the house; [pet] is there, she's my companion and that's what we've got."* (PO2)

Participants described the owner-pet relationship as co-dependent, with pets reliant on owners for food and care, and owners needing pets for an emotional reason. Although the emotional need was not always articulated, one participant explained that she needed her pets as much as they needed her:

*"I'd say 'for company' but it's not just that – obviously my husband is in the house as well, but it's ... the house is empty and dead if they're not there."* (PO4)

Feeling needed was a very strong recurring theme with participants relishing their pets' dependency as well as recognising their role as the pets' caregivers. One described their pet as *"... the reason you get up ... the structure of the day."* (PO2)

while another commented:

*“... if I’m feeling a bit peeved about something during the day or a bit down, I come home and rather than having that spare time to dwell on it, I won’t dwell on it, I’ll remind myself I’m needed: [pet] needs me.”* (PO1)

Pets also provided protection from physical threat and low mood:

*“She was there ... when I broke up with my partner ... she slept on the floor when I slept in the spare room, she protected me and I think we got a real bond then.”* (PO5)

Participants talked to their pets and strongly believed that their pets understood that talking was a connection between them, even though the pets did not understand the words being spoken. Also, while the topics spoken about were mundane chitchat, talking to their pets satisfied two needs for participants: firstly, the need to make contact or to communicate with another living creature who paid attention and showed they were listening to them; and secondly, the owner’s wish to satisfy a pet’s perceived need for contact or communication and to feel good about having achieved this. One participant described thus her communication with her cat:

*“...we’ll have a conversation where I’ll say hello, she’ll miaow, I’ll say ‘What’s the matter?’ and she’ll miaow again, and you know we have this silly conversation, and I know it’s not a conversation but it’s a connection still, on some level.”* (PO4)

Remarkable among the results and interviews was that no participant expressed a negative observation about their pet’s character or habits. Inferred from this is that pet owners were tolerant of their pets’ behaviours and foibles.

Practitioners’ observations on the owner-pet connection concurred with those of participants. Pets were “another family member ... people joke sometimes that they even come above other family members in households” (Practitioner: emergency management).

#### 4.3 Pet ownership and health and wellbeing

To explore links between pet ownership and health and wellbeing, participants were asked first about their levels of physically activity before and since acquiring their pet, and then about how living with their pets affected their general wellbeing. For ethical reasons no questions were asked about participants’ states of health or medical conditions.

Participants’ levels of physical activity were generally lower than before acquiring the pet or had not changed. Where the level of physical activity was lower, the reason was related not to the acquisition of the pet but to changes in employment status (for example, from employed to retired). While one participant had become more active since getting her pet,

this was attributable as much to her wanting time alone, away from the demands of her young family, as to the need for the pet to have a walk.

The effects of pet ownership on participants' wellbeing were, by comparison, remarkably positive. Participants felt their pets provided a positive, calming influence and this positively affected their wellbeing, with pets attributed with giving their owners '*more focus*' (PO1), '*keeping me sane*' (PO2), and providing a '*...sort of spiritual experience*'. (PO4)

When asked their reactions to other owners' pet loss, most participants expressed empathy for the owner irrespective of neighbourly relations although one participant qualified her response by saying she would only feel sad if she liked the owner. If a local pet was reported missing, all participants viewed the situation as seriously as if the missing pet were a human family member and most proactively involved themselves with physical and online searches:

*"... you can see how upset they are and you know how it feels, losing half the family."*  
(PO4)

While participants all offered verbal support to console grieving owners, one also supported a dying pet:

*"I went round ... and [husband], when he had his Husky and another lady up the road had a Greyhound that was dying, he took his Husky up, in the garden, to have a last play. I think everyone feels it.... It's empathy, having been through losing a pet, absolutely empathy. It's horrible to go through."* (PO5)

The findings about the influence of participants' pets on their physical and psychological health were positive. Also, and perhaps because of this, participants empathised with other pet owners in the case of pet loss, and were prepared to help where a pet went missing. This latter is also inferred as indicative of bonding social capital among pet owners, which is addressed next.

Practitioners' observations on pet ownership and wellbeing agreed with those of participants, acknowledging a correlation between having a pet and physical and mental wellbeing.

*"If someone's well mentally, that may encourage them to be all-round healthier and therefore slightly more active as well. So I imagine there is a correlation between all of them – and a positive correlation, as well."* (Practitioner: emergency management)

*"It's very challenging, this type of incident, because of the emotions involved. People throw caution to the wind – and people get irate if they perceive you're not doing something."* (Practitioner: technical animal rescue specialist)

Practitioners noted strong empathy among pet owners for others' pet loss. One observed there had been a cultural shift towards a strong desire to help animals in distress; for

example, Council had received a high number of calls concerning the plight of a herd of pet horses stranded in floodwater.

#### 4.4 Pet ownership and social capital

To investigate the influence of pet ownership on social capital, participants were asked how having a pet had affected their engagement with other people in the community, including the extent to which they exchanged favours with other pet owners, and their perceptions of trustworthiness in the hypothetical scenario of a stranger seen walking in their neighbourhood without/with a pet.

Engagement with other people while out walking was far more likely if one person had a pet with them. All participants were far more likely to be spoken to when accompanied by their own pet, and all were more inclined to initiate conversation if the other person had a pet with them. From participants' perspectives, seeing a person with a pet suggested that the person was local, a member of the community and, by extension, was probably trustworthy. (Perceptions of trustworthiness are discussed separately below.) Apart from an everyday 'Good morning' while passing, initial comments between strangers were in all instances addressed to the pet or concerned the pet. All participants were emphatic that many of their local friendships had developed only because the presence of a pet had sparked an initial conversation; and while some participants were sociable generally and enjoyed admiring others' pets, other participants used the opportunity presented by the presence of a pet to speak to a person they wanted to get to know, as a socially acceptable tactic to make contact and develop friendships:

*"... we knew she was getting [dog] because she kept coming out for [participant's dog] – 'course now .. now we've become friends."* (PO2)

*"If they've got a pet I think is considerably cute I'll use that as an excuse to say hello... That's how you have a non-intimate conversation with somebody, until you know them..."* (PO1)

*"I'll probably talk to the animal and then talk to the human. You go and pet the animal, pat the horse, stroke the cat, but that invariably strikes up a conversation with the owner."* (PO5)

*"Where I live, I'm very lucky, people are very friendly, they'll always say 'Good morning'... but when you've got a dog they actually stop and they talk, and if they've got dogs you talk about the dogs, and that's how you get your friendship – that's my belief anyway."* (PO2)

To explore the level of reciprocity that was attributable to having a pet, participants were asked whether they and their neighbours helped each other out, generally, and with pet-

related matters. The extent of tit-for-tat was significant and included pet feeding, walking, socialising, and letting a pet into/out of the house while the owner was at work. In some instances the exchange of favours extended beyond pet care:

*“Dog-related favours mainly but the same person has just ended up with a baby in the house ... so I can see me reciprocating the dog walking with some baby care.”* (PO5)

Participants were asked their perceptions of the trustworthiness of a stranger approaching them with a dog compared to a stranger walking alone. The person with a dog was perceived as probably trustworthy whereas the person walking alone was viewed as suspicious and prompted caution:

*“I’ve had that, I’ve had it in the woods, with strange men, when you immediately think ‘What are they doing in here? They haven’t got a dog: what are they doing in here?’ A woman – I wouldn’t be as worried, with a woman, I don’t see them as much of a threat as a man. A man with a dog, I’d say they’re trustworthy because they’re in the woods with a purpose.”* (PO5)

*“Probably trustworthy...I don’t know what it is, but if you see somebody with a pet and you’re walking along, you know ... I think with me it’s a gut feeling, what they’re like with that dog...If they’re yanking and pulling them, then no ... if they’re sort of, like, ‘Yeah, this is Fred...’ and all the rest of it, you’ve got that out of the interaction, you get a kind of feeling from that.”* (PO2)

In the context of disaster, the way in which people engage and develop social capital differs from in normal times; for example, members of an affected community may act collaboratively in order to cope and recover after the disaster (Wang & Ganapati, 2018). Commenting on the importance of public agencies supporting the development of social capital in a disaster setting, Wang & Ganapati (ibid) caution that in light of the many benefits of social capital to all stages of disaster, social capital must be consciously built up before and after a disaster. Among several suggestions as to how social capital may be developed, Wang & Ganapati (ibid) suggest face-to-face interaction. This suggests that social interactions of pet owners out and about in the community may be a factor in disaster resilience, by supporting the development of social capital pre-disaster, providing familiar support during the disaster and engaging strangers through meetings with pets, during the recovery phase.

Practitioners’ observations on social capital mainly concerned the extent to which people had connections. Generally, members of the public had social networks able to be contacted during emergency situations.

#### 4.5 Disasters and evacuation of pets

To determine the likelihood of evacuation compliance in a disaster, three scenarios were described and participants were asked to state, without deliberating on the question, what they would do in the situation. In real life, all participants lived on the edge of a forest and heathland which had recently (July 2018) experienced a significant fire. Fighting the fire had involved multiple tenders and over 100 firefighters, and the blaze had been difficult to control. At the time of the fire, all participants had felt anxious about the rapidly approaching flames and smoke; however, none had thought about what they could, should and/or would do in the event of an evacuation becoming necessary.

##### 4.5.1 The evacuation scenarios

Scenario 1: A fire is approaching where you live and precautionary evacuation is advised

Findings: All participants would follow the advice of the emergency services, and all would make private arrangements to stay with friends or family.

Scenario 2: The fire is closer to where you live and evacuation is now mandatory. Pets can be transported to a local shelter that accepts pets.

Findings: All participants would comply and evacuate with their pets to a pet-friendly shelter.

Scenario 3: The fire is closer to where you live and evacuation is now mandatory. However, pets cannot be transported or sheltered and must be left at home with food and water. The emergency services will rescue pets later *if* they have the resources.

Findings (i): One participant would comply:

*“Well, yes, your head would tell you that yes, you’ve got to do what they say and that...Yes, you’d have to do it and I personally would, you know, send out positive thoughts and prayers and hope they’d be rescued. I wouldn’t be silly and stay put. You’d have to do it but I’d be devastated. But human life is too important, I suppose.”*  
(PO4)

This participant’s response was spoken with evident anxiety and her demeanour indicated great reluctance, distress and dread at the thought of the consequences of leaving the pet. This response is suggestive of strong attachment to the pet, in which case separation and loss, particularly through abandonment, could give rise to guilt as well as distress and have negative consequences for wellbeing and mental health.

Findings (ii) All other participants would refuse to leave without their pets:

*‘I’d say ‘Fine, I’ll hold her, you haven’t got the resources, I’ll just hold her the whole time and if she runs out of my arms I’ve done my best – but I’m not leaving her.’ I see*

*it as you wouldn't leave a human: why would you leave an animal? ... you wouldn't leave the human being that you're dating or married to, in the house, you know, because it's easier...". (PO1)*

*"I would not be happy! I would probably ignore them and stay with her." (PO2)*

*"I don't think I could leave her. I don't know what I'd do – I honestly don't think I could shut the door with her little face there." (PO5)*

*"Reaction?! PANIC!! They'd have to carry me out kicking and screaming. We'd find a way." (PO3)*

The strength of feeling this question provoked is indicated by the final response, delivered with evident horror. The mere thought of abandoning their pets quite clearly caused participants to feel shocked and anxious, and their reluctance to be separated from their pets in a disaster evacuation situation supports the findings of earlier studies that pet ownership is the leading cause of evacuation failure (Chadwin, 2017; Heath Kass and Beck, 2001).

Practitioners' views on evacuations related to the likelihood of pet owners complying with evacuation orders and were entirely in line with participants' responses to the scenarios described to them. Pet owners would move out with their pets if a precautionary evacuation was advised and likely evacuate with their pets if transportation and shelter for the pets was provided; however, there would be a high level of non-compliance if no provision was made for pets. In other words, many among the 50 per cent of households owning pets would refuse to evacuate if they could not take their pets with them. The practitioners were conscious of the ramifications of this for DRM and for community resilience.

#### 4.6 Summary of key findings

The key findings are summarised in Table 5 in relation to four themes: (1) the owner-pet relationship; (2) how pet ownership affected levels of physical activity and wellbeing; (3) how pet ownership and the presence of a pet influence social capital; and (4) Pet-owner compliance with evacuation order and readiness to evacuate their pet(s) in a disaster scenario.

Table 5

## Key findings

	<b>THEMES</b>	<b>KEY FINDINGS</b>
1	The owner-pet relationship	<ul style="list-style-type: none"> <li>▪ <i>Participants love their pets with a strength of feeling the same as between humans</i></li> <li>▪ <i>Pets are part of the family</i></li> <li>▪ <i>Pets provide companionship and make owners feel needed</i></li> </ul>
2	How pet ownership affected levels of physical activity and wellbeing	<ul style="list-style-type: none"> <li>▪ <i>Acquiring a pet does not necessarily result in increased physical activity for the owner</i></li> <li>▪ <i>Having a pet greatly enhances feelings of wellbeing</i></li> </ul>
3	How pet ownership and the presence of a pet influence social capital	<ul style="list-style-type: none"> <li>▪ <i>The presence of a pet offers a reason to initiate conversation with a stranger during a spontaneous encounter; also</i></li> <li>▪ <i>talking to/about a pet is sometimes a deliberate tactic used with the intention of making friends with the owner</i></li> <li>▪ <i>Pet owners make friends through their pets and develop strong local ties through these friendships</i></li> <li>▪ <i>Pet owners exchange pet-related favours and trust each other with the care of beloved pets</i></li> <li>▪ <i>A person (particularly a male) walking with their pet is perceived as probably trustworthy, whereas a person walking alone is viewed with caution or suspicion</i></li> </ul>
4	Pet-owner compliance with evacuation orders and readiness to evacuate their pet(s)	<p><i>Evacuation scenarios</i></p> <ol style="list-style-type: none"> <li>1. <i>A precautionary evacuation: All participants would follow the advice and all would make private arrangements for accommodation</i></li> <li>2. <i>A mandatory evacuation where pets were able to be transported and sheltered: All participants would comply</i></li> <li>3. <i>A mandatory evacuation where pets were not able to be transported or sheltered: Only one participant would comply. All other participants would fail to comply and would remain with their pets</i></li> </ol> <p><i>Readiness to evacuate pets:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Preparedness – none of the participants had given thought to preparing their pet for emergency situations or disasters</i></li> <li>▪ <i>When asked what they would need to think about, participants suggested only a carrier/leash, blanket, food and toys. None referred to pet identification, pet vaccination or pet medical conditions</i></li> </ul>

Note. Author's own, 2019

These findings, while not new, emphasize the role and importance of pets to their owners and highlight aspects for resilience and risk in relation to DRM.

## CHAPTER FIVE: DISCUSSION

### 5.1 Introduction

The relationship between pet owners and their pets positively influences owners' health, wellbeing and social capital. Owners who feel healthy and have good wellbeing are inclined to go out and engage with neighbours and strangers in their communities. They participate in social networks with people they trust and with whom they exchange favours, thereby developing friendships, local ties and social capital. These factors, in addition to supporting individual resilience, positively influence the resilience of the community through the existence of (overlapping) social networks of people who know, trust and help each other. As well as positively contributing to the community in normal times, strong friendships, local ties and social capital position the community to better cope, adjust and move forwards after a disaster (Moore, Chandra & Feeney (2013)). Pet ownership therefore influences community resilience. Despite this, however, and while community resilience is a key focus of Disaster Risk Management (DRM) and the Sendai Framework for Risk Reduction 2015-2030 to which the UK has committed, there is almost no literature on the links between pet ownership and community resilience. Also, while studies have been conducted on links between pet ownership and, variously, health and wellbeing, social capital, and psychosocial resilience, there is a paucity of literature on connections among these in the context of disaster. The objectives of the current study were to explore the strengths and weaknesses of pet ownership in the face of disasters and identify implications of pet ownership for policy and practices geared towards DRM. Chapter five summarises the study's findings set out in chapter four, discusses them in relation to the existing literature.

The framework for discussion is presented on the next page in Figure 8. In the author's (2019) framework, pet ownership influences health and wellbeing and social capital and these have an effect on individual psychosocial resilience which, in turn, exerts an influence on health and wellbeing. Individual resilience has a consequential effect, through the behaviours of the individual, on community resilience and this has a ripple effect to wider society. When disaster strikes the impact on psychosocial resilience is experienced at individual, community and societal level. Sections 5.2, 5.3 and 5.4 discuss, respectively, the owner-pet relationship, the effects of this on health and wellbeing, and on social capital. Section 5.5 discusses disaster response and pet evacuations. Section 5.6 pet ownership and psychosocial resilience, and Section 5.7 considers implications of the findings for DRM policy and practice. Section 5.8 sets out the limitations of the study and Section 5.9 makes recommendations for further research. Section 5.10 concludes the study.

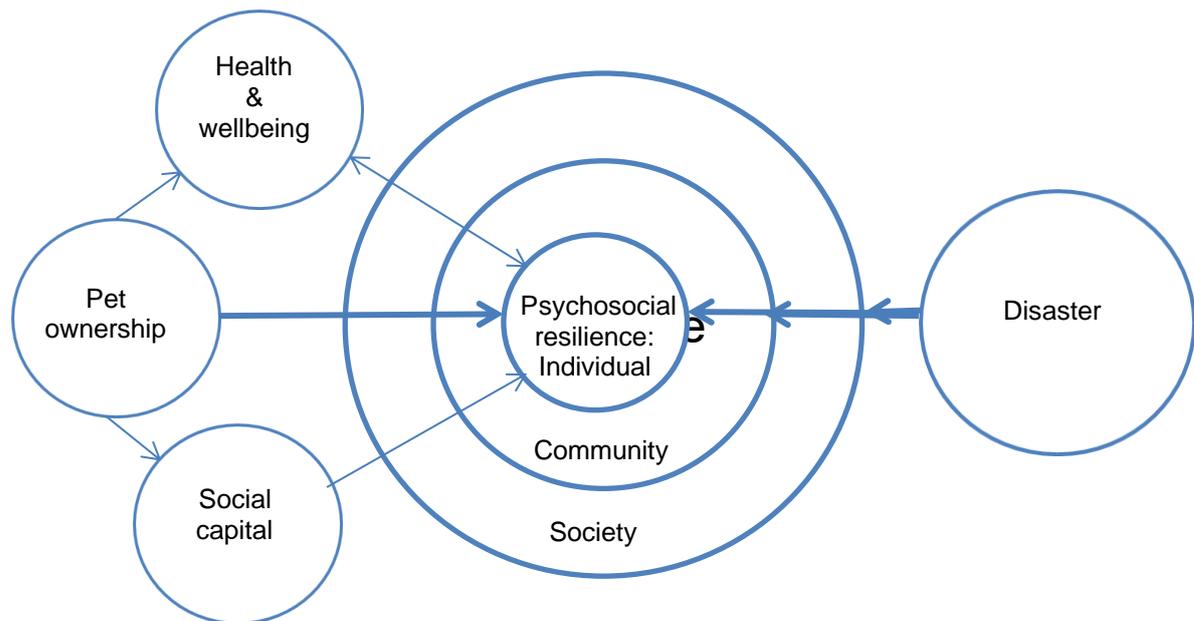


Figure 8: Links between pet ownership and psychosocial resilience: A framework.  
 Author's own, 2019

## 5.2 The owner-pet relationship

All participants described a bond with their pets that seemed to be as strong as to their human families, and this supports Barker and Barker's (1988) contention that the owner-pet relationship may be as close as between human loved ones. Participants thought of and treated their pets as members of their family, a finding that is consistent with Walsh (2009a, 2009b); Cohen (2002), and Carlisle-Frank & Frank (2006). The pets were dependents, although none was described or treated as a child-substitute, and participants had assumed a quasiparental role in taking on the responsibility of housing and caring for them. To some extent this supports Herzog's (2011) proposal that acquiring a pet results from a "misfiring of parental instincts" (p. 236) although a more fundamental driver for having a pet is suggested by Wilson's (1993) *biophilia* hypothesis that humans have a fundamental, genetically-based human need and inclination to affiliate with other life forms, and that emotional reactions towards animals are shaped through culture and learning. The findings support the *biophilia* hypothesis in as much as participants' backgrounds and experiences with pets had instilled a love of animals and a desire to nurture them. Participants satisfied a need to nurture by taking responsibility for a young pet toward whom they channelled familial love, and the young animals looked to them for care and affection. Participants' desires to nurture aligns with Herzog's (ibid) finding that, when talking about what they get from their relationship with a pet, people typically mention the need to care for another creature. The intrinsic reward that participants receive from nurturing is suggested by participants' comments that 'feeling

needed' constituting a significant element of their relationships with their pets and positively influenced wellbeing. Feeling needed was a very strong recurring theme and was interpreted as inward-facing nurturing (resulting in the participant feeling good) as opposed to outward-facing nurturing (resulting in the pet feeling good) and this prompts the question as to whether people acquire pets to nurture because they feel a need to be nurtured themselves. If this is the case, then by extension having a pet must influence wellbeing.

All participants regarded their pets as members of the family and loved them, and all believed their pets loved them in return. The pets' was felt as constant and accepting, and participants clearly enjoyed relationships with their pets that they felt were undemanding compared to the daily toil of domestic life. Participants' enthusiastic expressions of love for their pets, when compared to their – at times, obviously dutiful – references to loving their families, support Barker and Barker's (ibid) contention that over one third of dog owners feel closer to their dogs than to members of their human family. The reliable and uncomplicated nature of the relationship with the pet was attractive to all participants, and this agrees with Zilcha-Mano, Mikulincer and Shaver's (2011) findings about what draws people to pets.

When participants experienced tough times they sought out their pets as sources of protection, encouragement and comfort. The pets were *always* happy to see them, made them feel secure and were a calming presence when participants felt stressed. These attributes help explain why all participants developed attachment bonds with their pets (Mikulincer & Shaver, 2007). Although attachment theory is more commonly discussed in relation to human relationships, the current study's findings agree with Zilcha-Mano, Mikulincer & Shaver's (2011) finding that pets can serve as attachment figures, and this is evidenced by participants choosing to be near their pets when feeling stressed or in need of support or encouragement, or when seeking a secure base from which to take perceived risks (such as engaging in conversation with strangers). Participants did not like being away from their pets and described feeling mild unease or distress at being apart. Levinson (1969) finds that a pet is a natural object of attachment, being an available, active, mobile and affectionate being, and this is supported by the current study's findings and exemplified by one participant's response to being asked to describe her connection with her pet: after pausing for thought she said emphatically 'Attached'.

The findings suggest that in a disaster the company and affection of a pet would comfort and support the owner, thereby reducing the stress of the situation. Also, concern for the pet's welfare amid devastation would likely intensify the owner's focus on assessing their predicament and options for survival. Being able to remain relatively calm amid chaos, and

rapidly evaluate and plan action, could be the difference between life and death in a disaster. Darroch and Adamson (2016) suggest that during and after a disaster, pet attachment can increase resiliency and aid recovery from grief. The findings therefore suggest that pet attachment serves as a protective factor in disasters. Contradictorily, the same findings suggest that pet attachment could at the same time constitute risk: if owner and pet were separated in the chaos of a disaster, not only would the owner lose the physical protection and emotional support of the pet's presence but they would also experience the distress of separation. Anxiety about the pet's welfare may negatively impact the owner's ability to focus on assessing their situation and result in them taking risks to locate or retrieve a missing or abandoned pet, and risky rescue attempts endanger lives (Thompson, 2013). The findings agree with Zottarelli's (2010) assertion that there are significant human health and safety consequences to pet loss, and with Day's (2017) contention that there is a strong case for pet ownership being evaluated as a health and safety risk by emergency managers. Inferred from this is that keeping owner and pet together in a disaster would both provide psychological support and mitigate the risk associated with attempted pet rescues by pet owners.

In the current study, pets were described as providing companionship as well as support. As some participants lived with a spouse or family it appears that the type of companionship sought went beyond simply not being alone. There was no suggestion from participants that their domestic relationships were other than harmonious and therefore references to the companionship provided by their pets prompt the question as to whether loneliness (either because of living alone or from feeling alone in the company of others) is a further driver for acquiring a pet. It is seen as probable that some participants acquired pets as a perceived solution for loneliness because a pet fills the role of companion and audience and, as observed by Karen (1994), a relationship with a non-human allows a wide range of behaviours and actions. In this context and viewed against the framework of the IASC intervention pyramid for mental health support, keeping owner and pet together in a disaster would equate to an intervention at base level (basic services) and at the second tier (strengthening community and family supports), and would contribute to safeguarding the owner's mental health.

### 5.3 The influence of pets on health and wellbeing

Participants' levels of physical activity had changed little since the pets had been acquired, and this was initially somewhat surprising given that some of the pets were dogs that required walking several times a day. However, on review it was clear that the dog-owning

participants had been regular walkers before acquiring their pets. In a disaster, walking a dog would not only provide exercise for owner and pet but would also support the mental health of people who saw them out together: dog walking is generally conducted at a slow pace with frequent pauses for the dog to sniff, relieve itself and mark its territory. Observing these everyday behaviours would likely inject a sense of normality into an uncertain and stressful situation. According to Wang and Ganapati (2018), face-to-face interaction is among the ways that social capital is built during a disaster and from this it is inferred that even if conversation were solely about the dogs, owners (or people temporarily caring for lost dogs) would form social connections and networks, and trust and reciprocity would likely be created to the benefit of those in the new networks. By extension, during the recovery phase, the social networks thus formed could continue and be broadened by the inclusion of strangers (of all ages, with or without dogs of their own) to jointly walk dogs and talk, thereby supporting individual psychosocial resilience and (re) building the community. This approach would align to the second tier of the IASC intervention pyramid by addressing the psychological need for connection with other people, and would also facilitate the growth of social capital among people whose former networks may have ceased to exist in the disaster.

In the current study all participants were convinced that their pets had a positive effect on their wellbeing. This belief is congruent with Allen's (2003) finding that people firmly believe that their pets are good for them. While scientific measurement of participants' health was beyond the scope of the current study, there was no evidence to support the findings of negative associations between pets and health (for example, Parslow et al, 2005; Amiot, Bastian & Martens, 2016; and McNicholas et al, 2005). Nor was there direct evidence in the findings to support previous studies' contention that, compared to people without pets, those with pets suffer more from psychological problems (Parslow et al, *ibid*; Koivusilta and Ojanlatva, 2006). However, and while research into links between pet ownership and psychopathy is beyond the scope of this study, it seems reasonable to speculate that in light of participants placing emphasis on feeling needed by their pets and saying their pets calmed them, gave them focus, kept them sane and provided an almost spiritual experience, there could be a link between pet ownership and psychological wellbeing that might be explained by psychopathy. This is conjecture and the researcher is conscious of Herzog's (*ibid*) contention that the idea that pets improve health is not proven, and of the potential for skewed findings in the current study due to its small sample size and subjective responses of participants. Nonetheless, participants all believed that their pets were good for them and attributed their feelings of wellbeing to their pets. Viewed as cause and effect, these findings tend to support Lipton's (2005) proposal that belief affects biology; in other words, when a

person believes that something is good for them, the belief in itself sparks changes at cellular level which result in *de facto* benefits to health. The findings of the current study are in line with the emerging evidence cited by Amiot, Bastian and Martens (2016) which suggests a varied and complex connection between animals and humans.

In summary, pet owners believe that their pets positively influence their wellbeing and as a result they feel inclined to engage with people in their neighbourhood, thereby reinforcing acquaintanceships and making connections with strangers. The creation of social networks has implications for the community and its resilience. Section 5.4 discusses the link between pet ownership and social capital.

#### 5.4 The influence of pet ownership on social capital

All participants were active in their communities and had high social capital through good neighbourly relationships where people helped each other. All participants had strong local ties formed through their friendships with other pet owners and non-pet owners with whom they had struck up a friendship as a result of engaging in conversation while out with their pets. Participants were far more likely to be spoken to, or to speak to stranger, if a pet was present and this is consistent with previous studies' findings that the presence of a pet breaks the ice and gets people talking (for example, McNicholas & Collis, 2000). The first words spoken between participants and strangers were directed at the pets or were about the pets, and all participants said that many of their local friendships had started in this way. This finding is comparable to that of the Australian study by McHarg et al (1995) where the majority of respondents surveyed said they had met and made friends through pets. In the current study, some participants had approached and spoken to a pet with the specific intention of initiating a friendship with the owner; however, whether the meetings were accidental or contrived, some friendships had become close while others remained casual acquaintanceships where participants only spoke to other pet owners when the pet was present, and did not always know the owners' names (although the names of all the pets were always known). Finding different outcomes from initial meetings is consistent with Collis, McNicholas and Harker (2003) observation that not all meetings through pets lead to relationships that provide social support, and supports the argument that having a pet does not necessarily result in the owner having a better social network (Collis et al, *ibid*).

Among the friendships that participants had developed after meeting through pets there was considerable reciprocity involving the exchange of pet-related favours such as feeding a pet

in the owner's absence. Wood (2000) suggests that reciprocity in itself may be symbolic of trust and the findings support that, in as much as while participants freely did favours, they trusted that at a later date they could request a favour from the same person and it would be granted. A different level of trust is involved when handing a pet into the care of another person; according to Onyx, Edwards and Bullen (2007) this is a demonstration of as much trust as if a child were being handed over. The study agrees with Onyx, Edwards and Bullen (ibid) to the extent that participants loved their pets and regarded them as dependents, and when handing over their pet into another's care they did so trusting that the pet's needs would be met and the pet would be treated with kindness. However, there was no evidence in the findings to suggest that this level of trust required is the same as when handing over a child. That said, participants' concern and diligence appeared quasiparental, supporting Cusak's (1988) assertion that pets and children bring out similar emotions in people.

Relying on another person to care for a pet demands the 'trust of familiars' defined by Baum and Ziersch (2003) (p.321) as existing within a social network, and trust is, according to Kawachi et al (1997) a potential indicator of social capital. The findings support Kawachi et al's (ibid) contention that localised trust and strong ties are a source of high social capital. An initial conversation sparked by the presence of a pet lead participants to invest effort in social networks with other pet owners with whom they shared values, trust, reciprocity and mutual obligation. All participants also engaged with people in the community who were not pet owners but who had got to know participants as a result of a conversation about a pet. These relationships would arguably not have formed if the pets had not served to break the ice and get strangers talking.

In a disaster, social capital as well as health and wellbeing is compromised further where there is pet loss. A study by Gerwolls and Labott (1994) suggests that the levels of grief arising from the loss of a pet and a human are comparable, and Hunt, Al-Awadi and Johnson (2008) observe that the loss of a pet is strongly associated with risk factors for Post-traumatic Stress Disorder (PTSD). Recognising the potential human and financial costs of pet loss in disasters, some countries have introduced provision for pet welfare in their emergency management legislation; for example the United States' (US) Pet Evacuation and Transportation Standards (PETS) Act 2006 under which the Federal Emergency Management Agency (FEMA) is required to provide shelter and welfare provision to pets and service animals. By comparison, under the UK's the Civil Contingencies Act (CCA) 2004 there is no similar provision for pet welfare and in a disaster the owner or keeper remains responsible for their pet's welfare and must ensure it does not suffer (DEFRA, 2006). As well as the dire consequences for pets affected by disasters, the psychosocial and financial

consequences of pet loss to humans are enormous in the UK where 54 million animals are kept as pets (Walfowitz, 2019).

### 5.5 Disasters and evacuation of pets

Discussion of evacuation scenarios with participants evoked strong emotions, notably anxiety, about the implications of disaster for their pets. The level of concern was akin to that expressed in relation to the welfare of human family members, supporting Barker and Barker's (1988) contention that the owner-pet relationship can be as close as between human loved ones. In response to the scenarios, all participants said they would heed advice offered by the emergency services in a precautionary evacuation (in other words, participants would temporarily move out of their homes, taking their pets with them), and they would also comply with the orders of a mandatory evacuation where their pets could be transported and sheltered with them. However, in a mandatory evacuation where pets were not able to be transported or sheltered, only one participant would comply, and compliance would be accompanied by great reluctance, distress and dread. In the humans-only mandatory evacuation scenario all other participants - cognisant of the risk as described by emergency personnel attempting to carry out the evacuation - would refuse to comply and would remain with their pets. Participants' hypothetical refusal to leave without their pets emphasises their inclusion of pets in 'family'. Refusal to comply with a mandatory order also highlights the finding that pet ownership is the leading cause of failed evacuation (eg Chadwin, 2017; Heath, Kass & Beck, 2001) and supports (Day's (2017) argument for pet ownership being evaluated as a health and safety risk.

In addition to responding to evacuation scenarios, participants also described their current preparedness for evacuation of their pets. None had ever thought to plan or prepare for their pet's evacuation from their house and, prompted to think on the spot, could only name items of daily living (for example, food, toys and a blanket) to put in an evacuation pack for their pet. No participant mentioned the items that would enable a pet (or the body of a pet) to be identified and returned to them in a disaster. Without identification it is difficult and sometimes impossible to reunite owner and pet after a disaster, and losing a pet can give rise to grief comparable to that following human loss (Gerwolls and Lobbott, 1994).

The finding that participants had given no previous thought to preparing for the evacuation of their pets in an emergency was initially surprising, given that in the previous months all had witnessed a significant fire nearing their homes and this might have prompted thoughts about evacuation from their homes or other actions to protect their pets in a disaster;

however, participants' failure to prepare is in line with Evans and Perez-y-Perez (2013) discovery in relation to the 2011 earthquakes in Canterbury, New Zealand, that many pet owners in the region had neither plans nor adequate supplies for their pets. Linked to this and important in the context of considering implications for DRM policy and practices, Evans (2011) observes that at the time of the same disaster, discussion about pets did not feature in public campaigns in New Zealand about disaster preparedness.

#### 5.6 Pet ownership and psychosocial resilience

The findings from the current study suggest that relationships between people and their pets can be a source of, and can help develop, the psychosocial factors thought to contribute to resilience and enable a person to adapt, cope with and move on after trauma (Iacoviello & Charney, 2014). Adversity and positive adaptation are common themes in resilience (Fletcher & Sarkar, 2013) and Iacoviello and Charney (ibid) find that the psychosocial factors involved in coping with and recovering from adversity have cognitive, behavioural and existential components (including, for example, self-esteem, a social support network, not feeling isolated or alone, and having a purpose in life). This finding aligns with both Bonanno's (2004) view of resilience as a trait and Ahmed's (2007) differentiation between internal traits and external factors that affect resilience. All participants' emotional bonds with their pets were strong, and in response to the unconditional and non-judgmental love from their pets, participants felt needed, loved, supported, protected and happy. These findings challenge the definition of pets being merely "animals we live with and that have no obvious function" (Amiot, Bastian & Martens, 2016) (p. 552) and exemplify Serpell and Paul's (1994) observation that is the beneficial nature of the owner-pet relationship that gives pets their importance. Pets are of vital importance to their owners from the owners' perspectives, and for the effect they have on owners' wellbeing. All participants believed that their pets had a positive influence on their wellbeing and several mentioned that their pets gave them a sense of calm and focus, and kept them sane. These findings support Herzog's (2011) contention that that having a pet can reduce stress and Morley and Fook's (2005) observation that having a pet increases self-confidence and positively affects mental health. Participants' good wellbeing made them able and confident to go out in their neighbourhoods and become involved in social networks where they accrued social capital through behaviours associated positively with engagement, reciprocity and trust. Good wellbeing and social connectedness are components of the psychosocial factors that promote resilience (Iacoviello & Charney, ibid) and the current study finds a connection between pet ownership and individual psychosocial resilience.

There is, however, a downside to the close bond between owner and pet, and that is the negative impact on psychosocial resilience when the bond is severed. The owner is not the only person affected by the loss or death of a pet. Participants' reactions to others' pet loss indicated clearly that participants not only empathised with other owners' distress but were themselves distressed, in some cases to a great degree, by the loss of any pet. All participants viewed pets as family and responded to others' pet loss as seriously as if the pet were a human family member. This supports the findings by Gerwolls and Labott (1994) that grief arising from the loss of a human and a pet are comparable, and emphasises the importance of Hunt et al's (2008) observation that there is a strong association between pet loss and PTSD which is, according to Cohen et al (2019) the leading mental health consequence of disaster exposure. Cohen's (ibid) observation implies serious financial as well as societal implications and is highly relevant to DRM in light of Dücker's (2017) framework where individual resilience is interconnected with resilience at community and society levels, and in view of Dücker's (ibid) contention that the connectedness of the wider community requires interconnection at individual level which in turns necessitates healthy social capital among individuals who are psychosocially resilient. The International Strategy for Disaster Reduction's (ISDRR) (2004) warns that weaknesses in any area of resilience contribute to vulnerabilities.

## 5.7 Implications for DRM policy and practices

This section considers current policy and practices and suggests implications of the findings, discussing first the Civil Contingencies Act 2006 and then the Animal Welfare act, and finally pet ownership and the role of pet owners in DRM.

### 5.7.1 Civil Contingencies Act 2006

Preparation for, and response to, disasters and large-scale emergencies in the UK are mandated in the Civil Contingencies Act 2004, a product of the Civil Contingencies Secretariat (CCS) which sits within the UK Cabinet Office at the heart of UK government in Whitehall, England. The CCS was set up in 2001 with the aim of improving the UK's preparedness and response through partnership with key UK stakeholders and the devolved administrations of Scotland, Wales and Northern Ireland. The Civil Contingencies Act 2004 is the current legislation although the UK's impending departure from the Economic Union (EU) and the signing of the Sendai Framework are expected to lead to revisions. The Act lead to the creation of Local Resilience Forums (LRF) which, despite not being legal entities and without having powers to direct their members, essentially require responders to plan,

prepare and communicate in a multiagency environment (Civil Contingencies Secretariat, 2013). Among the work of the LRFs is the development and maintenance of a Community Risk Register which is the basis for emergency planning, and this is guided by, at least, the document Evacuation and Shelter Guidance (Civil Contingencies Secretariat [CCS], 2014). This document makes reference to the welfare of pets, stating “*Evacuation and shelter planning should also address animal welfare issues, in order to minimise suffering and to assist owners in complying with evacuation instruction... Only in the most extreme circumstances is it realistic to expect evacuees to leave their pets behind, and communication, transport and shelter plans should bear this in mind.*”. However, between these sentences is written “*During an emergency, pet owners have a legal obligation to care for their animals and should be reminded of this especially if they decide to self-evacuate or choose not to leave.*” (subsection 4.43, p. 28). This wording is ambiguous in two respects: firstly, the legal obligation for care of a pet in an emergency situation such as a disaster is not clear cut, as discussed the next section; secondly, advising that pet owners ‘should be reminded of this’ is arrogant in that it fails to recognise that the vast majority of owners want to care for their pets as much as they want to care for their human family members. Owners do not need a heavy-handed reminder of the legal requirement for care; what they need, in addition to their own planning and preparation for the safety and protection of their pets, is guidance and practical provision for pet welfare as part of DRM.

#### 5.7.2 Animal Welfare Act 2006

Protection for the welfare of pets is worded differently in the legislation of the UK’s four countries of England, Wales, Scotland and Northern Ireland although the basic tenets are the same. England and Wales have the Animal Welfare Act 2006; in Scotland, The Animal Health and Welfare (Scotland) Act 2006 applies, and in Northern Ireland pets are protected by the Codes of Practice on the welfare of non-farmed animals, issued under powers in Section 16 of the Welfare of Animals Act (Northern Ireland) 2011. In the Republic of Ireland the Animal Health and Welfare Act 2013 applies. Under the Acts, the basic welfare needs for animals are those dubbed the *Five Freedoms* and comprise the requirement for animals to be provided with a suitable environment and diet, the opportunity to display most of their natural behaviours, communal or individual housing (as appropriate for the species), and freedom from pain, suffering, injury and disease. The Five Freedoms were developed in 1965 in the UK and have been adopted by organisations and veterinary groups including the World Organisation for Animal Health (OIE) and the Royal Society for the Prevention of Cruelty to Animals (RSPCA).

In the UK, Animal Welfare Act 2006 assigns responsibility for an animal to the owner but also states that “references to being responsible for an animal include being in charge of it” and “... a person who owns an animal shall always be regarded as being a person who is responsible for it.” (Section 3 Responsibility for animals) Concerning pets, if responsibility, ownership and ‘being in charge’ are defined as the same, it is argued that in a mandatory evacuation the lead response agency becomes ‘in charge’ of a pet and thus owns it. If this is the case, it raises questions about whether an agency could be prosecuted for breaches of the Act in cases of non-provision of pet welfare, and about the implications for owners’ states of mind of having their pets taken charge of and (not) provided for in a disaster, while themselves remaining the owners and similarly liable to prosecution for not looking after it in accordance with the Act. The ambiguity in wording could have material and financial consequences, indicating the need for Section 3, Responsibility for animals, to be worded unambiguously so that responsibility for pet welfare in a disaster is quite clear.

### 5.7.3 Pet ownership and the role of pet owners in DRM

The study suggests that the welfare of pets as well as humans needs to be considered at all phases of DRM. Pets live in about 50 per cent of households and it is therefore likely that pets will be involved if a disaster affects humans. Rogers (2015) argues the critical need for animal disaster response plans and suggests that “ignoring the human-animal bond can severely affect human emotional stability” (p. 263), and Glassey and Wilson (2011) contend that pets and service animals should be included in emergency plans. It is no longer acceptable to leave pets to an uncertain fate and there is a clear need for this to be reflected in policy and practices concerning transportation and sheltering. Chadwin (2017) makes the point that public health benefits from pet-friendly sheltering and that this can be attained where there is appropriate planning. Transporting and sheltering pets with their owners maintains pet owners’ psychosocial resilience by ensuring that the comfort and support provided by the presence of a pet is maintained. People with strong psychosocial resilience have better capacities for coping, adapting well in the face of adversity (for example, Bonanno, 2004; APA, 2014; Southwick et al, 2014). Also, making provision for the welfare of pets recognises that these animals, like humans, suffer from injury, pain, fear and distress (AVA, n.d.), suggesting the moral obligation to help our non-human family as much as we can. Given that pets live in almost half of households, pet owners constitute an important community with which to engage and consult on matters relating to DRM. Initial contact with pet owners might be facilitated through DRM personnel who will, statistically, be among the nearly 50 per cent of households that have pets and already have connections and social networks to initiate engagement. Day (2017) contends that pet ownership should be

assessed as a risk to human health and safety, and this emphasizes the importance of engagement with pet owners so that although the risks associated with pet ownership in a disaster may not be eliminated, they can be minimised through education, information and communication. The findings in this study indicate that pet owners would willingly engage with DRM in the context of there being positive consequences for the safety and wellbeing of their pets in a potential hazard or disaster.

Having a pet is a protective factor for psychosocial resilience, particularly for vulnerable people. Identifying and engaging with vulnerable people who have pets or assistance animals, to ensure their animals can remain with them during disaster evacuations, would reduce the mental health and financial consequences of pet loss in a disaster. Vulnerable groups include the elderly and the homeless who live alone apart from the company of their pets. Two examples of how these vulnerable people may be identified are collaborating with human services organisations to identify and maintain a register of housebound pet owners with carers (Darroch & Anderson, 2016), and engaging with homeless people with pets through direct contact in the streets, collaboration with shelters for the homeless, and through StreetVet, the UK organisation which treats homeless people's pets out in the street. Assistance animals, generally discussed separately as working animals, are considered here alongside pets because of the psychological support their owners derive from their presence.

Evacuation and sheltering pets alongside owners necessitate planning and exercising these scenarios, even if live animals cannot, for ethical and practical reasons, be used in training scenarios. This indicates the need for the involvement of veterinarians and/or technical animal rescue personnel in exercise planning and training, and for the inclusion of awareness training for veterinarians and/or technical animal rescue personnel in the psychosocial aspects of pet ownership and pet loss, as well as DRM policy and practices. A multiagency approach including veterinarians, and the involvement of pet owners, will strengthen DRM at all stages and provide reassurance to the public that the welfare of pets is being taken into consideration. As well as mitigating the risks related to pet ownership in disasters, this approach will support owners' psychological resilience in relation to trust (in the system), safety, and their overall capacity to cope with a disaster, and is congruent with the basic level of mental health and psychosocial support described in the IASC pyramid.

Engagement with pet owners is important for effective DRM, psychosocial resilience and pet welfare. Engaged pet owners might usefully be involved during the readiness phase with, for example, informing and educating the public about local hazards, risk mitigation and how to

prepare for disaster including specific help geared towards the welfare of pet animals. Pet owners' social capital could facilitate liaison among different locations concerning reciprocal transportation and temporary accommodation arrangements for pets or the development of owner-lead pet shelters in the event of a disaster. This direct approach, together with the provision of, for example, training in animal-handling techniques and the anti-tetanus vaccinations, might usefully complement a cross-agency approach and increase the options for transportation and sheltering pets. Safe handling techniques and vaccinations for handlers are important in disasters where the high anxiety of the situation may lead to a pet's behaviour changing: even a docile animal may bite, scratch or kick without warning when frightened. In the response phase of a disaster the company of a pet provides comfort and support, and the presence of the pet could spark communication among survivors. Getting to know someone through a pet, and the presence of the pet, provides immediate psychological support in line with the IASC intervention pyramid basic and second tier, and contributes to the development of social capital.

As well as looking after their pets alongside other family members, pet owners have a specific role and responsibilities towards their pets in relation to DRM. The study showed that awareness of DRM was low and participants had not considered preparation for their pets in a potential disaster. Practical steps for pet owners include informing themselves about what can happen to pets in a disaster (in terms of animal suffering) and understanding how agencies work together in a disaster situation. Owners might join or start up a social network related to pet ownership and disaster management, and engage with their LRF to develop plans for getting their pets (and themselves) through a disaster situation. In addition to being a strong initiative towards ensuring welfare for their pets, engaging with others builds bonding capital among local pet owners, bridging social capital between pet owners and the LRF (among others) (and linking social capital to government), increases local geographic knowledge (through exchanging information about local hazards) and thereby strengthens local ties. Owners' social capital and local ties will enable mutual support during a disaster and a shortcut to re-establishing the community, post disaster.

Owners' responsibilities also include preparing their pets for evacuation. Practical steps that can be taken include making sure that pets are up to date with vaccinations and flea treatments because some conditions (zoonotic diseases) affecting pets can transfer to humans; having the pets microchipped and photographing them from all sides so that they are identifiable; preparing a clearly labelled carrier with the pet's leash or harness, bedding, food and water bowls, and grooming tools; labelling the carrier with a waterproof label showing the names of pet, owner and veterinarian; and packing a waterproof bag with

details of the pet including photographs, a copy of the ownership document, microchip and vaccination records, a note concerning any current medical condition, the names of current drugs and dosages; contact details for the veterinarian and next-of-kin details for extended (human) family (in other words, people in a different geographic area who could be contacted concerning the pet if the pet's owner was unable to be contacted or was dead). A further practical step is preparation of a 'grab list' of food and water containers to be packed in the final stages of preparation for evacuation. By preparing in this way, owners are providing for the survival, comfort and care of their pets as well as exceeding with requirements of the Animal Welfare Act. Owners' preparation for their pets also satisfies their moral obligation and safeguards their own psychological wellbeing by reassuring them that they have done the best for their pet.

## 5.8 Conclusions

This study has addressed the question "*How does pet ownership influence psychosocial resilience in a disaster?*" by exploring the strengths and weaknesses of pet ownership in the face of potential disasters. The findings support those of previous studies and contribute to the body of literature on the relationship between people and their pets. In the context of disaster, pet ownership has been suggested as a protective factor and also a risk, and implications of this for DRM policy and practices have been identified. The study shows that pets have a significant influence on owners' psychological wellbeing. As well as satisfying the moral imperative to protect pets as these sentient beings, making provision for pet welfare in disasters can strengthen psychosocial resilience and save lives.

In conclusion, the key findings of this study are that pet ownership has a positive influence on owners' psychosocial resilience and social capital which extends to, and is an essential component of, the resilience of the communities on which the normal functioning of society depends. Pets are essential to their owners' wellbeing and are regarded as family to be loved, protected and cared for. In a disaster, the emotional bond between owner and pet can be a protective factor or a risk. Pet loss has consequences for psychological wellbeing as demonstrated by Rogers' (2015) observation that pet loss following Hurricane Katrina had a greater effect on mental health than the loss of homes. These findings imply significant societal and financial costs and suggest a strong argument for making provision for the welfare of pets in disasters. Saving pets increases evacuation compliance and reduces psychosocial impact (for example, Edmonds & Cutter, 2008; Irvine, 2009; Thompson, 2013; Chadwin, 2017) but failing to recognise pet ownership as a protective factor in a disaster, and ignoring the risk of pet loss through humans-only evacuations, constitutes a weakness

in resilience. Weaknesses contribute to vulnerabilities and the ability of individuals and society to manage disaster (International Strategy for Disaster Reduction [ISDR] (2004). The key implications for DRM policy and practices are therefore that the welfare of pets be considered in disasters, at all stages.

The findings of the study are not new but emphasize that in DRM pet ownership can constitute a protective factor and a risk, and both have implications for psychosocial resilience. Taking pet welfare into account in DRM policy and practices protects and promotes psychosocial resilience thereby reducing the mental health costs associated with distress arising from pet loss in disasters; mitigates the risk of evacuation failure; and satisfies the moral imperative to protect pets as fellow sentient beings in disasters.

#### 5.9 Limitations of the study

The main limitations of this study concern participant numbers and the lack of extant literature in an exploratory study in a field where little research has been conducted.

It would have been preferable for a greater number of participants to have been interviewed as had been the intention. A General Practitioner (GP) and a veterinary surgeon had agreed to be interviewed; however, at the last moment and citing pressure of work, both withdrew and, for the same reason, were unable to propose a colleague in their place. The perspectives of these practitioners would have usefully contributed to the study. Due to constraints of time and budget, including the researcher's date of departure from the UK, there was no opportunity to source alternatives. Pet-owner participants who responded were all female and, although in interview the women were able to talk about their husbands' experiences with their pets, the male perspective may differ from that articulated by a female and it would have been preferable to hear the male perspective direct. Participants' pets were all owned; that is, the pets were not being fostered temporarily and even though the findings indicate that an owner-pet bond exists irrespective of length of ownership, it would be interesting to observe the nature of the bond between a pet-fosterer and pet, and the influence of this on wellbeing, psychosocial resilience and social capital. The study was conducted in the UK among the history, culture and language of that country and while the literature suggests that pet ownership is common across cultures, it would have been useful to hear the perspectives of people outside this group; for example, people in cultures where an animal living among humans is simply seen as taking advantage of discarded food and shelter from the elements (for example, as in some parts of Africa), or where an animal is rewarded for a task but not considered family to be cared for (for example, the dogs used by

pig hunters in Papua New Guinea who are rewarded for cornering a pig during a hunt by being given fresh entrails following the slaughter).

The study was largely exploratory. Contrary to expectation there was a paucity of literature on the study's topics and this was surprising given that approximately half of the world's households include an animal living as a family member. When planning the study it was anticipated that extensive research would have been conducted on the human/animal family. The extent of literature reviewed does not reflect the amount of literature trawled in search of links between pet ownership and health and wellbeing, social capital and psychosocial resilience. Pet ownership is long established across the globe; it is, however, only recently that pet ownership has received academic scrutiny. As well, little research has been done on implications for DRM, particularly about pet ownership being both a protective factor and/or a risk.

#### 5.10 Recommendations for further research

There are four main recommendations for future research. The first recommendation is for research on the welfare needs of animals, generally, within in DRM. Research in this area has gathered momentum following Hurricane Katrina in 2005 in which the visible suffering of pets and the mental anguish of owners attained a global audience; however, there is still limited literature. Pets are not the only animals whose welfare needs consideration: for example, the still-burning wildfires in Australia (January 2020) are estimated to have caused one billion animal deaths so far and this suggests the imperative to urgently identify options to halt this suffering. Research is needed to determine what is needed and what can be done. The second recommendation is research on the implications of pet ownership and pet loss on wellbeing. Literature is scant on this topic and with pet ownership being a feature in about half of households it is possible that every household either has a pet or has lost one. Psychosocial resilience is affected by pet ownership and pet loss and this has consequences for the resilience of the community. Research in this area therefore supports goals in DRM and the Sendai framework to increase community resilience, and also supports the IASC intervention period in relation to basic mental health services and the promotion of community connections. The fourth and final recommendation for further research is scrutiny of links between psychosocial resilience and social capital, and of the interaction between them. The third recommendation is research into the role and importance of pets to people at different ages (for example, children, teens and the elderly) and in different households (for example, solo, couple, family). Emotional needs change during ageing and as human connections are formed, an insight into the role and importance of pet ownership at the various ages would usefully inform the provision of mental health and psychosocial support within the IASC intervention pyramid, and the engagement of people at

these age groups as community stakeholders within DRM. These recommendations map to the IASC intervention pyramid for mental health and psychosocial support at the base and second tiers, and are congruent with the focus on community resilience within DRM and in the Sendai Framework. While suggested in relation to the UK, the study and recommendations are relevant to other high-income countries with a high level of pet ownership.

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## APPENDICES

Copies of documentation to recruit participants for the study:

Appendix A: Consent Form: All Participants

Appendix B: Information Sheet: Pet Owners

Appendix C: Information Sheet: Practitioners

*Note.* Originals to prospective participants were printed on AUT headed paper.

APPENDIX A: CONSENT FORM: All participants

CONSENT FORM

*Project title:* **Pet ownership as a component of psychosocial resilience to disaster: United Kingdom as case study**

*Project Supervisor:* **Dr Loïc Le Dé**

*Researcher:* **Sahrah G Mai**

- I have read and understood the information provided about this research project in the Information Sheet dated 14 November 2018.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may Withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between Having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes No

Participant's signature:

.....

Participant's name:

.....

Participant's Contact Details (if appropriate):

.....

.....

.....

Date:

**Approved by the Auckland University of Technology Ethics Committee on 14 November 2018 AUTEK Reference Number 18/386**

**Note: The Participant should retain a copy of this form**

## **PARTICIPANT INFORMATION SHEET**

Date Information Sheet Produced: 14 November 2018

### **Project Title**

**Pet ownership as a component of psychosocial resilience to disaster:  
United Kingdom as case study**

### **An Invitation**

I am writing to invite you to participate in my research into the connections between pets, pet ownership and psychosocial resilience ie people's abilities to successfully cope with a crisis and quickly return to what's normal for them.

The research is for my dissertation in fulfilment of a Master of Emergency Management qualification at Auckland University of Technology (AUT), Auckland, New Zealand.

I am a mature student with a professional background and international experience in human resources and stress management consulting, emergency management and veterinary nursing.

### **What is the purpose of this research?**

The purpose of this research is to explore the bond between people and their pets, to investigate the effects of pets and pet ownership on how people cope with and recover from a crisis and to consider the implications for emergency management.

### **How was I identified and why am I being invited to participate in this research?**

You responded to my advertisement for local pet owners to take part in this study and you provided your email address so I could contact you in this context.

To be eligible for participation in the study you need to have a pet and be over the age of 18.

### **How do I agree to participate in this research?**

A Consent Form is attached to this Information Sheet. Please read both documents carefully and the, if you are willing to participate in the research, complete the Consent Form and return it to me. The interview will only take place if the Consent Form is completed. I will be happy to answer questions about either form and can be contacted on (researcher's phone number provided).

Your participation in this research (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable to belonging to you removed or allowing it to be used. However, once the findings have been reduced, removal of your data may not be possible.

### **What will happen in this research?**

When I've received your signed Consent Form I'll contact you suggesting some interview dates and times and requesting your phone number for the purpose of liaising with you about this. I'll then ring you and we'll confirm the interview date and time. The interview will be held at The Coffee Lounge, West Moors, Dorset BH22 0HT and will take approximately an hour including time for coffee and cake.

My role as researcher involves gathering and analysing data collected in interviews and from documents. Your role as participant involves being interviewed by me and sharing your experience and perspective, as a pet owner, on the connections between pets, pet ownership and how people cope with and recover from a crisis.

The interview will have a semi-structured approach meaning we will start with a general question then use further questions to probe responses ie to 'dig deeper'. The interview will be audio recorded and I will also take a few handwritten notes. After the interview I will send you a copy of the transcribed recording and notes for you to either approve or comment on, to ensure that the record of the interview is an accurate reflection of what you meant to say.

### **What are the discomforts and risks?**

I anticipate no significant discomfort or risk to you as a consequences of your participating in this research. However, if the interviews brings up feelings you'd find it helpful to talk about with someone who understands what it's like to love and/or lose a pet, the following organisations can help:

- Blue Cross Volunteers and The Ralph Site  
<https://bluecros.org.uk/et-bereavement-and-pet-loss>  
<https://theralphsite.com>  
These organisations have the same phone number and open times:  
0800 096 6606 open between 830am-830pm
- The Samaritans <https://samaritans.org>  
Phone number 116 123 open 24 hours, 7 days

### **What are the benefits?**

The benefits of this research to you as a participant are an academic perspective on the attachments between people and their pets and people's abilities to successfully cope with a crisis and quickly return to what's normal for them, and insight into how the relationship between people and pets affects the connectedness of the community.

The anticipated outputs of this research include a dissertation in fulfilment of the Master of Emergency Management, a journal article and a conference paper.

### **How will my privacy be protected?**

Your name and contact details will be known only to me as the primary researcher and to my academic supervisor (for the purposes of supervision). No photos will be taken and no-one will come to your house. Your name will not appear in the research.

The confidentiality of data collected from you will be protected. Data collected on paper or electronically is subject to strict control and will be held securely by the university for a period of six years, after which it will be shredded or permanently erased in compliance with AUT's protocols.

### **What are the costs of participating in this research?**

There is no financial payment to you or required from you in relation to participating in this research or in consequences of it at any time.

The only cost involved for you is that of time: for the interview, 30-45 minutes will be needed; beyond that you will need to read through the Information Sheet, Consent Form and the transcription of the interview.

### **What opportunity will I have to consider this invitation?**

Please respond within two weeks of the date on the email to which this invitation is attached.

### **Will I receive feedback on the results of this research?**

You will be sent a copy of the completed study on request.

### **What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Loïc Le Dé, School of Public Health and Psychosocial Studies, AUT, 64+ 9 921 9999 x 7499 (New Zealand).

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), 64+ 9 921 9999 ext 6038.

### **Whom do I contact for further information about this research?**

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

#### ***Researcher Contact Details:***

Sahrah G Mai

(Email and phone number provided)

***Project Supervisor Contact Details:***

Dr Loïc Le Dé, School of Public Health and Psychosocial Studies, AUT, 64+ 9 921 9999 x 7499 (New Zealand).

**Approved by the Auckland University of Technology Ethics Committee on 14  
November 2018 AUTEK Reference number 18/386**

## **PARTICIPANT INFORMATION SHEET**

Date Information Sheet Produced: 14 November 2018

### **Project Title**

**Pet ownership as a component of psychosocial resilience to disaster:  
United Kingdom as case study**

### **An Invitation**

I am writing to you, in your capacity as a Practitioner, to participate in my research into the connections between pets, pet ownership and psychosocial resilience.

The research is for my dissertation in fulfilment of a Master of Emergency Management qualification at Auckland University of Technology (AUT), Auckland, New Zealand.

I am a mature student with a professional background and international experience in human resources and stress management consulting, emergency management and veterinary nursing.

### **What is the purpose of this research?**

The purpose of this research is to explore the human-animal bond and attachment theory in relation to pets, to investigate the effects of pets and pet ownership on psychosocial resilience and to consider the implications for emergency management.

### **How was I identified and why am I being invited to participate in this research?**

I approached your organisation via email, explaining that I would be interested in viewing a Practitioner as part of my research into "Pet ownership as a component of psychosocial resilience to disaster", and requesting that my email be communicated to Practitioners within the organisation. I advised that interested Practitioners were to contact me, the Primary Researcher, direct. You contacted me in that context, expressing interest in participating in the study.

To be eligible for participation in the study you need to have a professional qualification in veterinary or human medicine, emergency management or technical animal rescue plus a minimum of five years' experience in your professional area.

## How do I agree to participate in this research?

A Consent Form is attached to this Information Sheet. Please read both documents carefully and the, if you are willing to participate in the research, complete the Consent Form and return it to me. The interview will only take place if the Consent Form is completed. I will be happy to answer questions about either form and can be contacted on (researcher's phone number provided).

Your participation in this research (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable to belonging to you removed or allowing it to be used. However, once the findings have been reduced, removal of your data may not be possible.

## What will happen in this research?

When I've received your signed Consent Form I'll contact you suggesting some interview dates and times and requesting your phone number for the purpose of liaising with you about this. I'll then ring you and we'll confirm the interview date and time. According to your preference the interview can be held either at your office during daytime working hours or at The Coffee Lounge, West Moors, Dorset BH22 0HT where coffee and cake will be provided. The interview will take approximately an hour in total.

My role as researcher involves gathering and analysing data collected in interviews and from documents. Your role as a Practitioner involves being interviewed by me and sharing your knowledge, experience and perspectives on the connections between pets, pet ownership and psychosocial resilience.

The interview will have a semi-structured approach meaning we will start with a general question then use further questions to probe responses ie to 'dig deeper'. The interview will be audio recorded and I will also take a few handwritten notes. After the interview I will send you a copy of the transcribed recording and notes for you to either approve or comment on, to ensure that the record of the interview is an accurate reflection of what you meant to say.

## What are the discomforts and risks?

I anticipate no significant discomfort or risk to you as a consequence of your participating in this research. However, if the interview brings up feelings you'd find it helpful to talk about with someone who understands what it's like to love and/or lose a pet, the following organisations can help:

- Blue Cross Volunteers and The Ralph Site  
<https://bluecros.org.uk/et-bereavement-and-pet-loss>  
<https://theralphsite.com>

These organisations have the same phone number and open times:  
0800 096 6606 open between 830am-830pm

- The Samaritans <https://samaritans.org>  
Phone number 116 123 open 24 hours, 7 days

### **What are the benefits?**

The benefits of this research to you as a Practitioner are an academic perspective on the attachments between people and the effects of these on psychosocial resilience that will enhance understanding of your patients, client groups and communities.

The benefits for the wider community are an improved understanding of how the relationship between people and pets affects the connectedness of the community that can be used to inform and improve community engagement.

The anticipated outputs of this research include a dissertation in fulfilment of the Master of Emergency Management, a journal article and a conference paper.

### **How will my privacy be protected?**

Your name and contact details will be known only to me as the primary researcher and to my academic supervisor (for the purposes of supervision). No photos will be taken and no-one will come to your house. Your name will not appear in the research.

The confidentiality of data collected from you will be protected. Data collected on paper or electronically is subject to strict control and will be held securely by the university for a period of six years, after which it will be shredded or permanently erased in compliance with AUT's protocols.

### **What are the costs of participating in this research?**

There is no financial payment to you or required from you in relation to participating in this research or in consequences of it at any time.

The only cost involved for you is that of time: for the interview, 45-60 minutes will be needed; beyond that you will need to read through the Information Sheet, Consent Form and the transcription of the interview.

### **What opportunity will I have to consider this invitation?**

Please respond within two weeks of the date on the email to which this invitation is attached.

### **Will I receive feedback on the results of this research?**

You will be sent a copy of the completed study.

### **What do I do if I have concerns about this research?**

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Loïc Le Dé, School of Public Health and Psychosocial Studies, AUT, 64+ 9 921 9999 x 7499 (New Zealand).

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