

What to Think of Canine Obesity? Emerging Challenges to Our Understanding of Human–Animal Health Relationships

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Abstract

The coincident and increasing occurrence of weight-related health problems in humans and canines in Western societies poses a challenge to our understanding of human–animal health relationships. More specifically, the epistemological and normative impetus provided by current approaches to shared health risks and chronic diseases in cohabiting human and animal populations does not account for causal continuities in the way that people and their pets live together. An examination of differences in medical responses to these conditions in human and pet dogs points to the existence of a distinct conceptual and ethical sphere for companion animal veterinary medicine. The disengagement of veterinary medicine for companion animals from human medicine has implications for our understanding what is required for health and disease prevention at the level of populations. This disengagement of companion animal veterinarians from family and preventive medicine, in particular, constrains professional roles, planning processes and, thereby, the potential for better-integrated responses to shared burdens of chronic conditions that increasingly affect the health and welfare of people and companion animals.

Keywords: Human–Animal Relationships, Medical Epistemology, Companion Animal Welfare, Veterinary Ethics, Public Health Ethics, One Health

Introduction

Our relationships with non-human animals and their impact on individuals and societies have long been of social, ethical and medical interest (Hardy 2003; Serpell 1996; Singer 1993). People and animals are intimate partners in the world. Because we live with and rely on animals, understanding the causes and consequences of disease in animal populations is also important. In recent times, broader recognition of the importance of non-human animals as sources of nutrition, human infection and as sentinels of environmental threats have led many ecologists, healthcare researchers and practitioners to assert that understanding the nature and complexity of human–animal health relationships is essential to human health and well-being (Coker et al. 2011; Ehrlich 2002; Zinsstag et al. in press). An expanding community of health regulators and research institutions are now

working under the assumption that our health is inextricably interwoven with that of the animals we consume, those that live in our homes, and the animal populations that surround us. The implication for health professionals, policy-makers and planners is that rather than being incidental to society, the health of humans and animals are best described and appreciated as interconnected phenomena (Rock et al. 2009; Zinsstag et al. 2005).

The most visible non-human animals in Western societies are pets—especially dogs and cats. Many people structure their lives around them: including their working hours, meal times and exercise patterns. The most visible evidence of the latter is the close correlation between the physical activity levels and weight status of dogs and patterns of human activity (Bland et al. 2009; Cutt et al. 2008). Rather than being restricted to a cage or the owner's domestic environment, dogs are public pets. The canine species have insinuated themselves into our conduct and thinking like no other animal (Franklin 1999; Knight and Barnett 2008). In as much as people choose to share their homes, leisure time, social activities and built environment with animal companions, the everyday existence and lifestyle of people and their pet dogs are intertwined. The effects of this association are bidirectional (Haraway 2008). At the most basic level dogs disrupt otherwise sedentary human lives. They “make” their owners take them for walks, and, through the inevitable interactions that occur on these forays, can help foster community ties (Wood and Giles-Corti 2005). At the same time, many people willingly spend time and resources on their pets, attempting to maintain their health and well-being. These influences extend beyond the physical, emotional, social and financial demands of pet ownership. For many, their canine companions share and shape their identities, life-space, lifestyle and terms and conditions of living (Arluke and Sanders 1996; Haraway 2003).

Against this background, there are increasing concerns on the part of human and veterinary medicine about the prevalence of obesity and related chronic diseases in humans and companion animals. Recent studies also indicate that human individuals and populations at higher risk of developing weight-related health problems are more likely to own overweight dogs (Courcier et al. 2010; Nijland, Stam, and Seidell 2010). In this regard, veterinarians sit at the nexus of many different ways of viewing and acting towards our companion species, and may have little option to consider, in some way, the welfare and interconnected presentation of their patients and clients (De Graaf 2005; Swabe 2000). But, companion animal veterinarians do not just deal with animal disease; they must also run a profitable business. This creates tensions between patient- and client-focused models of veterinary care, between financial concerns and concerns for animal welfare. While there is a growing sense amongst veterinary ethicists and practitioners that veterinarians should not shirk their responsibilities to their animal patients in deference to a client's wishes and sensitivities by, for example, avoiding discussing canine obesity with an overweight client, how an owner's lifestyle, social and physical environment might expose their pets to the risks of chronic disease is rarely a matter for veterinary consideration. Yet the existence of canine health problems that at the population level reflect sociocultural and socio-economic patterns is of great significance. Moreover, the emergence of socially mediated population-level health problems that translates across species barriers poses a challenge to how we understand and negotiate connections between the health of humans and their pets.

Even as financial considerations and owner preferences undoubtedly direct veterinary actions, ethical and legal parameters also shape veterinary responses to their clients' requests. However, the existence these determinates does not adequately capture what happens in practice. In this essay,

we make the case that the current “bio-genetic” focus that dominates veterinary research and the resultant evidence base creates reinforces the construction of a distinct conceptual and ethical sphere for companion animal healthcare in which the impact of social factors on animal health are primarily construed as problems of animal welfare. We show how establishing such a distinction imposes unnecessary limits on the content and scope of interventions, thereby also distorting any ensuing ethical obligations. Instead of encompassing an expanded model of causation that situates companion animals in broader society, chronic diseases in pets are approached as the products of interactions between the biological determinants of dysfunction, and the choices and behaviours of individual owners. This is conceptually limiting because we lose any prospect of seeing how human and animal health are co-determined by social and physical environments. It is ethically limiting because it needlessly restricts and prescribes possible human actions, stifling the development of innovative community-based approaches to human and companion animal health best able to elevate the welfare of each. To support our claims, we describe the conceptual and normative basis on which our understanding of connections between human and companion animal health are currently founded. First, however, to empirically ground the analysis and subsequent discussion, we compare how excessive weight gain, obesity and acquired heart disease is medically constructed, represented and addressed in co-habiting human and pet dog populations.

Case Study: Comparing Obesity and Heart Disease in Humans and Companion Animals

Issues surrounding body mass have become a matter of increasing comment and concern amongst policy-makers (Kersh 2009) and both human (Flegal et al. 2010) and companion animal healthcare professionals (Laflamme 2006). Current estimates are that somewhere between 30 and 50% of people and their pet dogs in Western societies are overweight or obese, and these figures are expected to climb in the coming decades (Flegal et al. 2010; Lund et al. 2006). It is known that chronic conditions such as obesity, osteoarthritis, insulin intolerance and acquired heart disease in humans arise through the interplay of genetic and lifestyle-related social factors, and that these social factors are a major influence on morbidity and mortality (Hunter 2005; Marmot and Wilkinson 2006). Similarly, concerns about overweight and obese dogs are reinforced by an emerging veterinary literature that demonstrates correlations between excess canine weight and increased burdens of chronic conditions such as osteoarthritis, diabetes and heart disease (Gossellin, Wren, and Sunderland 2007; Lund et al. 2006). Age, breed, neutering-status and domestic environments are identified as risk factors for canine obesity (McGreevy et al. 2005). The increasing incidence of obesity in companion animals has been attributed to individual owners’ attitudes and behaviours, and their effects on diet and exercise patterns (Butterwick and Hawthorne 1998; Robertson 2003).

Like in all other species, diseases in human and canine populations arise from interactions between genetic susceptibilities and environments. Nevertheless, even as veterinary researchers are beginning to consider the influence of environmental factors on conditions such as canine heart disease and to formulate interventions for populations of “at risk” overweight and obese animals (Bland et al. 2009; Bouthegourd et al. 2009), the vast majority of veterinary research and practice remains focused on drug-based interventions and on locating breed-specific risks for heart failure (Atkins et al. 2009; Häggström, Duelund Pedersen, and Kvart 2004). Similar concerns about the causes, consequences and implications of excess body mass in humans are evident amongst human healthcare professionals. Again, excess body mass has been demonstrated to be an independent risk factor for poor health outcomes with acquired heart disease (Abbasi et al. 2002). In human

populations, however, the demonstrated root causes now include genetic factors, diet, levels of physical activity and how an individual's behaviour on these dimensions is mediated by their social and economic circumstances (Lorig 2002; McLaren 2007).

Viewed in such terms, there are similarities and differences in how veterinary and human medicine account for and treat obesity and heart failure. They are similar in that both disciplines associate obesity with genetic susceptibilities, diet and exercise levels and recognise its implications for chronic disease. They are different in that while human medicine has attempted to broaden its models of causation and treatment regimens beyond a clinical focus to include social factors, companion animal veterinarians have remained relatively tightly focused on biological causes and clinical interventions. Equally, whereas medicine entertains the possibility of how companion animals may contribute to human health (Cutt et al. 2007; McNicholas et al. 2005), veterinary practitioners tend to eschew any explicit or systematic engagement with the social domain, particularly in respect of the way that an owner's lifestyle and the social and physical environment may simultaneously have deleterious effects on their own health and welfare, and on that of their companion animals. The influence of cultural preferences, structural factors and socio-economic disparities on the way that people and their pets live together and the behaviour of individual owners have yet to be conceptualised as drivers of incidence (Degeling et al. 2011).

The extent to which important aspects of human–companion animal health relationships might also be socially mediated becomes clear when we consider that pet dogs: (a) reside in almost half of households in Western Societies (McNicholas et al. 2005); (b) are exposed to the same environmental risks, (e.g. toxins and infections); (c) and are closely entwined within our everyday lives such that they share our diet, lifestyle, and, it would seem, predilection to weight gain in obesogenic environments. Apart from calls for companion animal veterinarians to monitor pets as sentinels for human exposure to environmental toxins and infectious disease (Trevejo 2009; Wohl and Nusbaum 2007), other aspects of shared health-risks between pets and their owners remain relatively unexplored (Patronek 2010; Smith and Bonnet 1998). Business concerns and client preferences can shape veterinary actions, but like other health professions, veterinarians increasingly seek to justify practices from an externally verified evidence base (Keene 2000; Schmidt 2007). While recognising the health significance of long-term conditions such as obesity and heart disease in companion animals, how these conditions in pets might relate to social and cultural factors that also affect the health of their owners remains theoretically and empirically underdetermined, and consequently ignored. To understand why, it is necessary to return to first principles. We need to examine the conceptual and normative basis on which our understanding of connections between human and companion animal health are currently founded.

Conventional Conceptions of Human–Animal Health Relationships

In both human and veterinary medicine, the health relationship between humans and animals is usually characterised and understood through one or more of five epistemological frameworks. Four of these frameworks are typically grouped together and collectively described as “One Health” because they concern themselves with the impact and importance of non-human animals to human health. The final framework, in contrast, attempts to provide an objective assessment of the relative welfare and quality of life of animals in human care. It is increasingly clear that notions of evidence and ethics in medicine are closely intertwined, such that informed ethical judgements are always

preceded by informed epistemological judgement about evidence (Worrall 2008). Therefore, as demonstrated below, each of the epistemological approaches described below is characterised by the nature of the issues that they bring into focus, the knowledge they create and how they then prescribe human actions.

One-Health Frameworks

There are four basic One Health approaches for describing the intersection and relationship between human and non-animal health. They are (i) biosecurity and the risks of shared infectious disease; (ii) agricultural production and food safety; (iii) biomedical knowledge production; and (iv) the health benefits of companion animal ownership (McNicholas et al. 2005; Zinsstag et al. 2005). All of the frameworks described above are characterised by two features: (1) a different epistemic orientation for humans than for animals, and consequently, (2) an anthropocentric focus. This anthropocentrism means the relationship between humans and animals tends to be cast as a one-way street, such that the interests and rights of humans are privileged and animals are construed as instruments for human utilisation or as potential threats or as both. Together, these epistemological frameworks encompass the methodologies and health-related responsibilities of ecologists, social scientists, clinical professionals, biomedical researchers, veterinary epidemiology and public health.

The overarching epistemological focus and broader institutional role of veterinary medicine is utilitarian in character: to monitor, maintain and promote animal health as a means of protecting and promoting human health and well-being (Pappaioanou 2004; Schwabe 1984). That it is not to say an animal's health is never valued, as the increasing levels of intervention and individual focus of companion animal veterinary medicine attest. In this regard, pet dogs are a special case. Yet the elevated value and status given to these individual animal patients is almost always a function of their relationship with their owner (Serpell 2005). It is arguable that as a consequence, the development of better treatments for diseased individual pets provides the impetus for most of the research in companion animal veterinary medicine (Degeling 2009; Jones 1997). The market for pharmaceuticals is one of the primary drivers of veterinary research, as is increasingly the case in human medicine (Kerridge 2010). With the fee-for-service business model under which most companion animal veterinarians operate, these new treatments and procedures are then marketed as the acme of medical care for pet animals.

Human medicine and public health, in contrast, only considers non-human animals in so much as they affect human health. Animals are cast as reservoirs of infection, as causes of injury, as models of human patho-physiology and to a lesser extent, as a medium for increased levels of human physical activity and psychosocial support. Arguably, these characteristics in turn mean that neither human nor animal medicine is inclined to examine and understand possible causal connections for the co-incident presence of long-term non-infectious conditions in humans and their pets. Although animals are often used as models of human disease, these studies are either focused on physiological pathways or testing pharmacological and surgical interventions. When it comes to spontaneous disease in pet animal patients, the social and physical environment—shaped by socio-economic disparities, urban planning, work culture, food industries and consumerist politics—is not considered to be of great significance. The overall effect is that investigations of chronic conditions in companion animals—including those shared with cohabiting human populations—tend to stop at the level of biological mechanisms and the owner's role in proximal causation.

Welfare-Based Approaches

Animal welfare is a science, and aims to be avowedly empirical. Nonetheless welfare-based approaches cast the relationships between humans and animals in both epistemological and ethical terms. Distinct from rights-based conceptions of animal ethics, “welfare science” explicitly rejects any attempt to treat animals as a homogeneous moral category. In its practice and orientation, welfare-based approaches mobilise a scientific methodology to limit the harms that result from our utilisation of other species within ethically determined boundaries. In theory, this often takes a contractual structure; permitting some form of animal utilisation in return for adequate harm minimisation (Nordenfelt 2006). Animal welfare is therefore concerned with ensuring that animals in human care lead as “natural” a life as possible (including both somatic and behavioural needs), without unnecessary pain, dysfunction or duress. Notably most measures of animal welfare are negative, derived from knowledge of the outcomes of absences and deficits (Yeates and Main 2008). While the animal’s environment is a central part of these considerations, beyond ensuring an animal’s care meets a checklist of somatic and psychological needs, such as Webster’s (1994) “Five Freedoms”, there is as yet no clear understanding—never mind consensus—about what sort of environment permits an animal to have a “good” life. ¹

Those who advocate welfare-based approaches acknowledge that which environment is “better” for the animal ultimately depends on the way the assessor values and ranks its basic health and functioning, against affective states, and its need for “natural” living (Fraser 2007). Despite this reliance on naturalistic assumptions it has been argued that welfare science therefore prioritises the utilisation of knowledge of an animal’s capacities and requirements in a manner that is independent of further moral deliberations and prescriptions of how it “ought” to be treated (Fraser 1999, 183). Consequently the implications of welfare-based approaches for human medicine are almost entirely focused on the effective use and humane treatment of animal subjects during experimentation. In contrast, welfare-based approaches have become central to veterinary conceptions of animal health and well-being (McMillan 2000). As veterinarians increasingly seek to align themselves with the interests of their patients, most would consider themselves to have an ethical duty to protect and promote the welfare of animals under their care in so much as this does not unavoidably and adversely affect human health and well-being (Fox 2002; Rollin 2000).

How do One-Health and Welfare-Based Approaches Shape Animal Health Care?

Clearly, veterinarians do not have the same responsibilities and duties of care for their human clients as for their animal patients. Their patients do not pay the bills, and the veterinary professional mandate does not include advising animal owners on how to manage human diseases. That said, the circumstances and means by which veterinarians can and should influence their clients decisions and actions are now under ethical scrutiny (Yeates and Main 2010). Increasingly, veterinarians seem to be seeking justifications for putting their patient’s interests first: adopting a patient-focused model rather than client-focused model of care (McMillan 2003; Yeates 2009; Yeates and Main 2011). While veterinarians and other animal health care providers should not presume to know what is best for their clients, in extreme cases their duty to prioritise the needs of the non-human animal within their care is far clearer. Ethicists such as Rollin (1998) have long argued that in circumstances where animals are suffering unnecessarily, veterinarians must act as advocates and agents for the interests and welfare of the affected non-human animal(s). In less extreme cases there are reasonably well-

defined limits on how the interests and rights of owners and animals should influence veterinary actions and recommendations. For example, if an animal in contact with humans has a zoonotic disease then a veterinarian would have a duty to intervene, usually on the animal (Morgan and McDonald 2007). Alternatively, if the lifestyle of a human affects the health of either the animal, the owner or both, arguably, the weight of the ethical imperative for veterinarians to protect animal welfare increases, while their duty to prioritise the owner's wishes, well-being, and thereby "health" begins to diminish.

Hence, it is evident that the imperatives created by One Health and welfare-based approaches to human–animal health relationships do not naturally include connections between, on the one hand, companion animal-health, and on the other, the social and physical environment they share with the owner, nor the owner's relative health and well-being. Put simply, the epistemological and normative impetus provided by current approaches to human–animal health relationships means that neither human nor animal medicine is inclined to systematically examine and understand possible connections between the co-incident presence of long-term conditions in humans and their pets. Instead the role of the social and physical environment in the incidence and management of health risks and chronic diseases in companion animals, such as congestive heart failure, renal disease, osteoarthritis or indeed behavioural disorders, are rarely if ever treated as a population-level problem, but as individual problems of animal welfare.

Broader Implications and Stifled Potential for Co-operation

At the same time, increasing importance is being placed on understanding all of the health consequences of human–animal interactions (Zinsstag et al. 2005). Yet our understanding of connections between health and the social and physical environment are regrettably truncated to exclude other populations of animals that share our society, socialities, lifestyle and burdens of chronic disease. So, even as in this article we are focusing on animal health, many of the same criticisms can be levelled at human healthcare. Both human and animal medicine by and large regards the co-incident increase in obesity and burdens of chronic disease in their respective patient populations as existing in distinct and separate domains. The application of science to describing and prescribing how we live, and therefore what is required for health, has created several "situated" ways of knowing. Yet the resulting species division of medical practices is a manifestation of an epistemic myopia that has consequences for each group of healthcare provider's ethical obligations. While the moral imperative to understand and attempt ameliorate companion animal disease is arguably of a qualitatively different order to addressing similar conditions in human beings, for the reasons documented below, we believe that deficiencies in our understanding of how "health" is mediated between humans and co-habiting animals need to be circumscribed and mapped.

Epistemological Virtues

Links between socio-economic status and health-related behaviours are known to account for differences in health across human populations. Health-related behaviours are not just the product of individual choices, but relate to how social structures constrain the actions and experiences of individuals. In this way, health disadvantage can become "embodied" such that we lose sight of the social processes and structures behind "lifestyle-related" factors that cause an individual to develop a disease. Owner attitudes and choices are important. But differences in the circumstances and capacities of owners are also likely to create differences in the incidence and severity of health risks

and chronic disease in pet dog populations. It is therefore conceivable that the long-term effects of social and physical environments on the health of humans and cohabiting companion animals could reflect a more stable process of social differentiation. Investigations into if and how these factors also affect other animals besides humans may play an important role in furthering our understanding of this basic process (Smith and Bonnet 1998). Moreover, our understanding of our ethical obligations is always framed by previous epistemological judgements about evidence (Worrall 2008). As illustrated below, we need to reconstruct the episteme applied to human–animal health interactions to improve the ethics of animal and population health care.

Normative Benefits

The role of veterinarians in this picture is complex. Although animals are more lucrative to veterinary business alive than dead it is not always simply the case that client preferences trump animal welfare concerns. Yet as our pet dogs live like us, live longer and increasingly share our epidemiological categories, the cost of private veterinary care is escalating. Under the tenet that “good medicine and good profits go hand in hand” veterinarians continue develop and promote high-technology treatments to prolong the lifespan and palliate the symptoms of pet animals suffering from chronic diseases (McMillan 2008, 31). How owner choices are constrained and limited by work pressures, income levels and the built environment—and how this escalates the risk of chronic disease for them or their pets—is not yet considered a matter for veterinary consideration—even though these same factors are known to have significant affects on the health of human populations. Instead the owner’s capacity to look after the animal appropriately is often given an individualised moral dimension, where, for example, the use of pharmaceutical treatments for canine obesity is described by peak Animal Welfare Agencies as a shortcut for lazy owners (Degeling and Rock 2012), and canine bariatric surgery is considered to be ethically objectionable (German 2006).

Welfare science affords veterinarians a vehicle with which to offer pragmatic and practical solutions to the dilemmas surrounding the health of animals in human care. Yet it is conceivable that unless veterinarians broaden their assessments and recommendations beyond the actions of individuals to consider the possible effects of environmental context and social structures on the health of their patients, their claims to cognitive and moral authority in matters of animal welfare will soon begin to lose legitimacy. If veterinarians have a duty to protect and promote human health and animal welfare, then the wealth of data emerging from longitudinal studies of human populations on the significance of social and physical environments demands attention and accommodation from those interested in causes, consequences and significance of comparable and co-located animal diseases.

The issues that we are raising extend beyond the conceptual, and their effects extend beyond non-human animals, animal owners and animal healthcare providers. Concern with the health, welfare and interests of non-human animals have not been a central part of the broader public health discourse or the bioethics agenda. In public health ethics, for example, pets are seen as adjuncts to human health in so far as they help to “populate” urban environments. They are only represented as agents that promote or threaten human well-being, without explicit consideration for the health or welfare of the animals themselves. If there is a carry-over of health inequity to the animals that live with disadvantaged people, we will need to consider if it is acceptable for a disproportionate number of these animals to die at younger ages and live in poor health—overweight, diabetic and at

elevated risk of cancer through exposure to unhealthy ways of living. At the same time is it just for us to deny some people the joys and benefits of pet ownership and personal inter-species relationships? To better understand our obligations to the animals that share our lives and lifestyles the field of bioethics must begin to consider animals other than laboratory animals or food animals. First, we need to look more carefully and in a fine-grained way at the actual lived relationships between pets and people and the impact of broader social, cultural and economic forces on these relationships.

One-Health Co-operation

Finally, it is arguable that current One Health and welfare-based approaches to human–animal health relationships reinforce disciplinary barriers that stifle better integrated approaches to intervention. Companion animal veterinarians—like physicians and public health practitioners—increasingly worry about chronic diseases and health risks in pets. These shared concerns cannot be framed or cogently articulated within current understandings of animal health, and therefore its connection to human health and well-being. While concern for human welfare and interventions directed at its improvement have largely been subsumed into the realms of public and population health, the causes and consequences of socially mediated chronic conditions in companion animal medicine are typically addressed as individual animal welfare concerns, and, arguably, are therefore subsumed by the veterinarians need to meet their client’s preferences. Broadening the basis of our understanding of the lived continuities between the health and well-being of humans and our co-habiting animal companions is likely to create new opportunities and possibilities for human actions (Haraway 2008). It is likely to provide practising veterinarians with an evidence base from which they can begin to bring the task of addressing the population-level drivers of incidence and consequent animal welfare concerns nearer to the centre of their everyday practices.

Given the prevalence of companion animals in our society and the advent of a relatively sophisticated clinical expertise to treat small animal illness and disease, there is also likely to be a prominent public health role for small animal veterinary practitioners in preventative and public health programmes applicable to animals and people (Trevejo 2009; Wohl and Nusbaum 2007). In Western urbanised societies these include, but are not limited to: using animal disease as a means to educate the public about health-risks (Rock and Lail 2009); using pets as a conduit to promote the growth of social capital and community networks (Wood and Giles-Corti 2005); and designing community exercise programmes in collaborations with municipal authorities and providers of primary care (Cutt, Giles-Corti, and Knuiman 2008). Yet in order for community-based veterinarians to feel confident and comfortable in these roles—without resorting to assigning blame and judging the moral worth of members of the human population in their care—then it is essential that they develop a comparable body of knowledge about how social context has influence upon companion animal health and well-being. Repositioning companion animal veterinary medicine in relation to primary care and public health could lead to far-reaching and sustainable positive changes in both animal and human health.

Conclusion

In recent decades, the otherwise distinct issues of emergent non-human animal disease and the social detriments of human health have both become of great international concern. Companion animal veterinarians often have to find a balance between their client’s preferences and concerns

for animal welfare. These constraints inevitably shape some of their actions, but there are other factors at play. Current approaches to characterising and intervening in relationships between the health of people and companion animals reinforce the creation of a separate conceptual and ethical sphere for companion animal veterinary medicine. This separation, in turn, imposes unnecessary limits upon animal owner, veterinary and medical practitioner perceptions, reasoning processes and understandings of their role as healthcare providers. Such limits constrain the scope of discourse, and, thereby, the repertoires of intervention available to practitioners, policy-makers and planners—including those that might also promote health in cohabiting human and companion animal populations. The key issues, as we understand them, are conceptual: how pet health is framed and understood in relation to human health. The larger impact of current approaches to the intersection of human and companion animal health, however, is on the consequent ethical obligations. As we gain a better appreciation of the continuities between socially mediated health problems and animal welfare concerns, these obligations may change—to the point that the underlying causes of incidence of comparable conditions such as obesity and weight-related health problems in both people and their pets become of direct concern to veterinarians in companion animal practice.

Notes

[1] The Five Freedoms are set of principles for animal welfare that are meant to ensure a minimal standard of care that includes: (1) freedom from thirst, hunger and malnutrition, (2) freedom from discomfort, (3) freedom from injury, pain and disease, (4) freedom to express normal behaviour and (5) freedom from fear and distress.

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