The authors provide information about the human-animal bond that may provide a starting point for understanding the development of animal-hoarding disorder.

When “People Who Hoard Animals” was published in Psychiatric Times in 2000, we were just beginning our study of this poorly understood behavior. Since then, hoarding disorder (HD) has been a subject of considerable research and has become an official diagnosis in DSM-5. DSM-5 criteria for HD do not specify the types of possessions that are necessary for this diagnosis. Because animals are legally considered property (ie, possessions), the hoarding of animals would appear to qualify as HD, although this question is not yet resolved in the psychiatric literature.

In light of this development, a review of the existing literature and a new look at animal hoarding is warranted. In this article, we provide an overview of what we have learned in the past 15 years about this behavior with respect to phenomenology, etiology, and treatment. At the outset, it is important to note that our knowledge of this condition is based on a limited number of studies. Consequently, what is described here should be viewed as a set of working hypotheses.

Prevalence

Although animal hoarding technically fits the criteria for HD, DSM-5 fell short of listing it as an official subtype, and Mataix-Cols has rightly noted that its diagnostic classification remains unclear on the basis of the available evidence. DSM-5 describes animal hoarding as a condition associated with HD and defined by “the accumulation of a large number of animals and a failure to provide minimal standards of nutrition, sanitation, and veterinary care and to act on the deteriorating condition of the animals (eg, disease, starvation, death) and the environment (eg, severe overcrowding, extremely unsanitary conditions).” Estimates from surveys of animal control agencies and humane societies suggest that there are approximately 3000 reportable cases of animal hoarding annually in the US. The most dramatic feature of this behavior is the effect it has on the home environment. Large numbers of animals, often sick, dying, or dead, are crammed into living areas of the hoarder’s home. Often urine and feces cover the floors and/or walls, creating high concentrations of ammonia and aerosolized organic contaminants that pose serious health risks to occupants. In a study of complaints to health departments, animal hoarding was found to result in significantly more unsanitary conditions than did object hoarding and posed significantly more threat to the health of human occupants of the home and to the community at large. Surveys of caseworkers dealing with this problem indicate that a lack of appropriate sanitation appears in 70% to more than 90% of animal-hoarding cases, and together with the large number of animals involved, increases the likelihood of zoonotic diseases for the occupants and the community. Case reports indicate that between 31% and 100% of individuals who hoard animals also hoard inanimate possessions. In these cases, the clutter and unsanitary conditions severely interfere with normal activities of daily living, such as sleeping in a bed, bathing, finding important objects, and preparing food. Often major appliances, toilets, showers, and tubs are not in working order. Inability to care for the hoarded animals and to maintain basic personal hygiene make this a problem of animal abuse as well as of the hoarder’s self-neglect. From a resource perspective, animal-hoarding cases require more agency involvement for resolution than do object-hoarding cases, and legal
proceedings can result in substantial costs.\textsuperscript{6}

**Types of animal hoarding**

Patronek and colleagues\textsuperscript{9} have suggested 3 ways to classify persons who hoard animals: overwhelmed caregivers, rescuers, and exploiters. The overwhelmed caregiver is an individual who owns a large number of animals that were reasonably well cared for until a change in circumstances impaired the individual’s ability to provide proper care for them. Most often, the circumstances involve loss of resources, such as death of a spouse, loss of a job, or failing health. These individuals often initially make attempts to provide adequate care but eventually become overwhelmed, and living conditions deteriorate. Their acquisition of animals tends to be passive, with new animals coming from breeding among the animals they have. Overwhelmed caregivers of-ten exhibit some awareness of their problems with animal care and tend to minimize rather than deny them. Isolation may be a factor in their reluctance to seek help. When they are confronted by authorities, they have fewer problems complying with intervention than rescuers or exploiters.

A strong sense of mission to save animals from a presumed threat characterizes the more serious rescuers or those who are mission-driven. These individuals vehemently oppose euthanasia and show strong fears about the death of their animals, even though they fail to recognize the poor quality of the care they are providing. They believe only they can adequately care for their animals. Even as they become overwhelmed, they continue to collect new animals, often relying on a large network of enablers who facilitate their acquisition of more animals. Their acquisition methods tend to be more active than passive, often involving going in search of animals they perceive to be in need of rescue. Mission-driven animal hoarders or rescuers go to great lengths to avoid authorities and actively prevent outside influence over their growing population. These individuals now often present themselves as organized institutional personnel, often masquerading as representatives of a legitimate shelter or sanctuary that cares for hundreds of animals.

Animal-hoarding cases typified by exploiters are the most serious and difficult to resolve. They involve individuals with sociopathic characteristics who acquire animals to serve their own needs, with little true attachment to them. These individuals appear indifferent to the suffering of their animals, and they lack empathy for humans and animals. They display extreme denial of any problems and flatly reject authority or any outsider’s legitimate concerns. As do the mission-driven animal hoarders, exploiters believe their knowledge is superior to anyone else’s, and they display an extreme need to exert control over their animals. Exploiters display many characteristics of antisocial personality disorder, including superficial charm and charisma; they are manipulative and cunning, narcissistic, and appear to lack guilt or remorse. The absence of emotional attachment to their animals suggests that these individuals may not fit the diagnostic criteria for HD.

Very little research has been done to verify these classifications of animal hoarding. However, in a review of a small number of cases, Reinisch\textsuperscript{10} classified 40% as overwhelmed caregivers, 20% as mission-driven hoarders, and 40% as exploiters.

**Typical characteristics of animal hoarders**

The majority of studies that examined the phenomenology of animal hoarding are detailed case reports prepared by animal control agencies and humane societies. In the two largest reports, the findings regarding sex and age were remarkably similar. Patronek\textsuperscript{4} reported that 76% of 54 hoarders were female, and nearly half of the 54 were 60 years or older. A report by the Hoarding of Animals Research Consortium (HARC) detailed 71 cases.\textsuperscript{7} Eighty-three percent of these cases were women; the average age was the mid-50s. Animal-hoarding behavior appears to develop in middle age or later, although research is lacking on this point.\textsuperscript{11} From half to nearly three-quarters of the individuals in these studies were single, widowed, or divorced. Interestingly, over half of the HARC sample lived with other individuals, including children and elders. Smaller case studies have reported similar sex and age distributions;\textsuperscript{12,13} a recent Spanish study found a similar age distribution but a more equal sex representation.\textsuperscript{14}

Most of the few studies on animal hoarding outside North America are case studies that document the existence of animal hoarding or describe the characteristics of hoarders within particular countries. For example, Svanberg\textsuperscript{15} reported media and government reaction to a Swedish woman who “rescued” 150 swans over several years by bringing up to 10 at a time to her one-room apartment. Also in Sweden, Zak\textsuperscript{16} described the case of a hoarder with 80 dogs, 1 cow, 2 pigs, 1 rabbit, and some poultry in unsatisfactory conditions, without any veterinary care. Other studies have detailed the condition of animals and characteristics of the owners in Spain, New South Wales, and Serbia;\textsuperscript{14,17,18} these reports were similar to those from the US.

As noted, a recent study by Ockenden and colleagues\textsuperscript{12} in Australia found demographic similarities with US animal-hoarding cases, but the affected animals were in better condition than their
American counterparts. To provide insight into the development of animal hoarding, Ramos and colleagues examined Brazilians who own large numbers of animals that are adequately cared for in normally functioning homes. These individuals showed more intense attachments to their pets than owners of just 1 or 2 animals; these types of attachments were suggested to be precursors to animal hoarding.

**Types of animals most likely to be hoarded**
Details regarding the number and kinds of hoarded animals generally have been consistent across studies. Cats are the most frequently reported type of animal hoarded, followed by dogs, although in a study from Spain, there was a higher frequency of dogs than cats among the animal-hoarding cases. Farm animals and birds were also reported with some frequency (11% to 17% in some studies). In the study by Patronek, in 35% of the cases, only a single species was hoarded; in 31% of the cases, 2 species were hoarded; and in 33% of the cases, more than 2 species were hoarded. Calvo and colleagues reported that 79% of cases involved a single species. The typical number of animals in these cases ranged from 10 to more than 900. Women were more likely than men to have more than 100 animals, and middle-aged persons (aged 50 to 64 years) had significantly more animals than did those who were younger or older.

**Underlying psychopathology**
A comparison of animal and object hoarding outlined similarities, including a chronic course characterized by an exaggerated need to control, an exaggerated sense of responsibility, and intense emotional attachments to hoarded objects or animals. Both types of hoarding are also characterized by poor insight and great difficulty in parting with objects or animals. In both object hoarding and animal hoarding, the urge to save/acquire is intense, as is the distress when possessions are removed. A result of these behaviors is a seriously compromised living environment; in most cases, hoarding of animals results in more severe personal and public health consequences. There are some notable differences between object and animal hoarding. In one study, most animal-hoarding cases involved squalid living conditions, while only a minority of object-hoarding cases did so. A review of the sex ratio indicates that it is relatively even for object hoarding, whereas animal hoarders are predominantly female. Although both conditions are characterized by poor insight, animal hoarders often exhibit delusional beliefs about special abilities to communicate with, understand, and care for animals.

There is little documentation of the clinical trajectory of animal hoarding, although anecdotal reports are available and one book provides an in-depth self-report. Steketee and colleagues examined the characteristics and antecedents of hoarding behaviors by interviewing 16 individuals who fit the criteria for animal hoarding and 11 individuals who owned many animals but did not meet hoarding criteria. Both groups comprised mainly white, middle-aged women who owned an average of 31 animals. Interestingly, individuals in both the hoarding and nonhoarding groups reported stressful childhood and adult life events as well as strong feelings about animals, such as urges to rescue, take care of, and be close to them. However, those who hoarded animals more often attributed human characteristics to animals and reported having had more problems with early attachments to caregivers and chaotic childhood environments. They also had more dysfunctional current relationships and mental health concerns. This report and clinical impressions suggest the following recurring themes among individuals with animal-hoarding disorder:

- Unshakable belief that they are saving, rescuing, or caring for their animals, which they see as being well and happy
- Profound compulsion to maintain or increase the collection of animals despite ample evidence of their failure to provide adequate care
- Childhood history of parents who were unstable, neglectful, abusive, absent, and/or inconsistent, often with chaotic, transient lifestyles
- Difficulty in establishing and maintaining stable interpersonal relationships as an adult
- Trauma in childhood and/or adulthood: often multiple, severe traumatic events, such as sexual abuse or assault, parental abandonment, or death or unexpected loss of loved ones

Unfortunately, there are no articles that describe the clinical characteristics of animal hoarders based on formal psychological/psychiatric evaluations. Nonetheless, these themes suggest that information about the human-animal bond may provide a starting point for understanding the development of animal-hoarding disorder.

Nathanson and Patronek have proposed an attachment-based explanatory model. Consistent with this approach, a psychodynamic theory proposed by Brown suggests explanations for the underpinnings of a “normal” human-animal bond and shows how these concepts may be relevant when the bond goes awry, as occurs in animal hoarding. Brown grounds her theory in the
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Published on Physicians Practice (http://www.physicianspractice.com)

well-established importance of attachment security during development and the knowledge that when needs are not met during this critical period, particularly when accompanied by trauma, disorders of the self and dysfunctional attachment styles can result. Attachment to companion animals can be profound, even for nonhoarding pet owners. Individuals who hoard animals show difficulty in letting go of them, even after they are dead. Their attachments are rigid and extreme, frequently at the expense of the well-being of the animals. Brown suggests that in animal-hoarding disorder, companion animals provide critical self-object functions, even into adulthood. Accordingly, reliance on an animal(s) can become intense and crucial to a person’s sense of well-being, with loss or potential loss of the animal(s) creating a sense of fragmentation, disintegration, and depression.

Many aspects of Brown’s hypothesis are also consistent with Flores’s framing of addiction as having its roots in attachment disorder, whereby the addictive behavior represents attempts at self-repair. Indeed, in “People Who Hoard Animals,” similarities in animal hoarding and addictive behavior were noted. The powerful positive feedback persons with animal-hoarding disorder may receive from their imagined role as animal caregiver is consistent with this approach and may explain what drives the hoarding behavior.

Building on this work, Patronek and Weiss explored the application of Allen and Fonagy’s work on mentalization theory as a way to further understand the various features of animal hoarding. Mentalization has been described as a form of emotional knowledge that involves being able to appreciate the reality of others and as a dynamic skill that is compromised by intense emotions associated with attachment relationships. Allen describes how adults with a history of childhood attachment trauma fail to understand how others (people and animals) think and feel. Impaired mentalization may be one mechanism that helps maintain hoarding behavior. Although problems in mentalization in persons with animal-hoarding disorder remain to be examined, the possibility of deficits in this area has important implications for therapy.

Research in other spheres may play a crucial role in the developing science of animal hoarding. For example, complex feedback mechanisms involving the oxytocinergic system have been linked not only to a history of childhood adversity but also to human-animal interactions. Oxytocin may promote a tendency to “tend and befriend” animals and increase defensive behavior against perceived threats from outsiders. Tending and befriending is a more typical response to stress among women than men, which would be consistent with the sex disparity seen in animal hoarding.

While it is speculative, this account suggests avenues for neurobiological research into animal-hoarding disorder.

Legal issues
Animal hoarding poses some unique legal issues, above and beyond those typically encountered in extreme object hoarding, because the conditions observed in these cases often violate state criminal statutes prohibiting cruelty to animals. Unlike civil child protection laws, however, animal cruelty statutes do not provide an avenue for intervention until a crime can be proved. Thus, in the absence of voluntary cooperation or the presence of children or dependent adults whose welfare may be compromised, intervention may be delayed until environmental conditions deteriorate substantially. Ultimately, despite potential mental illness that contributes to the behavior, a person with animal-hoarding disorder may be prosecuted and subjected to criminal penalties, including fines, jail, and/or forcible removal of animals and/or prohibitions or limitations on future ownership or caregiving, with no provision for mental health treatment.

The animals are often in legal limbo for months to years during protracted legal proceedings because, under the law, they are treated primarily as evidence rather than as victims of a crime. There is also no legal mandate that the interests of the animals must be considered during case disposition. To avoid this, some agencies may not prosecute but, instead, may attempt to negotiate, even if the proposed solutions are suboptimal for animals and people.

Evaluation
Clinical evaluation of a person with animal-hoarding disorder can take 2 primary forms: psychiatric evaluation for purposes of therapy and forensic evaluation for the courts. For the former, we recommend that the clinician be skilled in evaluating a broad spectrum of behavioral disorders and familiar with published guidelines for assessing and treating object hoarding. Given the potential for deep attachment to animate beings who often provide reciprocal interaction, there may be limits to how far we can extrapolate from object hoarding. Thus, it is important for the therapist to be knowledgeable about the human-animal bond and to explore those issues with the individual. The potential for self-neglect should also be explored.

With respect to forensic evaluation, several dozen states have legislated mandatory or discretionary
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Published on Physicians Practice (http://www.physicianspractice.com)

evaluation of persons convicted of animal maltreatment, including animal hoarding. However, legislatures provide little guidance on what the goals of such an evaluation might be (eg, detection of danger to public safety, detection of mental illness, identification of being dangerous to self and others, identification of competency/capacity to care for animals). Limited forensic instruments are available for these purposes, and none has yet been validated. (One such instrument has been used for several years at the University of Denver and will be described in an upcoming book by Levitt, Grisso, and Patronek.41)

Treatment
Many studies of animal hoarding report recidivism rates from 60% to 100%.12 Recidivism in this context refers to the frequency with which people reacquire multiple animals after having animals legally removed. This differs from the concept of relapse, which refers to the return of symptoms after someone has been successfully treated for a disorder. Nothing is known about relapse in animal hoarding, since no studies of treatment outcomes have been done. However, there are some case examples of individuals who have stopped hoarding animals and have been able to keep from reacquiring them.23

As noted earlier, although courts may mandate counseling, no validated therapy for animal-hoarding disorder is available. In addition, most individuals who have been adjudicated for animal hoarding are reluctant to participate in therapy, making this strategy difficult to enforce. Similar to nonvoluntary clients who are prosecuted in housing courts for object hoarding, the most appropriate method for initial engagement of persons with animal-hoarding disorder may be through community task forces composed of a mix of service professionals (housing, police, fire, public health, mental health, legal). Members of such multidisciplinary task forces can work together to engage offenders in identifying goals that matter to them while requiring compliance with nonhoarding behaviors. Of critical importance is determining whether to limit the number of animals or require abstinence (eg, because of overt cruelty rather than neglect).

Essential to this process is determining how to provide basic social support that meets the need for bonding that was previously filled by animals. According to Fonagy and colleagues,42 it is important that therapists avoid demanding a level of mentalizing from patients that is beyond their ability. A relatively high level of metacognition (ie, the ability to reflect on one’s own thought process or that of others) is required before a patient’s own distorted thinking can be challenged and distinguished from reality. Our clinical experience strongly suggests that animal hoarders often show profound deficits in this area.

Quick fixes for these cases are unlikely; court-mandated therapy must be applied carefully to avoid extending the period of legal limbo for animals or putting animals at future risk. Given the long-standing nature of the hypothesized psychopathology underlying animal hoarding, even in an ideal situation with a cooperative and receptive patient, a longer-term therapeutic undertaking with periodic checks on compliance would be expected.

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