Is That Dog a Pit Bull? A Cross-Country Comparison of Perceptions of Shelter Workers Regarding Breed Identification

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Bull breeds are commonly kept as companion animals, but the pit bull terrier is restricted by breed-specific legislation (BSL) in parts of the United States and throughout the United Kingdom. Shelter workers must decide which breed(s) a dog is. This decision may influence the dog's fate, particularly in places with BSL. In this study, shelter workers in the United States and United Kingdom were shown pictures of 20 dogs and were asked what breed each dog was, how they determined each dog's breed, whether each dog was a pit bull, and what they expected the fate of each dog to be. There was much variation in responses both between and within the United States and United Kingdom. UK participants frequently labeled dogs commonly considered by U.S. participants to be pit bulls as Staffordshire bull terriers. UK participants were more likely to say their shelters would euthanize dogs deemed to be pit bulls. Most participants noted using dogs' physical features to determine breed, and 41% affected by BSL indicated they would knowingly mislabel a dog of a restricted breed, presumably to increase the dog's adoption chances.

Keywords: pit bull, breed identification, animal shelter

The pit bull terrier is banned or restricted by breed-specific legislation (BSL) in parts of the United States and throughout the United Kingdom. Nevertheless, dogs who resemble pit bulls are often still kept as companion animals. American bulldogs, American Staffordshire terriers, bull terriers, English bulldogs, Staffordshire bull terriers, and pit bull terriers are frequently grouped together as bull breeds. A number of the bull breeds are categorized as pit bull terriers

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in some places, while in others, the pit bull terrier is considered distinct from the other bull breeds (Rowan, 1986).

The rescue/shelter system is under much pressure to take in and rehome unwanted companion animals, which frequently include pit bulls or other bull breeds. In the United Kingdom, 89,571 dogs were received by 536 organizations during 2010 (Stavisky, Brennan, Downes, & Dean, 2012). Attempts to quantify the entire U.S. shelter population in detail have been unsuccessful (Rowan, 1992; Zawistowski, Morris, Salman, & Ruch-Gallie, 1998), but according to the American Society for the Prevention of Cruelty to Animals (ASPCA), an estimated 5,000 animal shelters operate in the United States and receive between 5 million and 7 million companion animals annually (ASPCA, 2013). How the pit bull terrier is defined in a locale is likely to impact which dogs animal shelter staff identify as pit bulls, and this in turn may influence whether they are placed for adoption. In many shelters, dogs identified as pit bulls face higher euthanasia rates than dogs identified as most other breeds (Clevenger & Kass, 2003; Lepper, Kass, & Hart, 2002; Lord et al., 2006).

In the United Kingdom, the Dangerous Dogs Act of 1991 prohibits the purchase, adoption, or ownership of pit bull terriers, Japanese Tosas, Dogo Argentinos, and Fila Brasilieros (Department for Environment, Food and Rural Affairs [DEFRA], 2013). According to the UK government, pit bull-type dogs are distinct from Staffordshire bull terriers (which are not banned) and are sometimes called American pit bull terriers, American Staffordshire terriers, Irish Staffordshire bull terriers, Irish blues, or Irish red noses (DEFRA, 2013). Although the UK Kennel Club does not recognize the pit bull or American pit bull terrier as a breed and therefore has no breed standard for it (Kennel Club, 2006), dogs are considered "pit bull type" if they meet a substantial number of 15 physical features outlined by the DEFRA and copied directly from a 1977 issue of the American periodical *Pit Bull Gazette* (DEFRA, 2009). A dog may be confiscated if he or she meets most of these criteria, regardless of the dog's parentage, or he or she may be placed on an exemption register subject to restrictions and management practices.

The majority of municipalities in the United States have no restrictions on pit bull-type dogs, but approximately 300 locales in the United States have BSL (National Canine Research Council, 2013). The terms of these laws vary a great deal from place to place. Some laws completely ban pit bull-type dogs (e.g., in Shawnee, KS; Prince George's County, MD; Ashland, MO), and others place restrictions on caregivers of such dogs (e.g., in Dawson, GA; Preston, ID; Buffalo Grove, IL). Common restrictions include higher licensing fees, registering the dog as vicious or dangerous, liability insurance coverage, mandatory sterilization, muzzling when on public property, placement of signage indicating a dangerous dog is on property, and confinement on private property in secured pens.

Municipalities that ban or restrict pit bull-type dogs generally include as part of their bans American pit bull terriers, American Staffordshire terriers, and Staffordshire bull terriers, as well as dogs of mixed breeding thought to have the physical characteristics of pit bull-type dogs (National Canine Research Council, 2013). Some municipalities also ban or restrict breeds or breed mixes not commonly considered to be pit bull types, such as American bulldogs, bull terriers, Dogo Argentinos, Presa Canarios, Rottweilers, and wolf hybrids (National Canine Research Council, 2013).

Some of the laws in the United States banning or restricting pit bull-type dogs, such as Miami-Dade County's pit bull ordinance (Miami-Dade County Animal Services Department,

1989), specify physical features that define pit bull-type dogs. Many do not, however, perhaps because, like the UK Kennel Club, the American Kennel Club (AKC) does not recognize or have a breed standard for the American pit bull terrier (AKC, 2006). The United Kennel Club, which is based out of Michigan, however, does offer a breed standard for the American pit bull terrier and, as of 2013, for a new breed called the American bully (United Kennel Club, 2013). Both the UK Kennel Club and the AKC have a breed standard for the Staffordshire bull terrier, but unlike the AKC, the UK Kennel Club does not have a breed standard for the American Staffordshire terrier.

Results from genetic testing have been used in legal cases to argue a dog is not a pit bull type (e.g., Salina, KS; Clouston, 2009), and it has been suggested that genetic testing for breed is more objective and reliable than visual identification (Barnett, 2011). However, the validity of genetic testing to determine pit bull ancestry is also deemed questionable due to the pit bull's nature of being a "type" that may source from a range of purebred bull breeds (Wisdom Panel, 2013). Furthermore, although the genetic tests recognize some bully-type breeds, they do not recognize the American pit bull terrier.

Because of differences across places regarding what breeds are subject to BSL, there is likely to be variation across the United States and between the United States and United Kingdom regarding what is considered a pit bull-type dog. Without knowing a dog's ancestry, shelter, pound, and rescue workers likely have to resort to their own intuition and prior experience when deciding what breed(s) a dog is to be identified as. Determining whether a dog is a banned breed, however, is not always straightforward, as even experts struggle to determine visually whether a dog is a pit bull type (Rowan, 1986), and there can be extreme phenotypic and behavioral variation within a litter sired by the same stud and dam (Scott & Fuller, 1965). Furthermore, recent research has shown both a lack of agreement across individuals tasked with identifying cross-breeds and a lack of consensus between visual breed identification and genetic breed identification (Voith, Ingram, Mitsouras, & Irizarry, 2009; Voith et al., 2013). This confusion is likely to be even further compounded when dealing with the sensitive issue of bull breed identification.

In this study, we aimed to investigate the perceptions of shelter staff and the mechanisms that they use when identifying bull breeds, especially those commonly classified as pit bulls. We examined how much agreement there was regarding what constitutes a pit bull across shelter staff and volunteers working in shelters, pounds, and rescues in the United States and United Kingdom. Furthermore, we tested whether U.S. participants in places with and without BSL differed in their likelihood of identifying a dog as a pit bull. We also compared the most common reasons for euthanizing shelter dogs in the United States and United Kingdom and qualitatively assessed the features shelter staff and volunteers reported using to determine a dog's breed.

MATERIALS AND METHODS

Participants

Data for this study were analyzed from 416 U.S. participants and 54 UK participants who voluntarily completed an online survey from December 18, 2012, to February 17, 2013. Except

for participants who chose to include their contact information in the comments section at the end of the survey, responses were anonymous. Ninety-one percent of American participants and 94% of UK participants were female. Fifty-one percent of participants were aged 18 to 40 years old; 42% were aged 40 to 60 years old; and 7% were older than 60 years. Participants in this analysis were self-identified as shelter staff or volunteers who have a role in assigning breed names to dogs who enter their shelters, pounds, or rescue organizations in either the United States or United Kingdom; respondents who indicated that they did not meet these inclusion criteria were excluded from our analysis.

Participants who comprised this convenience sample were recruited via emails sent directly to shelters, pounds, and rescue organizations and via the social-networking sites Facebook and Twitter. Shelter email addresses were acquired via extensive Internet searches for shelters throughout the United States and United Kingdom. Efforts were made to send emails to shelter staff who worked directly with dogs, but when this was not possible, emails were sent to shelters' general inquiry email addresses (e.g., info@sheltername.org). Email recipients were encouraged to share the survey with other shelter staff.

The survey could be completed multiple times using a single IP address so that shelter staff and volunteers could choose to complete the survey while at work and could do so using the same computer. Four hundred eighty-nine individuals started the survey, and 470 of those individuals completed it, giving a completion rate of 96%. Data came from 402 unique IP addresses. The U.S. sample included individuals from 43 states, and the UK sample included individuals from 36 postal code areas.

Measures and Procedures

Participants were required to provide a response to every question they were asked in the survey. They answered questions about themselves, their work with dogs, characteristics of their shelters, and whether their shelters were subject to laws that regulate whether certain breeds can be adopted. Participants were shown the same set of 20 dog pictures twice (including 11 bull breeds or bull breed mixes, 2 each being highly probable pit bull terrier examples from the United Kingdom and United States, respectively). Twelve of the dogs pictured resided in the United States, and 8 of the dogs resided in the United Kingdom. Every participant saw the same 20 dog pictures, but the order in which the 20 pictures were presented was randomized to prevent order effects from influencing responses. During the initial presentation of these pictures, participants were asked to identify the breed or breed mix of each dog pictured and to explain why they concluded each dog was that particular breed or breed mix. The pictures of each dog are presented in Figure 1.

The open-ended questions that asked participants to identify the breed or mix of breeds of each dog pictured were coded by categorizing the first breed a participant listed as the dog's primary breed or breed type. For example, if a participant labeled a dog a Labrador/German shepherd mix, the primary breed was considered to be a Labrador. Once all responses had been coded, we were able to determine the primary breed or breed type that UK and U.S. participants most frequently assigned to each dog. If the participant listed multiple breeds or included the word "mix" or "cross-breed" in the description of the dog's breed, the dog was classified as a mix rather than a purebred. The exception to this was when participants listed two breeds and indicated a dog was one breed or the other (e.g., "Boston terrier or French bulldog"). In

FIGURE 1   Photos included in the survey (color figure available online). (*continued*)

such cases, the first breed listed was considered the primary breed, and we did not consider the response as indicative of the dog being a mix. Responses regarding why participants thought a dog was a particular breed or breed mix were analyzed qualitatively for common themes.

After the open-ended questions had been answered for all 20 pictures, the pictures were presented a second time in random order, and participants were asked to select "yes" or "no" regarding whether they would use the term "pit bull" to describe all or part of each dog's breed identity. In addition, they were told to assume each dog pictured did not have a caregiver searching for him/her and did not have any major medical or behavioral problems, and they were asked to select the single option that most accurately represented what their shelter would most likely do with the dog. Choices included the following: The shelter would make the dog available for adoption, transfer the dog to another organization, or euthanize the dog. Each
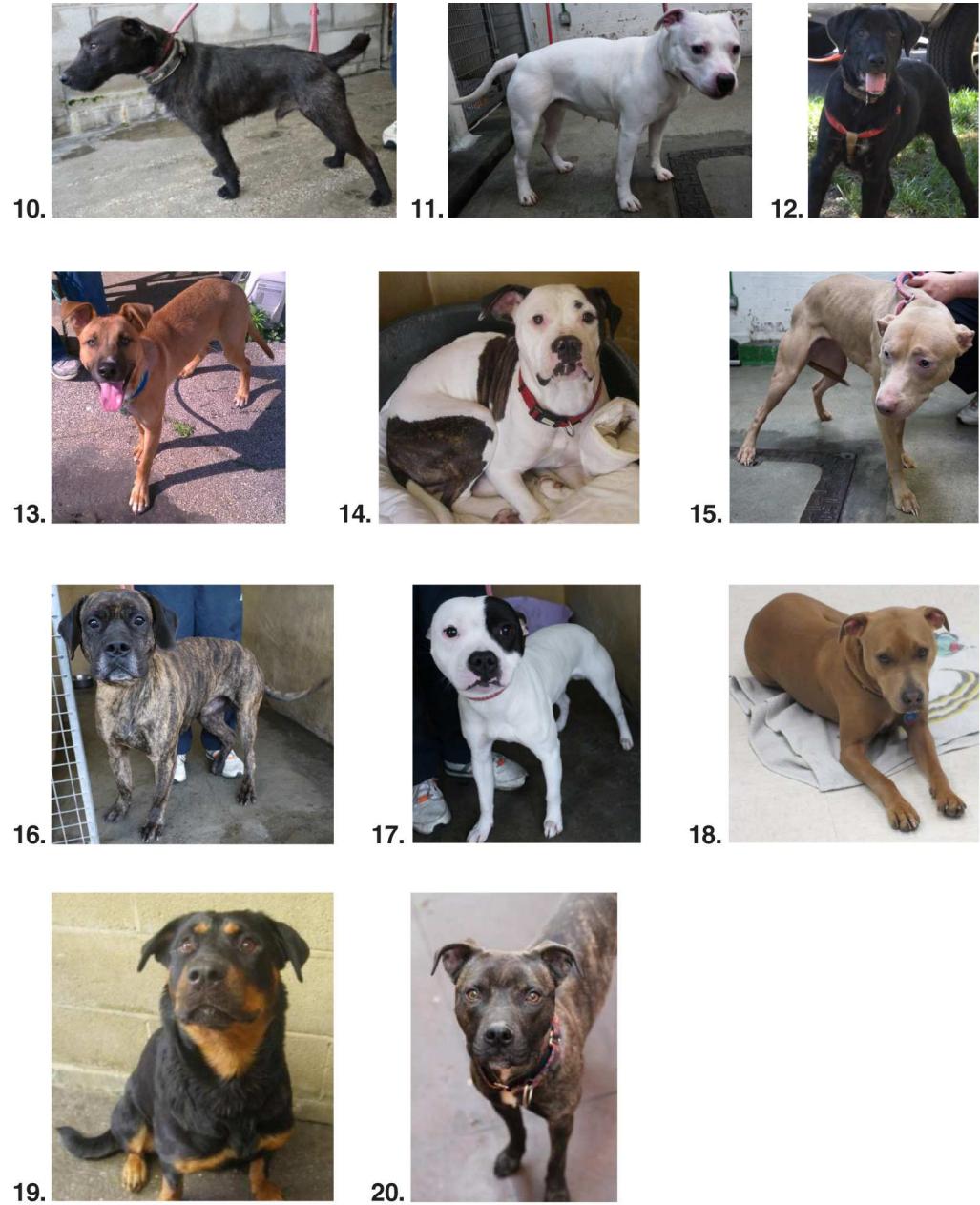
FIGURE 1   (*Continued*).

participant could only select one option for each dog. After completing the sections of the survey that included the pictures, participants were given a list of bull breed names (e.g., American bulldog) and Mastiff breed names (e.g., Dogo Argentino) and were asked whether they considered any of the 10 names to be alternative names for pit pull or pit bull-type dogs. For each breed listed, participants could select from the following options: "Yes," "No," or "I do not know what that [breed] is."

At the end of the survey, participants whose shelters were subject to laws regulating what breeds could be adopted answered "yes" or "no" to the following question: "If the dog in question is a cross or mix, would your shelter ever classify it as a breed that is not banned? For example, if Rottweilers were illegal where your shelter is located, might your shelter label a dog that may be a Labrador and Rottweiler cross (mix) as a Labrador cross (mix)?"

Ethical Considerations

The study was approved by the University of Liverpool Veterinary Ethics Committee and the Canisius College Institutional Review Board. Participants formally consented to participation on the first page of the survey.

Statistical Analyses

Differences in responses between U.S. and UK participants, as well as between U.S. participants in areas with and without BSL, were assessed using chi-square tests. When expected cell counts were less than 5, Fisher's exact tests were used in lieu of chi-square tests.

RESULTS

There was a great deal of variation in the types of shelters represented in this sample. Thirty-one percent ($n = 147$) of respondents reported that their shelters receive public funding, and 86.8% ($n = 408$) indicated their shelters receive private funding. Shelter admission policies varied, with 50.4% ($n = 237$) accepting every stray and 45.7% ($n = 215$) accepting every caregiver-relinquished dog. Participants indicated the following reasons for not accepting every stray or caregiver-relinquished dog: There is limited space for housing dogs (59.8%, $n = 281$); dogs must meet certain medical requirements (12.6%, $n = 59$); and dogs must meet certain behavioral requirements (33.6%, $n = 158$).

All UK participants were under the jurisdiction of the Dangerous Dog Act, although 17 (31.5%) of the UK participants' responses to a question regarding BSL suggested they were unaware that their shelter was subject to BSL. Forty-four (11%) of the U.S. participants reported working in locales that were subject to BSL, but given the confusion represented by UK participants' responses to the BSL question, it is possible that additional U.S. participants worked in locales with BSL but were unaware of it. Three U.S. participants indicated they did not know whether their shelter was subject to BSL. For the purpose of analysis, all UK participants and 44 U.S. participants were classified as being subject to BSL because we were unable to check the accuracy of U.S. participants' responses due to the numerous variants of BSL that are scattered across U.S. cities, towns, and counties.

Eighty-three percent ($n = 390$) of participants stated their shelters euthanize dogs for behavioral reasons, while 84.9% ($n = 399$) reported euthanizing dogs for medical reasons. There was no difference between the United Kingdom and United States in the likelihood of euthanizing dogs for behavioral reasons, $\chi^2(1) = 1.17$, $p = .28$, but dogs were more likely to be euthanized for medical reasons in the United Kingdom than in the United States (United Kingdom, 94.4%, $n = 51$; United States, 83.7%, $n = 348$), $\chi^2(1) = 4.34$, $p = .04$. Twenty-three percent ($n = 110$) of respondents reported their shelters euthanize dogs as a method of shelter population management, and U.S. participants were more likely than UK participants to state that dogs were euthanized for this reason (United Kingdom, 1.9%, $n = 1$; United States, 26.2%, $n = 109$), $\chi^2(1) = 15.81$, $p < .001$. Five percent ($n = 24$) of respondents stated their shelters euthanize dogs of specific breeds, and UK participants were more likely than U.S. participants to report that their shelters did so (United Kingdom, 29.6%, $n = 16$; United States, 1.9%, $n = 8$), $\chi^2(1) = 75.72$, $p < .001$. Nine percent ($n = 44$) of participants stated that their shelters never euthanize dogs, and this did not differ by country, $\chi^2(1) = 0.28$, $p = .60$.

Primary Breed Identification

Table 1 includes the percentage of UK and U.S. participants who identified each dog's primary breed as the breed that was most commonly listed by participants and also shows the percentage of UK and U.S. participants who identified each dog pictured as a mix. The term "American shelter dog" was rarely used to identify a dog's breed; the dog most commonly referenced as an American shelter dog (Dog 13) was called that by 7 of the 416 American participants. For 10 of the 20 dogs pictured, the primary breed most commonly assigned by UK and U.S. participants was the same. Five of these 10 were non-bull breed dogs (Akita, Boxer, Labrador, Mastiff, and Rottweiler).

Classification of Dogs as Pit Bulls

As shown in Table 2, 7 of the 20 dogs were identified as pit bulls or pit bull mixes by the majority (>50%) of U.S. participants (Dogs 5, 9, 11, 15, 17, 18, and 20), whereas only 1 of the dogs was identified as a pit bull or pit-bull mix by the majority of UK participants (Dog 15). Interestingly, this dog was also a high scorer for pit bull in the United States, as was the next dog most commonly identified as a pit bull in the United Kingdom (Dog 9), indicating a tendency for U.S. shelter staff to agree that dogs who UK shelter staff deem to be pit bulls are indeed pit bulls. Chi-square analyses and, when expected cell counts were less than 5, Fisher's exact tests indicated that U.S. participants were significantly more likely than UK participants to consider 12 of the 20 dogs pictured to be pit bulls (Table 2).

When asked whether 10 bull breed and Mastiff breed names were alternative names for pit bull or pit bull-type dogs, a greater percentage of U.S. participants than UK participants responded in the affirmative for each breed listed (e.g., 26.7% of U.S. participants vs. 9.3% of UK participants equated the American bulldog to a pit bull), and these findings are reported in Table 3. According to chi-square analyses, U.S. participants were significantly more likely than UK participants to consider the following breeds to be pit bulls: American bulldog, American

TABLE 1
Primary Breed/Breed Type Identity Most Commonly Assigned by UK and U.S. Participants

Picture Number	Primary Breed/ Breed Type (United Kingdom)	Primary Breed/ Breed Type (United States)	% of Participants Who Listed Breed as Primary		% of Participants Who Listed Dog as Mixed Breed	
			United Kingdom	United States	United Kingdom	United States
1	Akita	Akita	98	87	13	34
2	American Bulldog	American Bulldog	43	52	76	63
3	French Bulldog	Boston Terrier	77	51	38	45
4	Boxer	Boxer	100	100	15	23
5	Staff. Bull Terrier	Pit Bull	78	60	94	82
6	German Shepherd	Shepherd	28	33	96	92
7	Bull Terrier	Bull Terrier	74	72	94	89
8	English Bulldog[a]	English Bulldog	59	76	2	5
9	Staff. Bull Terrier	Pit Bull	57	67	91	89
10	Patterdale	Terrier	69	42	33	87
11	Staff. Bull Terrier	Pit Bull	94	39	32	74
12	Labrador	Labrador	85	92	83	86
13	Mix	Shepherd	37	55	98	98
14	American Bulldog	American Bulldog	39	34	87	85
15	Pit Bull[b]	Pit Bull	43	74	85	84
16	Mastiff	Mastiff	48	61	100	90
17	Staff. Bull Terrier	Pit Bull	94	61	59	81
18	Staff. Bull Terrier	Pit Bull	50	43	93	95
19	Rottweiler	Rottweiler	98	96	44	77
20	Staff. Bull Terrier	Pit Bull	85	72	78	83

Note. The percentage of participants who selected the response is provided, as is the percentage of participants who deemed the dog to be a mixed breed.
[a]For Dog 8, the percentages reflect UK and U.S. participants who explicitly stated English bulldog. The percentage increases to 98% (United Kingdom) and 97% (United States) after combining those who listed either English bulldog or bulldog as the primary breed.
[b]For Dog 15, 43% of UK participants listed pit bull as the primary breed, and 42% listed Staffordshire bull terrier (Staff.).

Staffordshire terrier, English bull terrier, miniature bull terrier, Presa Canario, and Staffordshire bull terrier ($p < .01$ for all).

When responses from BSL and non-BSL sites within the United States were examined separately, the percentage of participants without BSL who considered a dog to be a pit bull was greater than those with BSL for 15 of the 20 pictures, but this was only significant for 2 of those 15 pictures: Dog 9, $\chi^2(1) = 6.43$, $p = .01$, and Dog 18, $\chi^2(1) = 5.14$, $p = .02$. For 1 of the 20 pictures (Dog 11), an identical percentage of people from BSL and non-BSL sites considered the dog to be a pit bull. For the 4 remaining pictures, a higher percentage of BSL participants than non-BSL participants considered each dog to be a pit bull, but this difference was only significant for one dog: Dog 8, $\chi^2(1) = 9.90$, $p = .002$. These findings are shown in Table 4.

TABLE 2
Number of UK and U.S. Participants Who Identified the
Dogs Pictured as Pit Bulls

Picture	United Kingdom	United States
1	0 (0%)	5 (1.2%)
2	1 (1.9%)**	74 (17.8%)
3	0 (0%)	4 (1.0%)
4	0 (0%)	6 (1.4%)
5	11 (20.4%)***	334 (80.3%)
6	0 (0%)	25 (6.0%)
7	7 (13.0%)***	163 (39.2%)
8	0 (0%)	6 (1.4%)
9	21 (38.9%)***	349 (83.9%)
10	0 (0%)	3 (0.7%)
11	1 (1.9%)***	294 (70.7%)
12	0 (0%)	2 (0.5%)
13	0 (0%)**	41 (9.9%)
14	4 (7.4%)***	203 (48.8%)
15	32 (59.3%)***	354 (85.1%)
16	0 (0%)*	33 (7.9%)
17	5 (9.3%)***	341 (82.0%)
18	14 (26.0%)***	273 (65.6%)
19	0 (0%)	2 (0.5%)
20	10 (18.5%)***	373 (90.0%)

Note. The percentage of participants from each country who identified the dogs pictured as pit bull dogs is in parentheses.

Asterisks indicate dogs who were significantly more likely to be considered pit bulls by U.S. participants than by UK participants according to chi-square analyses (*$p < .05$, **$p < .01$, ***$p < .001$).

When the number of expected values in any cell was less than 5, the Fisher's exact test was used in lieu of the chi-square test.

Likelihood of Euthanasia

No participants indicated that the following dogs would be euthanized if they entered their shelters: Akita (Dog 1), French bulldog/Boston terrier (Dog 3), Boxer (Dog 4), Labrador (Dog 12), mix/shepherd (Dog 13), and Rottweiler (Dog 19). At least one participant reported that his/her shelter would euthanize each of the 14 remaining dogs. Fisher's exact tests indicated that the likelihood of being euthanized in a UK versus U.S. shelter differed only for the 2 dogs who the UK participants were most likely to consider pit bulls (Dog 9, $p = .04$; Dog 15, $p = .01$). In the United Kingdom, 7.4% of participants reported Dog 9 would be euthanized in their shelters, and 11.1% of participants reported Dog 15 would be. In the United States, 1.9% of participants reported Dog 9 would be euthanized, and 3.1% indicated Dog 15 would be. Within the United States, Fisher's exact tests showed that participants who reported working in areas with BSL were more likely to report that 8 of the 20 dogs would be euthanized than were those who did not report working in areas with BSL ($p < .01$ for Dogs 2, 5, 9, 11, 14, 15, 17, and 20).

TABLE 3
Number of UK and U.S. Participants Who Identified the Following Breeds as Pit Bull-Type Dogs

Breed	Pit Bull in United Kingdom and United States	Unfamiliar in United Kingdom and United States
American Bulldog	United Kingdom: 5 (9.3%)**	United Kingdom: 0 (0%)
	United States: 111 (26.7%)	United States: 0 (0%)
American Staffordshire Terrier	United Kingdom: 33 (61.1%)**	United Kingdom: 3 (5.6%)
	United States: 351 (84.4%)	United States: 0 (0%)
Boxer	United Kingdom: 0 (0%)	United Kingdom: 0 (0%)
	United States: 23 (5.5%)	United States: 0 (0%)
Cane Corso	United Kingdom: 7 (13.0%)	United Kingdom: 5 (9.3%)
	United States: 75 (18.0%)	United States: 20 (4.8%)
Dogo Argentino	United Kingdom: 10 (18.5%)	United Kingdom: 2 (3.7%)
	United States: 79 (19.0%)	United States: 37 (8.9%)
English Bulldog	United Kingdom: 0 (0%)	United Kingdom: 0 (0%)
	United States: 20 (4.8%)	United States: 0 (0%)
English Bull Terrier	United Kingdom: 0 (0%)***	United Kingdom: 0 (0%)
	United States: 62 (14.9%)	United States: 13 (3.1%)
Miniature Bull Terrier	United Kingdom: 1 (1.9%)**	United Kingdom: 3 (5.6%)
	United States: 62 (14.9%)	United States: 30 (7.2%)
Presa Canario	United Kingdom: 5 (9.3%)	United Kingdom: 10 (18.5%)
	United States: 76 (18.3%)	United States: 36 (8.7%)
Staffordshire Bull Terrier	United Kingdom: 1 (1.9%)***	United Kingdom: 0 (0%)
	United States: 285 (68.5%)	United States: 13 (3.1%)

Note. The percentage of participants from each country who identified the breeds as pit bull-type dogs is in parentheses.

Asterisks indicate breeds that were significantly more likely to be considered pit bulls by U.S. participants than by UK participants according to chi-square analyses (**$p < .01$, ***$p < .001$). When the number of expected values in any cell was less than 5, the Fisher's exact test was used in lieu of the chi-square test.

The number and percentage of participants who were unfamiliar with each breed are listed in the last column.

Criteria Used to Determine Breed

A number of factors entered into participants' decision-making processes when determining which breed(s) should be assigned to each dog pictured. The majority of responses were dominated by describing a dog's physical features. Physical traits commonly referenced included the dog's size, estimated weight, stance, body conformation, musculature, legs, paws, chest, and tail.

The coat length, texture, and color were also mentioned in many responses. For instance, one participant reported that the "sleeky shiny short coat" was an identifying feature of one of the dogs most commonly identified as a Staffordshire bull terrier or pit bull mix (Dog 9). Another participant commented "the two brown marks above the eyes" were important features used for identifying the dog who was most commonly considered a Rottweiler mix (Dog 19), and another participant concluded that the dog most commonly thought to be a Labrador (Dog 12) was a mix based on the dog's coloring: "white markings says mix."

The head, skull shape, and face were mentioned frequently, as were the ears. Responses included descriptions such as "rose ears" and "the set of ears suggest a cross." In addition, the eyes, nose, muzzle, mouth, and jowls factored into decisions. Cosmetic alterations that

TABLE 4
Number of U.S. Participants in Places With and Without BSL
Who Identified the Dogs Pictured as Pit Bulls

Picture	No BSL	BSL
1	5 (1.4%)	0 (0%)
2	63 (17.1%)	10 (22.7%)
3	4 (1.1%)	0 (0%)
4	6 (1.6%)	0 (0%)
5	299 (81%)	32 (72.2%)
6	24 (6.5%)	1 (2.3%)
7	147 (39.8%)	13 (29.5%)
8	3 (0.8%)**	3 (6.8%)
9	315 (85.4%)*	31 (70.5%)
10	3 (0.8%)	0 (0%)
11	260 (70.5%)	31 (70.5%)
12	2 (0.5%)	0 (0%)
13	39 (10.5%)	2 (4.5%)
14	184 (49.9%)	18 (40.9%)
15	312 (84.6%)	39 (88.6%)
16	31 (8.4%)	1 (2.3%)
17	305 (82.7%)	33 (75%)
18	248 (67.2%)*	22 (50%)
19	1 (0.3%)	1 (2.3%)
20	333 (90.2%)	37 (84.1%)

Note. The percentage of participants from each condition who identified the dogs pictured as pit bull dogs is in parentheses. BSL = breed-specific legislation.

Asterisks indicate that the likelihood of a dog being called a pit bull differed between places with and without BSL (*$p < .05$, **$p < .01$).

participants perceived to have been made to some of the dogs pictured, such as cropped ears and docked tails, influenced breed assignment. When tails and ears were difficult to see in the pictures, many commented that it became hard to accurately identify a dog's breed.

Dog 17 was holding his ears flat against his head, and his tail was not visible in the picture. Although many commented the ear set or ear placement helped them identify this dog's breed, several commented that the ears were difficult to see and that the tail could not be seen at all. One respondent noted the following about Dog 17: "Can't see the tail, which I would want to see, and the ears are not in a relaxed position so it is difficult to assign [this dog] to a particular breed."

Not all participants referenced physical features in their responses. Some participants explicitly stated that their decisions were based on previous experience with dogs. One participant noted, "Looks like several pits that have been in our rescue." Other participants referred to the general look of the dog and mentioned the breed standard he or she was thought to resemble most closely. For example, a number of participants reported that Dog 4 met the characteristics of the breed standard for the Boxer. Four participants described the dog most commonly referred to as a Labrador (Dog 12) as having "the goofy look," and one participant described one of the dogs commonly identified as a pit bull (Dog 15) as being "kind of generic looking."

Participants in BSL locales did not explicitly reference their law's criteria regarding what constitutes a pit bull, but some traits mentioned by respondents did appear more frequently among the bull breeds. The phrase "barrel chest" was associated with a number of the bull breeds, including dogs identified primarily as English bulldog, bull terrier, pit bull, and Staffordshire bull terrier. Comments on the "medium" size and the "strong muscle mass" of the dog also appeared often for bull breeds.

"Extreme" and "wide" jowls of the dog were mentioned for bull breeds in particular. Some participants stated that "the pit smile" or "the Staffie smile" influenced their decision regarding breed assignment. In many cases, a dog's brindle color was used to justify identifying a dog as a pit bull. One participant mentioned, "The brindle coloring looks pit." Another wrote, "The brindle color pattern seems pretty common in pit bulls although we do see it in a lot of other breeds."

Among participants who reported working in shelters subject to BSL, 40.7% ($n = 33$) stated they would intentionally label a dog thought to be a mix of a banned breed as a breed that is not banned. The likelihood of doing so did not differ between the United Kingdom and United States, $\chi^2(1) = 1.95$, $p = .16$. A U.S. participant's comment reflected the tendency to avoid identifying a dog as a pit bull or Staffordshire bull terrier: "I would put Lab mix because they get adopted easier, but he looks like he could be Staffie (Staffordshire bull terrier)."

Distinguishing and labeling pit bulls was particularly problematic for UK participants. One participant noted how others might label one of the dogs pictured as a pit bull but expressed reluctance to classify the dog as such: "I think this dog could be considered 'of pit bull type' but I don't see that it would necessarily have any illegal breeds in it. I believe some would say the colouring, particularly of the nose, gives it away as a pit bull but I disagree, as many other breeds could have this." Another participant indicated that a dog's size was sometimes a key difference between Staffordshire bull terriers and pit bull types: "If the dog is too large to be considered a Staffie (Staffordshire bull terrier), it is probably of [pit bull] type though I think these dogs could well be bred from taller and taller Staffies and other legal breeds."

Some participants in the United Kingdom reported asking veterinarians and police for help determining if a dog was a pit bull, and one stated the following: "We would ask the police to assess, and if identified as a pit bull, would euthanize. However, if the police issued a certificate to say not [a pit bull], we would rehome [the dog]." In contrast, one U.S. participant reported using the label pit bull even when a dog was not a pit bull to ensure adopters were aware they may face extra challenges due to adopting a dog who some individuals and businesses may consider a restricted breed: "I feel like it is important to note that while I may see a difference in an American bulldog (or Dogo, etc.), the public (landlords, insurance companies, etc.) lump them all in one category. Therefore, almost for the safety of the dog, sometimes they are labeled [as] American bulldog/pit bull cross so that people adopting will be aware of the fact that landlord, insurance, etc. may discriminate."

DISCUSSION

Our findings indicate a lack of consensus, both between and within the United States and United Kingdom, about what constitutes a pit bull terrier. This conclusion echoes the general complexity and disagreement about dog breed identification found in previously published

literature (Voith et al., 2009, 2013), but our study is the first truly cross-country comparison focused primarily on bull breeds. Ironically, there are marked differences between countries regarding what a pit bull is even though the United Kingdom's Dangerous Dog Act defines pit bull-type dogs according to the American Dog Breeders Association standard of conformation as published in Volume 1, Issue 3 of the *Pit Bull Gazette* in 1977 (DEFRA, 2009).

The findings from this study suggest that shelter, pound, and rescue employees and volunteers in the United Kingdom have a narrower definition of what a pit bull-type dog is. This may be due to differences in legislation between the two countries. Although some U.S. municipalities do have BSL, most do not. Furthermore, BSL in the United States varies greatly from place to place in terms of what constitutes a restricted breed and the extent of the restrictions. Due to standardization of BSL and criteria for pit bull type within the United Kingdom, people who identify breeds may have a more coherent understanding of how to identify pit bull types and are therefore more likely to agree on the breeds. Alternatively, UK shelter workers may expect to see a pit bull more rarely and so may be less inclined to indicate that a dog is a pit bull type unless it is exceptionally clear to them.

In our study, some of the largest differences between UK and U.S. participants' responses to whether each photographed dog was a pit bull were for the two dogs who more than 90% of UK participants considered to be Staffordshire bull terriers (Dogs 11 and 17). A high percentage of UK participants did not consider those two dogs to be pit bulls, whereas a high percentage of U.S. participants did consider them to be pit bulls. This is likely because in the United Kingdom, the Staffordshire bull terrier breed is perceived as separate from the pit bull and is not banned under the Dangerous Dog Act.

Although a higher percentage of American participants residing in municipalities without BSL compared with those living in municipalities with BSL judged 15 of the 20 dogs to be pit bulls, American participants with and without BSL only significantly differed in what they considered a pit bull for 3 of the 20 dogs pictured. The large degree of variation across BSL laws in the United States may explain why the differences in responses by participants in places with and without BSL followed no real pattern and why participants in places with BSL were no more unified in their thoughts regarding what dogs were pit bulls than were participants in places without BSL.

Some locales with BSL entirely ban pit bulls, yet others do not allow individuals to acquire new pit bulls but grandfather into the law pit bulls who already had caregivers when BSL took effect, and still others allow people to keep pit bulls if they meet certain requirements (e.g., acquire liability insurance, spay/neuter and/or muzzle the dogs in public). In addition, because many American homeowner insurance companies will not insure dwellings that contain dogs of particular breeds (Cunningham, 2004), including pit bull types, the decision by shelter staff to label a dog as a pit bull has implications even in places without BSL and may result in inconsistent use of the term pit bull.

It is estimated that 60% of dogs who enter the rescue system are euthanized in both the United Kingdom (Diesel, Smith, & Pfeiffer, 2007) and the United States (Brown, Davidson, & Zuefle, 2013). American participants were more likely to report that their shelters euthanized dogs to manage the shelter population, and UK participants were more likely to report euthanizing dogs because they were of specific breeds and for medical reasons. The likelihood of a dog being euthanized in a U.S. or UK shelter only differed for the two dogs who the highest percentage of UK participants classified as pit bulls. Even so, only a small number of UK

participants indicated that these two dogs would be euthanized if they entered their shelters, and that percentage was nowhere near the percentage of UK participants who considered the dogs to be pit bulls.

This is surprising because one might expect that most UK participants who identified a dog as a pit bull would state that the fate of the dog would be euthanasia because the law does not currently allow for transfer of guardianship of dogs designated as pit bulls (DEFRA, 2009). This finding suggests that UK shelters may still be inclined to adopt out pit bulls, perhaps by labeling them as something other than pit bull, and a number of responses indicated a willingness to do just that. It also suggests, along with the finding that some UK participants reported that they were not subject to any form of BSL, that there may be some misunderstanding among shelter workers in the United Kingdom regarding the Dangerous Dog Act and its rules regarding what dogs can be adopted.

Although there has been a push in recent years within the United States to refer to dogs of unknown parentage as "American shelter dogs" (Marder & Voith, 2010; Simpson, Simpson, & VanKavage, 2012), this was rarely seen. Participants tended to identify dogs as belonging to specific breeds or breed combinations, and they used a vast array of features to determine a dog's breed. Perhaps not surprisingly given the nature of breed standards, most participants referenced a dog's physical features when justifying breed assignment. Others referenced breed standards or concluded a dog was a particular breed because dogs similar to the one pictured had gone through their shelter and had been labeled that breed by other staff members.

Participants working in shelters that were subject to BSL did not reference explicitly their law's criteria regarding what constitutes a pit bull. Interestingly, some participants felt they had enough information from the pictures provided to conclude each dog's breed or breed mix, yet others saw the very same pictures and commented that some pictures were lacking information that was crucial for deciding breed. That some individuals based decisions on supposed cosmetic changes, such as docked tails and cropped ears, was surprising because such changes are not genetic. The amount of time participants had spent working in a shelter environment might have played a role in how shelter workers made breed assignments, but unfortunately, data regarding number of years spent working in a shelter were not collected.

Our findings have implications for areas where dogs deemed pit bull type are often seized or euthanized due to BSL. Given the discrepancies both within and between countries regarding how shelter workers assign breeds to dogs, particularly among the bull breeds, it is important to recognize the impact that labeling a dog a pit bull may have. Given the speed at which news reports travel, the use of the pit bull label in one locale may impact perceptions of pit bulls in other places, even globally (Cohen & Richardson, 2002).

The results of this study do support the hypothesis that there is a lack of consensus across the United States and between the United States and United Kingdom about what a pit bull-type dog is, but the study did have some limitations. It is possible that labeling the dogs in the first round of photo presentations affected participants' judgment regarding the "pit bull" question in the second round. Participants, however, often answered the "pit bull" question in the affirmative even when they made no mention of pit bull in the open-ended "what breed" question.

Because participants had to identify dog breeds based on a single picture, they had very limited information about each dog. Participants commented that it was difficult to judge the

size of some of the dogs pictured and to clearly see some of the dogs' physical features (e.g., tail, ears). One survey participant noted, however, that the pictures in the survey were "similar to those sent through by dog wardens" to other shelters and rescue organizations and were not unlike many of the pictures of dogs available for adoption that are circulated via social networking and pet adoption websites.

Our data were limited to shelter workers who had access to the Internet and were made aware of the survey as a result of social networking, our recruitment emails, or word of mouth. The variety of U.S. states, UK postal codes, and shelter types represented in the data suggests that our sample was quite diverse in terms of the shelters represented. It is possible, however, that the opinions of shelter staff and volunteers who do not have regular access to the Internet or who are not computer-literate are underrepresented in this survey. Furthermore, the results may not be generalizable to other professions or contexts where breed identity must also be determined.

This study was a preliminary exploration of the perception of what constitutes a pit bull, and it maximized response and completion rates by using photographs to minimize the amount of time it took participants to complete the survey. Future studies could be bolstered by including videos. Behavioral traits are more likely than a dog's breed to determine whether a dog is suitable for adoption and also the type of home in which a dog should be placed (Bollen & Horowitz, 2008), yet countless individuals and organizations are using physical appearance to decide dogs' fates, often on the basis of a single picture and, in some cases, on the breed name listed beside that picture. One participant commented that this study made her "think about the quality of the photos we often get through [the Internet] and the life or death decisions we often make [based] on them."

CONCLUSION

In summary, neither participants within a country nor participants between the United States and United Kingdom strongly agreed on whether a dog was a pit bull, especially if he or she had bull breed features. Furthermore, what was perceived as a Staffordshire bull terrier in the United Kingdom tended to be classified as a pit bull in the United States. Although what is deemed a pit bull is clearly of greater importance within a specific country or within a locale subject to BSL than it is between countries, it does bring into question the validity of determining breed identity based on appearance. Finally, we did not investigate and do not wish to enter into discussion regarding the morality and efficacy of public health legislation based on breed appearance that is intended to prevent dog bites; however, this study does highlight some issues regarding the practical utility of BSL.

ACKNOWLEDGMENTS

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