Exploration of Perceptions of Dog Bites among YouTube™ Viewers and Attributions of Blame

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ABSTRACT Dog bites are a human public health and dog welfare problem. This qualitative study is the first to use YouTube™ to examine how viewers perceive risk of, and attribute blame for, dog bites. Comments underneath 10 videos, chosen to represent a diversity of dog-bite scenarios, were analyzed inductively using thematic analysis. Six themes emerged: 1) Commentators thought that dogs are inherently good-natured but wild animals and emphasized how dogs try to avoid biting people; 2) All recognized breeds of dogs were stereotyped and breed stereotypes were used to shift the blame away from the dog and onto a bite victim, unless the dog identified in a video was a pit bull type. The dog was often blamed in such case; 3) It was argued that a breed limits the extent to which a dog can be trained and controlled; 4) Owners/handlers were often blamed for bites due to their inability to control the dog, and commentators identified the need for appropriate training and socialization in order to control dogs and reduce bite risk; 5) Bite victims were also blamed for the bites when their behavior was perceived as provoking a dog. Although children’s behavior was identified as causing a risk, parents of children bitten in the videos were blamed for bites instead due to their approach to child supervision; 6) Bites in a range of contexts, such as play or when viewers thought that the victim’s behavior provoked a dog, were seen as well-deserved and normal. It was concluded that although comments on publicly available videos need to be interpreted with caution due to a self-selection bias, their analysis can help to identify attitudes and perceptions towards risk around dogs that could aid bite prevention interventions and policies.
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Keywords: blameworthiness, dog bites, human–animal interaction, risk perception, YouTube™

Dogs are a common presence in many societies; for example, 1 in 4 households in the UK own a pet dog (Murray et al., 2010). However, every day in England and Wales at least 20 people are hospitalized due to dog bites (Winter, 2015). Dog bites are a global public health problem (Coppinger & Feinstein, 2015). Aside from the cost to the victim in terms of the physical injuries and emotional distress, dog bites incur an economic burden on: the National Health Service (Mannion & Graham, 2016); businesses whose employees are bitten at work (Langley, 2012); courts that hold hearings regarding dog bites; and the police, as seized dogs are kept in police kennels (Jones, 2015). Moreover, dog bites have a negative impact on the welfare of dogs. A bite can lead to changes in the way a dog is managed, and dogs that bite are more likely to be relinquished to a dog shelter (Kass, New, Scarlett, & Salman, 2001) or euthanized (BVA, 2016) than dogs that do not bite.

Most studies into dog bites are conducted within an epidemiological framework that strives to understand their broad patterns: where and when bites take place and what the characteristics of the victims and the dogs are (Overall & Love, 2001). However, in terms of the prevention of dog bites occurring in the first place, perhaps of more importance are the ways in which people perceive the risk of dog bites; for example, how their understanding of dog and human behavior and their environmental influences shape the way they identify and manage this perceived risk. This has received less attention, but the perception of risk of dog bites is important to explore as personal attitudes and perceptions are associated with subsequent behaviors (Ajzen, 1991), which could include behaviors around dogs. Therefore, greater knowledge of societal and individual attitudes regarding dog bites may help to inform how best to prevent them.

The cultural theory of risk and blame proposed by Mary Douglas and her collaborators informs our study. Douglas (1992) proposed that there are numerous hazards and dangers, but public attention tends to focus on just a few. The patterns of identifying risk and attributing blame are not universal—concerns over danger, risk, and safety are instead informed by the political context, social structures, the media, and moral norms valued within a given society (Douglas, 1992). For instance, in a society where the environment is seen as fragile, nuclear energy may be seen as a risk, whereas in a society where the environment is perceived as robust and capable of re-generating itself, nuclear energy may be perceived primarily as a resource (Douglas & Wildavsky, 1983). Therefore, identification of risk always reflects what a society or a group perceives to be at stake (Douglas & Wildavsky, 1983). Consequently, the process of risk identification contributes to defining what is acceptable, valuable, and normal (Rescher, 1982). These norms are also reinforced by regulating risks and identifying those who can be blamed for them (Rescher, 1982).

A range of factors shape how people understand and predict dog behavior (e.g., Tami & Gallagher, 2009; Wan, Bolger, & Champagne, 2012). Breed familiarity can reduce the perceived risk an individual dog of that breed presents. For example, a lack of experience with bull breeds is linked to being more likely to describe these dogs as aggressive (Clarke, Cooper, & Mills, 2013). Moreover, when the same dog is described as a terrier, people expect it to be more aggressive than when it is classed as a toy breed (Clarke, Mills, & Cooper, 2016), which indicates that people stereotype the risk associated with certain types of dogs and not just particular breeds. Different representations of German Shepherds in photographs and text can also change how individuals assess the risk posed by these dogs (Wells, Morrison, & Hepper,
Breed label alone can influence how dogs are perceived—dogs labelled as pit bulls are rated as more dangerous, less friendly, and less likely to be rehomed by prospective adopters than lookalike dogs presented without a breed label (Gunter, Barber, & Wynne, 2016). This suggests that peoples’ perceptions of breeds/dog types are affected by their prior knowledge and experiences with dogs and the dog’s visual characteristics.

Studies suggest that people perceive and understand dog bites and severity of a bite in different ways, making it difficult to identify universally applicable prevention strategies. For example, a study of women bitten by dogs found that there was not a single definition of a bite (Westgarth & Watkins, 2015). Moreover, in an ethnographic study, practicing vets were found to often re-construct minor bites as “just nips,” and in some cases deny being bitten even when a bite was observed (Sanders, 1994, p. 52). Victims can rationalize bites as “just one of those things,” something expected when interacting with dogs, reflecting a degree of acceptance and apathy regarding dog bites (Westgarth & Watkins, 2015, p. 486). Furthermore, dog owners and dog professionals alike often rationalize aggressive behaviors of dogs and, depending on the context in which it was shown and an owner’s relationship with a dog, can see it as justified (Orritt, Gross, & Hogue, 2015).

Risk and blame have to be understood together, as defining blame is a part of a process of justifying why something poses a risk (Douglas & Wildavsky, 1983). Previous research indicates that bite victims rarely blame the dog—they blame themselves or the owner instead (Westgarth & Watkins, 2015). Tracing how blame is attributed helps to provide insight into bite perception, as to ascribe blame it is necessary to define a causal relationship between different actors—a process by which A harms B (Douglas, 1992).

The aim of this study was to further explore how individuals interpret and give meaning to why they thought dog bites happen, by using YouTube™ videos of bites and the comments left under them. YouTube™ is a video sharing platform that has previously been used to explore users’ perceptions of dog behavior (Burn, 2011; Preston, Shihab, & Volk, 2013) and to study human–dog interactions (Payne, Bennett, & McGreevy, 2016; Salgirli Demirbas et al., 2016). YouTube™ offers a unique opportunity to observe actual bites, and although not all YouTube™ users comment on videos, it presents a chance to study diverse perceptions and interactions that the video provokes. Our analysis was guided by two research questions:

1) What are the perceptions of risk in YouTube™ users’ comments?

2) How, if at all, do YouTube™ viewers attribute blame for the bites?

Here we analyze comments under YouTube™ videos of dog bites to explore what viewers identify as risks during human–dog interaction and how they assign blame for a bite. We discuss our findings with reference to the cultural-symbolic theory of risk and blame.

**Methods**

YouTube™ videos of dog bites were identified using search terms: “dog bite,” “dog attack,” “dog bites baby,” “dog bites man,” “dog bites woman,” “dog bites child,” “dog attacks man,” “dog attacks woman,” “dog attacks child,” and “kid gets bitten.” This search retrieved over 14 million videos, therefore to manage these data, only the first 10 pages corresponding to each of these search terms were watched. The videos were then checked to ensure they depicted a dog bite to a human (defined here as dog holding a person’s body part in the mouth and applying visible pressure, reflected in e.g., the person’s vocalizations or facial expressions...
indicative of pain). One hundred and forty-three videos met these criteria, and 10 videos were then chosen for analysis using purposive sampling to reflect a diversity of bite contexts, victim demographics, variety of dog breeds/types, range of bite severities, and different popularity on YouTube™ (for a summary of the videos, see Table 1). For nine videos, all comments were analyzed; the 10th video had substantially more comments than others so a random 20 pages per year since it was first listed on YouTube™ were analyzed. All comments were included in the transcripts, including the “trolling” or “hating” comments, which often did not relate to the video. Trolling/hating comments are spiteful comments usually left to provoke other users (McCosker, 2014). They were included in the analysis as they provided a context for the

| Description of Video                                                                 | Thumbs Up/ Thumbs Down | Comments/ Views |
|-------------------------------------------------------------------------------------|------------------------|-----------------|
| 1. Two large dogs in a bull-breeds type are attacking a man outdoors. The male victim is bitten in face, arms, legs and abdomen. A number of spectators try to break up the attack, unsuccessfully. One of the dog attacks one of the spectators. | 255 thumbs up, 64 thumbs down | 354 comments, 541,376 views |
| 2. A toddler is running around a dog (a medium-large cross breed) and hitting it with a broomstick. The dog approaches and backs away from the child throughout the clip and bites child's t-shirt and his back. Throughout the clip adults can be heard laughing and talking. | 54 thumbs up, 119 thumbs down | 111 comments, 17,704 views |
| 3. A man is standing with a large dog (in a type of a Rottweiler) on the lead. Another man approaches the dog and the dog bites his arm and pulls, shaking its head. The man tries to break away from the dog and makes a kicking movement towards the dog. A third man appears and separates the dog from the victim with a stick. | 321 thumbs up, 140 thumbs down | 82 comments, 46,334 views |
| 4. The video is filmed inside a flat. A dog trainer interacts with a small dog (described by the owner in the video as a Chihuahua) in the corner of the flat and the dog bites the trainer. | 1,003 thumbs up, 53 thumbs down | 264 comments, 373,981 views |
| 5. The dog (described by the owner in the video as a Husky) is mounting the visitor and when the owner tries to pull him away by holding his collar, he jumps up and bites owner's face. | 104 thumbs up, 53 thumbs down | 53 comments, 49,756 views |
| 6. Two boys are playing with a large dog (in a bull-breeds type) in the garden. One of the boys falls over and the dog bites his hands and legs. The person behind the camera is heard laughing. A woman comes out of the house and pulls the dog away from the boys. | 27 thumbs up, 82 thumbs down | 82 comments, 20,249 views |
| 7. A police officer is walking the dog (in a type of a German Shepherd) through the crowd near a street demonstration. The dog jumps up and bites a passer-by. | 18 thumbs up, 26 thumbs down | 158 comments, 24,444 views |
| 8. A large dog (a cross-breeds) is lying in the corner. A toddler is crawling, touching dogs' legs and vocalizing. The child pulls on the dog's tail and starts climbing onto the dog. The dog growls and bites baby's head. | 11 thumbs up, 24 thumbs down | 74 comments, 42,801 views |
| 9. teenager is kneeling on the floor and slapping dogs' scapulae with left/ right hand in quick succession. The dog (in a type of a Boxer) is heard growling and bites the boy's hand. | 9 thumbs up, 19 thumbs down | 19 comments, 10,080 views |
| 10. A man is squatting next to the dog (in a type of a German Shepherd), petting the dog on the top of the dog's head. The dog handler is kneeling next to them. The man turns to face the dog and puts both hands on the dog's neck, leaning closer to the dog. The dog jumps up and bites his face. | 4,366 thumbs up, 680 thumbs down | 6,265 comments, 4,729,849 views |
interpretation of other comments by highlighting content which provokes particularly emotive responses and areas over which users may disagree. Comments were ordered chronologically and comments posted until March 2016 were included. The earliest video was posted in March 2008 and the latest in January 2016.

Thematic analysis was deemed to be the most suitable method of data analysis as through the process of systematic data coding the key themes around users’ interpretations of videos and perceptions of risk and blame can be identified and summarized (Braun & Clarke, 2014). This type of analysis encourages a flexible approach to defining codes and developing themes (Braun & Clarke, 2014), which we thought was advantageous, given that little theoretical work has been done on working with YouTube™ data.

Analysis was conducted using NVivo software (Castleberry, 2014). To identify key themes within the comments, a third of all comments across all videos were first coded with latent codes; that is, codes that relate to underlying ideas and patterns, line by line. The codes were reviewed, compared, and summarized, and a conceptual coding framework was developed. This framework was applied to all of the data in a recursive manner, reviewing and modifying the framework during the coding process. The prevalent ideas were finally summarized under common themes (Ryan & Bernard, 2003), which we defined as relating to the research questions and capturing an important pattern within the data rather than expressing simple frequency of occurrence (Braun & Clarke, 2014).

Ethical Statement

All videos were in the public domain and were used in accordance with YouTube™ regulations. Therefore, ethical approval from the University Ethics Committee was not required for this project. Prior to the analysis, user names and other elements that could facilitate individual user identification were removed from the document. To protect anonymity of users who would not be able to give consent to be a part of this study, instead of providing links to the videos, the content of the videos is summarized in Table 1.

Results

Six key themes that illustrate viewers’ perceptions were identified: “the nature of a dog,” “controlling dogs,” “breed determinism,” “bad owners/bad parents,” “blaming the victim,” and “normalizing bites.” The themes are presented in Table 2 and discussed below. Risk identification and blame attribution are considered jointly as they were connected in viewers’ comments and often used to justify one another. Unless otherwise specified, the themes were recognized in comments under all videos.

The Nature of a Dog

It was clear from the comments that viewers acknowledged that dogs were a source of risk but rarely blamed them for the bite. Most viewers believed that dogs are inherently good-natured. For example, dogs were often described as “amazing and caring,” “loyal,” “clever,” “loving,” and “pure.” Adult dogs were often referred to as “puppies” and viewers argued that dogs are noble and deserve respect. What it is to be a dog is dichotomized into two parts: when explaining a bite, viewers pointed out that dogs are also “just animals,” “descendants of wolves,” “driven by instincts” and argued that the wild side of dogs, which is out of their control and distinct from their positive nature, is a reason for bites. However, in conflict with this perception, most viewers simultaneously did not see a bite as a behavior that a dog wants to perform. They referred to a dog’s body language (e.g., being still or tense, not wagging the tail,
tuning away from the person) to argue that dogs do whatever they can to avoid biting. There was a mostly positive view of dogs and the conflicting perceptions that dogs both lack agency over their biting behavior and do have control and try not to do it. These perceptions were the basis for deflecting blame for the bite away from the dog. A previous study noted a similar bias in interpreting dog agency: participants identified dogs as in control of their behavior when initiating play but not when biting a person. An analogical bias in agency intention attribution was not observed for human subjects in the same context (Rasmussen & Rajecki, 1995).

**Controlling Dogs**

Some viewers argued that through appropriate training and socialization the wild side of dogs could be brought under control. Training and socialization were therefore seen as a crucial part of dogs’ enculturation into human life; that is, a process by which dogs learn the requirements of living within human culture and behaving in a way that is congruent with its norms. Training and socialization were perceived as social practices that give dogs agency and control over their behavior, if done correctly. However, viewers disagreed over what are the appropriate training and socialization methods and saw some approaches, in particular where a dog was treated like a person or a toy, as inappropriate. One viewer commented:

> Retards who get chihuahuas always treat them like toys instead of living animals, so they always end up acting vile since they’ve never been taught how to behave. (Video no. 4)

Moreover, the effects of training were thought to be reversible and training was often discussed as something that needs constant work. For instance, one user said: “it’s an animal, left untrained it will become a wild animal” (video no. 5), and another user added:

| Common Theme Sub-themes |
|-------------------------|
| **Table 2. Summary of the coding framework.** |
| Common Theme | Sub-themes |
| 1. The nature of a dog | Dog as a wild animal |
| | Lack of agency |
| | Not blameworthy subjects |
| | Idealizing dog’s nature |
| 2. Controlling dogs | Training and socializing |
| | Trained not to be pets |
| 3. Breed determinism | Gene as determining behavior |
| | Faulty genes |
| | Breed as appropriated/ abused |
| | Personal experience |
| 4. Bad owner/ bad parent | Lack of knowledge to control the dog |
| | Lack of skills to control the dog |
| | Lack of physical strength to control the dog |
| | Lack of awareness of what the dog is doing |
| | Personality of the owner impacts the dog |
| | Poor supervision |
| | Lack of control over the child |
| 5. Blaming the victim | Lack of knowledge of dog behavior |
| | Behavior caused the bite |
| 6. Normalizing bites | Questioning risk |
| | Bites as normal |
you need to train that rat over and over again and the moment it slips you need to get back at it or they turn nasty. (Video no. 4)

Safety of dogs was therefore seen as only temporary (as long as they were well trained) and control over them was understood as a dynamic process, a practice that requires constant work to be maintained.

**Breed Determinism**

All breeds or types of dogs that viewers recognized were stereotyped. For instance, some viewers thought that Chihuahuas were aggressive because breeding for a diminutive size compromised the dog's temperament. However, most of the time the stereotypes were used to shift the blame away from a dog and to attribute it to the victim or owner who was thought to be at fault for not knowing about the breed predispositions. For instance, one viewer said:

(...) what idiot walks in front of an agitated German Shepherd. That's like grabbing an electric fence, you don’t (...) do it. (Video no. 7)

Viewers’ reliance on breed stereotypes could lead to a greater acceptance of dangerous behavior in some dogs. This is problematic as a delay in behavior intervention often means a poor prognosis for a behavior improvement (Mills, Dube, & Zulch, 2012).

Blaming dogs for a bite was rare and only occurred when the viewers thought that the dogs involved were Pit bulls or Pit bull types. These sentiments were particularly visible under a video with two large bull-breed type dogs; however, references to this portrayal of pit bulls featured in comments under all videos. For these viewers breed was a limit to how much they thought a dog can be controlled through training, and their behavior was often discussed as inflexible, pre-determined by their genetics and history of being bred for fighting. For example, one viewer commented:

Pit Bulls—all of them—are notoriously vicious and hateful. I’m real tired of the owner/breed theory. They attack people until they are mauled, and are proud of what they’ve accomplished ... (Video no. 1)

Some viewers argued against these stereotypes by sharing stories of owning or interacting with a Pit bull that was “a big softy” and “would never hurt a fly” even when provoked. Historically, within the Western media Pit bulls have been described as hyper-aggressive, vicious, and demonic more often than other breeds (Cohen & Richardson, 2002; McCarthy, 2016).

**Bad Owners, Bad Parents**

Even though the viewers generally recognized the dogs as the source of the bite risk, they usually blamed the owners or victims for bites. Owners were blamed when they were perceived as unable to control a dog, lacking the knowledge or awareness of the dog’s behavior, or having inadequate physical strength to control the dog. For instance, one viewer said:

If that owner didn’t see that coming ... incredible ... He should have instructed the reporter how to approach the dog, as he is supposed to know how these dogs react to certain behavior. (Video no. 10)

Owners who also appeared to be the parents of the children bitten in videos were additionally identified as bad parents and blamed for the bite, even if the bite was also thought to occur due to the child’s behavior:
This is completely the parents fault not the dog!!! Why are u allowing ur child to climb on the fkn dog to begin with this is not appropriate behavior but it is appropriate for the dog to nip n say get the fk off me (…)!!! (Video no. 8)

This viewer lists a number of behaviors that they thought the child did to cause a bite; they attribute blame for the bite to the parents. Viewers blamed the parents for not controlling the child around the dog, not controlling the dog, or simply allowing the interaction to carry on for too long. For instance, a number of bites to children observed were perceived to occur during “play” between the dog and child, and although viewers argued that play bites were not serious and could not cause harm, they still thought that parents should have prevented play bites or interrupted the child–dog interaction earlier.

Blaming the Victim

Victims’ behaviors such as being too close to a dog, walking directly towards a dog, not allowing a dog to have space, and touching a dog’s neck, throat, or top of the head were thought to show that a person lacked knowledge about dog behavior, or willfully ignored it:

You have to be really stupid to walk up to a dog on a leash the way he did and start petting it. (Video no. 3)

Victim behaviors were often discussed as the reasons for a bite. A person showing these behaviors was identified as a cause of the risk and blamed for causing a bite. Furthermore, viewers felt these behaviors to be disrespectful to the dog and perceived the ensuing bite as inevitable and a lesson to learn from. For example, one viewer said:

You can’t blame dog, the [person bitten] deserved what he got (Video no. 7)

Bites as a Normal Part of Human–Dog Interactions

Viewers downplayed the risk of bites in some contexts, in particular play. One viewer said:

[B]asically if you want to play with dogs or even act like an alpha dog, you have to be able to take a bite now and then. (Video no. 9)

Play bites were often perceived as a normal and permitted part of human–dog interactions. Viewers felt that what they observed was “not an aggressive bite” (videos no. 6, 9), which suggests that viewers downplayed these bites.

In addition to defining the risk of play bites as low or acceptable, the legitimacy of the risk posed by biting dogs in contexts other than play was also questioned. This is seen in the language users used to describe bites; for instance, some were referred to as “nips” or “nibbles” (e.g., videos 2, 6, 7, 10). Bites in other contexts were also sometimes normalized. For instance, bites that followed from interactions with dogs that were thought to have received specialist training (e.g., for protection or police work) were said to be expected and fair as the dog was perceived to be doing what it was trained for. Some viewers argued that bites by trained dogs are normal, even if they occur outside of the context for which dogs were trained to bite. Other viewers opposed this view, saying that regardless of the specialist training that the dog received it is not acceptable for them to bite outside of these contexts and the owner should always be able to control the dog’s behavior in public. Normalization of bites could be detrimental to bite prevention, as risks that are seen as normal may be perceived as unavoidable, impossible to manage or reduce through changes in behaviors or practices around dogs (Westgarth & Watkins, 2015).
Discussion

In this study, we analyzed comments written in response to 10 YouTube™ videos to explore the perceptions of risk in human–dog interactions and the way blame for bites was attributed.

Dog bites result from a complex integration of factors such as dog and human behavior, their history, knowledge, and the environment in which the interactions are taking place (Mills et al., 2012). A dog that frequently interacts with a child safely may bite the same child in a course of routine interactions if, for instance, it experienced something distressing prior to meeting the child (e.g., loud noises). Although each of these elements could potentially be used to explain why the bite occurred and to attribute blame for it, here we observed that YouTube™ users focus primarily on a person’s behavior around the dog, and how child–dog interactions are supervised, but with some allowance for the dog’s nature, breed, training, and socialization. The comments on YouTube™ reflect therefore what viewers perceived as important risks in human–dog interactions (Douglas & Wildavsky, 1983). Risk of bites and attribution of blame for bites was perceived in a reductive manner and becomes seen as more concrete, predictable, and well understood than they may actually be. For instance, dogs that were trained and socialized were perceived as safe and those that lacked training were perceived as a risk. Perception of risk was also aligned with dog breed, whereas evidence suggests that within-breed variation in behavior is substantial (Mehrkam & Wynne, 2014); thus, using breed to predict risk may be inaccurate. Joffe (1999) argued that people discuss risk in a way that helps them to feel protected from a threat, rather than to reflect facts or cold calculations and simplifying and reducing the complexity of risk of bites to individual factors could achieve this aim. The focus on breed specifically can also be explained with reference to the theory of risk (Douglas & Wildavsky, 1983), which states that opinions regarding what constitutes risk depend on what a person or a social group considers as normal and valuable. Therefore, for instance, viewers who like or know Pit bulls might be less likely to blame the breed as they value these dogs (Clarke et al., 2013), whereas viewers unfamiliar with the breed may emphasize risk posed by the breed itself. Overall, viewers’ perceptions share similarities with the risk factors for bites identified through epidemiological studies; that is, dogs’ demographic characteristics, interactions preceding the bite, victim demographics, the relationship between the person and the dog, and features of the physical environment where the interactions are taking place (Overall & Love, 2001).

The understanding of risk and blame is usually dependent on the cultural and social context within which the judgement is made (Douglas & Wildavsky, 1983). This could not be fully explored here as it was not possible to contextualize the comments of YouTube™ users, which is a limitation of this study. However, as YouTube™ attracts viewers from around the world, the cultural diversity could play a part in differences in perceptions regarding, for example, breed determinism, normalcy of bites, or the extent to which an individual can be held accountable for their behavior. Moreover, given that reasons for dog bites may not always be clear, disagreements and contradictions regarding what constitutes risk, why bites occur, and who should be blamed are to be expected. Previous research suggests that many bites may not always be easily prevented; for instance, because the victim did not know what they were doing before the bite or what provoked it, or they did know it was a risk situation but continued anyway for various reasons (Westgarth & Watkins, 2015). In contrast, our analysis suggests that dog bites are perceived to be avoidable accidents and those thought to be responsible for them (e.g., parents or owners of dogs) are blamed. This may be detrimental to risk reduction as it may encourage stigmatization of bite victims and owners of dogs that bite,
which can discourage them from seeking help or reporting bites. The multiplicity of views regarding why bites occur and who is responsible for maintaining safety make the development of a bite prevention campaign challenging, and illustrates the need for any such campaign to be audience-specific and multi-level.

Following from the cultural-symbolic theory of risk, the pattern of blame attribution for dog bites reflects viewers’ understanding of the causal mechanisms behind bites (Douglas & Wildavsky, 1983). Here, these mechanisms included: victim’s behavior and owner’s ability to control the dog which was perceived as conditional on owner’s personality, knowledge of dog behavior, dog handling skills, and physical strength. Although risk identification was used to articulate blame attribution, risk and blame were also seen as separate. Dogs and children were identified as sources of risk, but with the exception of pit bulls, the blame for the bite was not attributed to them. The bite victims, their parents, or dog owners were blamed instead. Shaver (1985) argued that an actor has to be perceived as being responsible in order to be blamed. To do so, the actor has to be aware of the consequences of their actions, able to act differently in the given circumstances, and the person judging needs to be sure that the actor’s actions were not accidental (Shaver, 1985). It is clear from viewers’ comments that they do not see dogs or children as responsible for a bite in this sense and do not blame either of them. Risk management was nonetheless seen largely as an individual responsibility. For example, viewers argued that through knowledge of dog behavior, training and socialization, and appropriate control over one’s own behavior around dogs, individuals could prevent bites. The prevalence of dog bites is correlated with an area’s levels of economic deprivation, with more underprivileged areas observing more bites (Winter, 2015). This suggests that structural factors also contribute to bite risk and understanding these is important for bite prevention. Emphasis on individual responsibility for bites makes it hard to consider the complexities of structural factors influencing dog bites; for example, socio-economic circumstances which lead to a situation in which training a dog to be aggressive may be perceived as necessary. Moreover, public health prevention approaches that strive to change individual behaviors are far less successful than programs that address underlying causes at a population level (Frieden, 2010). In the case of dog bites, structural interventions could include, for example, selective breeding of dogs with stable temperaments, policies regarding muzzling and exercising dogs in public and fencing used to secure powerful breeds when in the yard, or programs that facilitate structured socialization and training. Future research into dog bites should explore how the structural factors could help to explain inequalities in bite risk, so that these can be addressed. Efforts should also be made to develop policies that operate at a population level and to shift the perception of bite prevention as a solely individual responsibility. Support systems should also be developed for owners of dogs that have bitten as well as dog bite victims and parents of children who have been bitten.

Strengths and Limitations

It is difficult to assess how generally representative the population of YouTube™ users we studied is. However, YouTube™ users represent a demographically diverse population in respect to gender, age, ethnicity, and nationality (Ulges, Borth, & Koch, 2013), which suggests that the range of perceptions we studied is fairly broad. Viewers can also respond to each other’s comments and this dialogue can help to illustrate the lines of disagreement. Moreover, comments are likely to be typed up soon after viewing the video, and as users use aliases and pseudonyms, they can be less self-moderated than comments offered in a face-to-face interview.
Nevertheless, as it is impossible to further clarify users’ comments, it is sometimes difficult to separate trolling comments from strong views, and a number of comments were ambiguous. Further, not all YouTube™ users watch videos of dog bites, and even fewer leave comments. Moreover, only comments typed in English were analyzed here and it is plausible that perceptions of non-native (English) speakers were different to those analyzed. The sample used here may also be biased due to self-selection as not everyone uses YouTube™ and leaves comments under videos. Finally, although a large number of comments was analyzed, our study only examined 10 videos. Future work should use qualitative approaches to further explore perception of dog bites and risk in human–dog interactions, taking into account individual contexts.

Conclusions

In this study we identified the perceptions of risk in YouTube™ users’ comments and patterns of blame attribution for dog bites. We argue that the perception of risk in dog bites is a subjective, culturally-specific process and that the way in which blame for bites is assigned reflects what an individual considers to be a reason behind a bite. Viewers rarely blamed dogs for the bite as they did not see dogs as agents responsible for their behavior. Dog owners and bite victims were blamed instead, as they were perceived as able to prevent a bite through control and lack of provocation. Dog bites and bite prevention were seen as largely of individual responsibility, and risk of bites was often seen as simple and the interplay between multiple contributing factors was rarely acknowledged. Although YouTube™ videos need to be carefully interpreted, their analysis can help to identify attitudes and perceptions of risk around dogs that could aid bite prevention interventions and policies. Further consideration needs to be given to how individuals perceive responsibility and how they attribute blame for the bite incidents, as this could have a significant impact on the bite prevention messages. We suggest that more recognition needs to be given to bites as complex events that cannot be prevented through simple changes in individual behavior. Instead, a structural approach to bite prevention may be required.

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Conflicts of Interest

Sara Owczarczak-Garstecka, Rob Christley, and Carri Westgarth have previously been bitten by dogs. No other potential conflict of interest was reported by the authors.

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