

# Aggressive conflicts amongst dogs and factors affecting them

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## Abstract

Over one year, 206 dog owners were questioned in a veterinary clinic. The survey included two groups: 151 owners who visited the clinic because of an injury to their dog caused by another dog and 55 people who owned dogs that caused injuries to others. The questioning served to compare aggressors and victims of dog fights. The form contained 43 questions concerning the dog, the owner, and the incident of intraspecific aggression.

The results reveal that both groups, victim and aggressor, showed regularities regarding the breeds, gender, and process of the fight. Important factors include housing conditions, criteria concerning the selection of a dog, and the dog's training. Significant differences were found comparing the owners of aggressors and their victims, including the owner's gender, profession, age, his/her attitude towards dogs, the selection of a specific breed, training methods, the purpose of keeping a dog, and previous experiences owning a dog.

Further conclusions were drawn regarding the time and location of the incidents. Their influence on a potential solution to the problem caused by aggressive dogs is discussed.

*Keywords:* Dog; Intraspecific aggression; Dog-owner relationship; Aggressor; Victim

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## 1. Introduction

Canine aggression represents a multifactorial process. For evaluation of all factors, it is necessary to collect and analyze information regarding the dogs that are involved, their owners, the location, and course of events. Since most studies have focused on the suspected aggressor of a dog fight, it seems necessary to put more emphasis on additional factors, including the victim. A comparable development can be seen in the statistics of criminals. In the past research focused mainly on the role of the aggressor. The question why someone happens to be a victim has gained attention within the last decade. For clarification of this question regarding canine aggression, owners of dogs

that bit another dog or were bitten themselves were asked to participate in a study on reasons, backgrounds and chain of events of dog fights in a city. The results should serve to prevent problems caused by so-called canine aggressiveness and to provide suggestions for an improvement of the current situation. Therefore, the main focus does not involve the spectacular individual case, but all factors, leading to the rather prejudiced diagnosis: 'aggressive dog'.

## 2. Breed-related problems

A large variety of papers regarding intraspecific aggression is found in the literature. More recently, the extensive discussion of so-called 'fighting-dogs' by the German and British media, has led to controversial public opinions. In some cases, it has been suggested that these dogs are generally endangering the public. Some breeds are considered 'evil' and dangerous, which has resulted in the suggestion to prohibit ownership of any dog belonging to the specific breed. This statement does not take the individual situation into consideration. The other party, mostly owners of dogs that are considered to be 'fighting-dogs', tries to deny the existence of potentially aggressive breeds and insists that accidents are basically rare and harmless. Due to public pressure, several German states have issued regulations preventing public endangerment by aggressive dogs. These regulations include definitions of 'dangerous' breeds which vary locally. Specific dogs have to be kept on leash or muzzled in public. In some cases, one must apply for permission to keep or breed the dogs listed in the regulations, which may be generally denied.

A retrospective study of all cases of canine aggression registered between 1986 and 1991 in Munich showed that aggressors were predominantly found amongst German Shepherds and German Shepherd mongrels, Rottweilers, Great Danes, Boxers, Doberman Pinschers, and Bull Terriers (Unshelm et al., 1993). Statistics published by the city council of Cologne, Germany, showed that in most cases the aggressors were found amongst certain breeds, such as the German Shepherd, Rottweiler, Giant Schnauzer, Great Dane, Boxer, and Doberman Pinscher (City of Cologne, 1991) Stadt Köln, 1991. This survey also included data on legal actions taken against owners of dogs which caused injuries to people in Dortmund, Germany, between 1988 and 1990. The aggressors were mainly German Shepherds, Mongrels, Rottweilers and Bull Terriers.

The Ministry of Internal Affairs of the German state of Nordrhein Westfalen Landesregierung Nordrhein-Westfalen, 1990 pronounced that during 1990, 34 dogs were shot by police officers after endangering, injuring, or lethally injuring humans. This group included 16 German Shepherds, five Pit Bull Terriers, three Boxers, two Rottweilers and two Bernese Mountain dogs.

Becker (1993) reported that nine out of 18 attacks on a person which required his testimony as an expert witness, involved German Shepherds and German Shepherd mongrels.

Statistics of veterinarians on dogs that had to be euthanized because of their aggressiveness, indicate the potential danger represented by certain breeds. Studying complaints about canine aggressiveness within her own and a neighbouring veterinary

clinic, Rehage (1992) found that red Cocker Spaniels, followed by Rottweilers had to be put down more frequently than one would expect compared with the frequency of breed occurrence within the German dog population. Besides the involvement of certain breeds, it seems that the location of a fight, the use of a leash and the owner's behaviour is of importance. Statistics published by an Austrian insurance company show that in 31.8% of the cases an aggressive incident occurred within the dog's own territory, 30.6% took place within the neighbourhood, and 37.6% in an unfamiliar area. A total of 52.6% of these dogs were off leash (Ternon, 1992).

Our own studies show that dog fights occur predominantly in public, e.g. on streets and side walks (74.8%); in parks (9.2%); in public buildings (8%); as well as in private locations and playgrounds (6%). Sixty-eight percent of the dogs were off leash, of which 8.7% were found to be roaming without their owner (Unshelm et al., 1993).

A total of 70% of 1532 dog bites registered in the city of Berlin, Germany, occurred while the dogs were off leash (Kolbe, 1983), and 15.3% of the cases involved dogs that had previously been involved in fights. However, in Munich, Germany, one third of the dogs involved in an aggressive incident had shown similar behaviour once before, and one third had previously been involved in a fight at least twice.

The majority of publications emphasize that canine aggressiveness presents a multi-factorial event. The dog owners, their own behaviour, and their reasons for selecting a certain breed are essential factors that have to be taken into consideration.

Only limited information on the victims of aggressive dogs and their owners is available. The cases of canine aggression directed against children commonly attract a lot of attention. Most cases involve the family's own dog, or take place when a dog is tied outside a store, waiting for the owner to return. Common causes include a lack of education of the children and insufficient training of the dog by the parent and/or owner. The statistics published by the 'German Society for the Prevention of Cruelty to Children' (1986) have to be regarded with caution, since they are based on an assortment of newspaper and journal articles.

### **3. Animals, material and methods**

Within an observation period of one year, 206 dog owners answered a questionnaire while visiting a veterinary clinic in Frankfurt on Main, Germany. This group consisted of two categories of owners: (1) People ( $n = 151$ ) presenting their dog because of an injury caused by another dog; (2) People ( $n = 55$ ) presenting a dog which had initiated a dog fight and requiring the help of a veterinarian. Evaluation of the severity of the injury served as an indicator or measure of aggression level. Although the term 'intraspecific aggression' may incorporate more than the fight itself, it was necessary to define an objective method to evaluate the data provided, which naturally contained very emotional statements.

To draw a representative picture of the situation, we attempted to collect data from different groups of owners with respect to their social background. We therefore chose a 24 h emergency clinic treating the dogs of clients from different areas of a large city. A standardized questionnaire was used to collect the data to guarantee continuity and

objectivity. For the comparison of dogs that had bit another dog and those that were bitten by others, owners of both groups were included. For simplicity, they will be called 'aggressors' and 'victims'.

The questionnaire contained 43 items, subdivided into five areas. The first part included the signalement of the dog. Secondly, the owners were asked about the acquisition of the animal, the age of the dog at the time of the purchase, the owner's reasons for choosing the specific breed and gender, and the dog's role within the household. The third part of the questionnaire dealt with information regarding the owners, as well as the character, behaviour, and obedience of the dog. In the fourth part, the owners answered questions about their daily interaction with the dog. Part five included detailed questions regarding the time, location and behaviour of dog and the owner during the aggressive incident. The owners were asked about their attempts to intervene, their willingness to take responsibility, and the kind and intensity of injuries to both aggressor and victim. In addition, the owners were asked if one of the animals was kept on a leash during the fight, and if their dog was bitten or had bitten another dog previously.

Depending on the individual question, information regarding the aggressor ( $n = 55$ ) and the victim ( $n = 151$ ) was compared, or presented as one group, in which case the sample size was  $n = 206$ .

#### 4. Results and discussion

The main focus of this study was directed to breed, gender, origin, and training of both victim and aggressor. Regarding the fight itself, the main interest was in the location, time, course of events, and the question of whether a fight could have been prevented if the dogs had been kept on a leash.

Since whether a dog happens to be a victim or an aggressor is probably linked to the owner's personality and behaviour, it is interesting to see if there is a significant difference between the owners of dogs that have been aggressors and those that have been victims.

Table 1 includes a list of victims and aggressors, or dogs that have been bitten and dogs that bit another dog. Percentages are of the total number of cases seen ( $n = 206$ ). Interpretating the number of dogs of each breed that has been involved in a dog fight relative to the number of dogs belonging to a specific breed in Germany requires certain caution. Therefore, Table 2 includes the percentage of occurrence of the most common breeds of dogs involved in fights for victims as well as aggressors. This distribution is compared with the number (in percent) of dogs per breed registered by the 'Verband für das Deutsche Hundewesen, VDH' VDH, 1986-1991. Compared with the numbers of pure bred dogs registered in Germany, German Shepherds, Rottweilers, Hovawarts, Great Danes, Doberman Pinschers and Boxers are over-represented within the group of aggressors. So-called 'fighting dog breeds', including Bull Terriers, Staffordshire Terriers, American Staffordshire Terriers, and Pit Bull Terriers, are found to be the aggressor in 8.2% of the fights, again indicating their over-representations amongst the aggressors.

Victims of aggressive dogs are mostly Dachshunds, Poodles, Doberman Pinschers,

Cocker Spaniels, Boxers, Yorkshire Terriers and West Highland Terriers. Since mongrels are not registered by the VDH it is not possible to make a judgment regarding the likelihood of their involvement in dog fights in relation to their distribution within the population.

The distribution of the victims' and aggressors' genders is included in Fig. 1. Victims as well as aggressors are mainly to be found amongst intact male dogs.

The background of the dogs is illustrated in Fig. 2, illustrating that compared with the relatively low percentage of dogs that were bitten (39.7%), many dogs that caused an injury were purchased from a breeder (61.8%). Dogs acquired from an animal shelter or friends, are more frequently found within the group of victims. These results indicate that the systematic selection of a specific breed and a matching breeder represents an important factor in determining whether a dog will belong to the group of aggressors in case of a confrontation.

About 67% of the owners report that their dog has a tendency to attack others (Fig. 3). This finding emphasizes the fact that the problem is caused by dogs that fight repeatedly, involving the role played by the dog, as well as the influence of the owner. Eighty-eight percent of the dogs involved in this study were found to be involved in more than one event of intraspecific aggression. Therefore, it is obvious that the responsibility for the problem of canine aggressiveness rests with a considerably smaller percentage of aggressive dogs and their owners. Measures for the prevention of this problem should be taken accordingly.

The dog's management by the owner has a clear impact on its behaviour (Fig. 4). A dog off leash behaves significantly differently from one kept on a leash, as well in the group of aggressors as in the group of victims. However, this picture might be influenced by the fact that the decision to keep the dog on a leash might be caused by potential aggressiveness. A lack of appropriate social interaction with con-specifics supports the dog's aggressive tendencies and may subsequently lead to behavioural problems. The present results show that 44% of the aggressors and victims of dog fights had few interactions with conspecifics between the age of 5 weeks and 5 months. Within this group, 35.5% of the owners reported that their dogs attack others occasionally. Dogs that grew up with another dog show this behaviour infrequently (7.3%). Thirty-one percent of dogs involved in a fight were known to be enemies previously. Therefore, the behaviour did not occur unexpectedly, and a fight could have been prevented by the owners, if they had intervened in time.

The commonly stated observation that dog fights occur more frequently if only one animal is kept on a leash was not well-supported by these data (Fig. 5). In the majority of the cases (56.3%) both dogs, aggressor and victim, were off leash. However, the data also indicated that the problem will not be completely solved with a leash law, since 13.6% of the aggressors and 35% of the victims were kept on a leash when the fight occurred. This finding emphasizes the role played by the owners in the case of a fight.

Fig. 6 illustrates that dogs which bite another dog are owned predominately by males. The dogs that belong in the group of victims of dog fights are mostly walked by a women. Therefore, we find that women own more dogs that are bitten by others than dogs that bite. Dogs owned and cared for by the entire family are for the most part found in the group of victims.

Table 1  
Breed distribution of aggressors and victims

Section	Breed distribution	Aggressor number(total)	%	Victim number (total)	%
<i>Sheep dogs</i>					
	German Shepherd	73	35.4	14	6.8
	Shepherd-Mongrel	15	7.3	4	1.9
	Longhaired German Shepherd	1	0.5	-	-
	White German Shepherd	-	-	2	1
	Belgian Shepherd Dog	-	-	1	0.5
	Old English Sheepdog	1	0.5	1	0.5
	Collie	-	-	1	0.5
	Bearded Collie	-	-	1	0.5
<i>Mastiffs</i>					
	Hovawart	6	2.9	4	1.9
	Great Dane	6	2.9	-	-
	Boxer	6	2.9	7	3.4
	Newfoundland	1	0.5	-	-
	Saint-Bernard	1	0.5	-	-
<i>Pinschers and Schnauzers</i>					
	Doberman Pinscher	5	2.4	8	3.9
	Giant Schnauzer	3	1.5	5	2.4
	Standard Schnauzer	3	1.5	4	1.9
	Miniature Schnauzer	-	-	4	1.9
<i>Sennenhunds and Cattle Dogs</i>					
	Rottweiler	7	3.4	1	0.5
	Rottweiler-crossbred	3	1.5	-	-
	Bernese Mountain Dog	3	1.5	1	0.5
<i>Terriers</i>					
	Bullterrier	5	2.4	-	-
	Staffordshire Bull Terrier	5	2.4	1	0.5
	American Staffordshire Terrier	2	1	-	-
	West Highland White Terrier	1	0.5	5	2.4
	Scottish Terrier	-	-	2	1
	Yorkshire-Terrier	-	-	6	2.9
	German Hunting Terrier	-	-	1	0.5
	Fox Terrier	-	-	2	1
	Airedale Terrier	-	-	3	1.5
<i>Springers and Retrievers</i>					
	Golden Retriever	4	1.9	1	0.5
	Cocker Spaniel	3	1.5	8	3.9
	Labrador Retriever	-	-	2	1
<i>Pointers</i>					
	'Hunting dog'	2	1	2	1
	German Shorthaired and Wirehaired Pointer	2	1	2	1

Table 1 (continued)

Section	Breed distribution	Aggressor number(total)	%	Victim number (total)	%
<i>Pointers</i>					
	Small and Large Munsterländer	2	1	3	1.5
	English and Irish Setter	2	1	2	1
	Weimaraner	1	0.5	-	-
	English Pointer	-	-	1	0.5
<i>Poodles</i>					
	Standard and Miniature Poodle	3	1.5	14	6.8
<i>Nordic Dogs</i>					
	Alaskan Malamute	2	1	-	-
	Chow-Chow	1	0.5	-	-
	Husky	1	0.5	1	0.5
<i>Scent- and Bloodhounds</i>					
	Long-, Short- Roughaired Dachshund	3	1.5	17	8.3
	Beagle	-	-	5	3.4
	Dalmatian	-	-	1	0.5
<i>Northern and Southern Windhounds</i>					
	Afghan	2	1	1	0.5
	Irish Wolfhound	1	0.5	-	-
	Greyhound	-	-	1	0.5
<i>Points</i>					
	Wolf Spitz	1	0.5	1	0.5
<i>Herder Dogs</i>					
	Pyrenean Mountain Dog	-	-	2	1
<i>Other breeds</i>					
	Pit Bull Terrier	5	2.4	-	-
	Rhodesian Ridgeback	4	1.9	2	1
	Pekingese	-	-	3	1.5
	Akita Inu	-	-	2	1
<i>Mongrels</i>					
	Large (> 20 kg)	9	4.4	15	7.3
	Middle (10–20 kg)	4	1.9	29	14
	Small (< 10 kg)	-	-	6	2.9
<i>Breeds unknown</i>					
		7	3.4	4	1.9
<i>Total number</i>		206	100	203	100

Table 2

Frequency of occurrence of the breeds involved as aggressors and victims in %

	Breeds	Involvement with the authors (%)	Occurrence In Germany (VDH) (%)
<i>Aggressor</i>	German Shepherd	35.4	28.7
	Shepherd-Mongrel	7.3	-
	Bullterrier, Staffordshire Bull	5.8	1.2
	American Staff. Terrier		
	Mongrels > 20 kg	4.4	-
	Rottweiler	3.4	2.8
	Hovawart	2.9	0.8
	Great Dane	2.9	1.2
	Boxer	2.9	2.8
	Doberman Pinscher	2.4	1.2
	Pit Bull Terrier	2.4	-
<i>Victim</i>	Mongrels 10–20 kg	14.0	-
	Dachshund	8.3	17.3
	Mongrels > 20 kg	7.3	-
	German Shepherd	6.8	28.7
	Poodle	6.8	2.8
	Doberman Pinscher	3.9	1.2
	Cocker Spaniel	3.9	2.6
	Boxer	3.4	2.8
	Yorkshire Terrier	2.9	2.1
	Mongrels < 10 kg	2.9	-
	West Highland White Terrier	2.4	1.5

The training of a dog is clearly related to its membership in the group of victims or aggressors. Dogs that bit in the past, were 'trained' by hitting or shaking on certain occasions. Dog owners using training methods involving clear commands, shouting, and

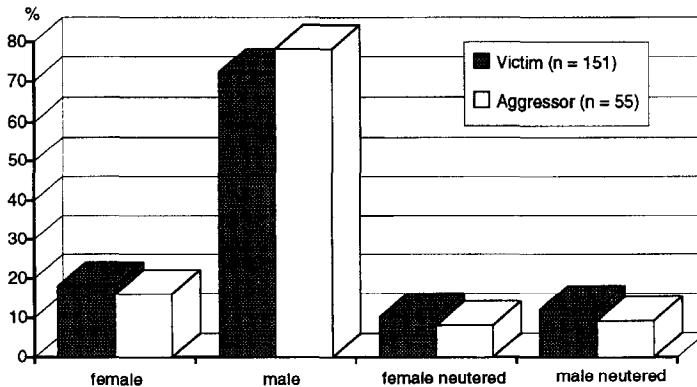


Fig. 1. Distribution of aggressors' and victims' gender.



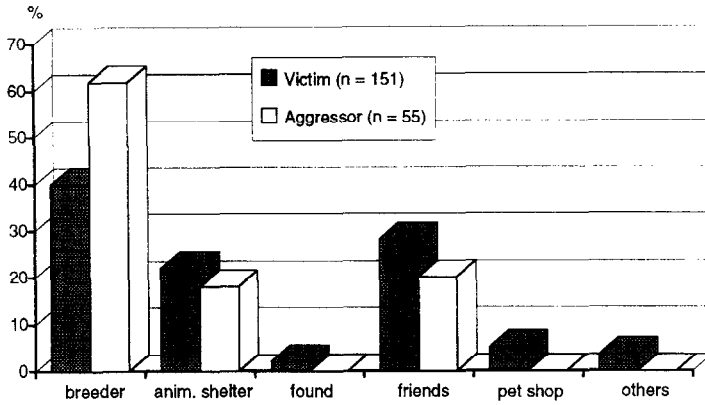


Fig. 2. Origin of dogs.

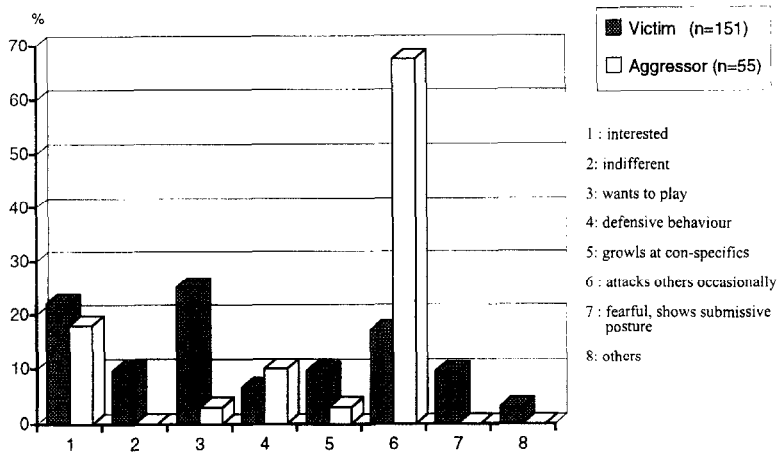


Fig. 3. Behaviour towards con-specifics.

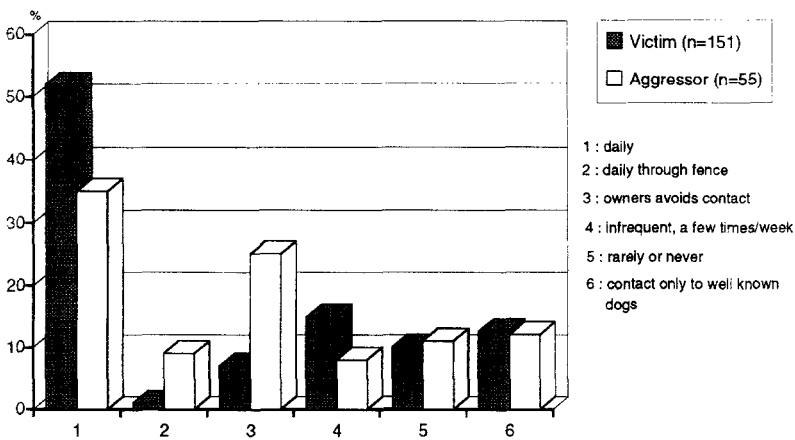


Fig. 4. Frequency of intraspecific contact without leashes.

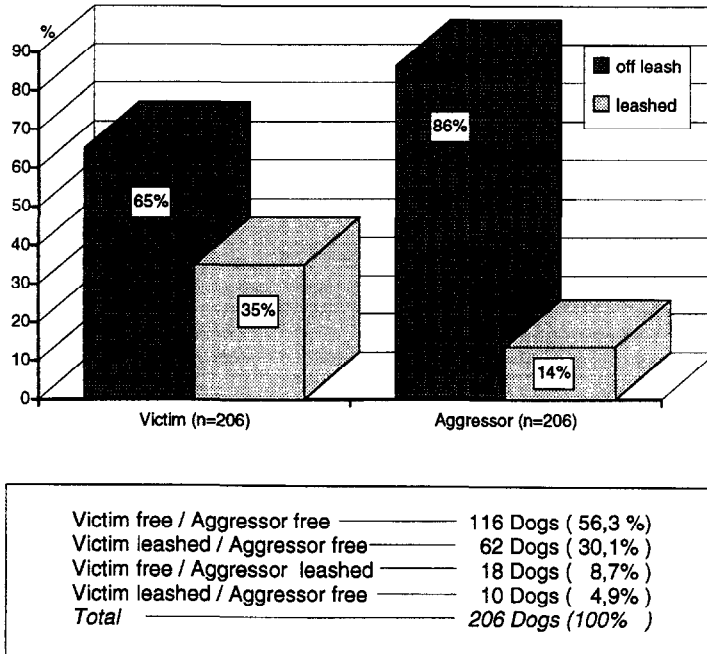


Fig. 5. Were aggressors and victims kept on leashes?

warning the dog with the help of gestures, mostly own dogs that are bitten by others (Fig. 7). Asking dog owners about the importance of obedience training in dogs (Fig. 8), shows that dogs which initiated a fight are mostly owned by persons believing that dogs will get out of control without certain training, or persons that own a dog for a specific

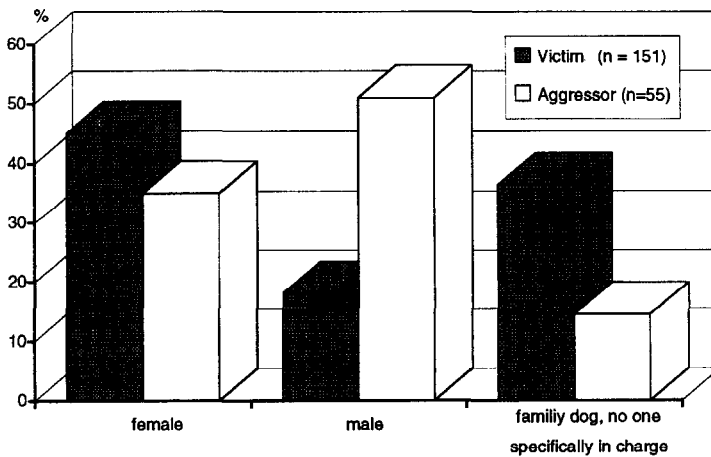


Fig. 6. Owners' gender.

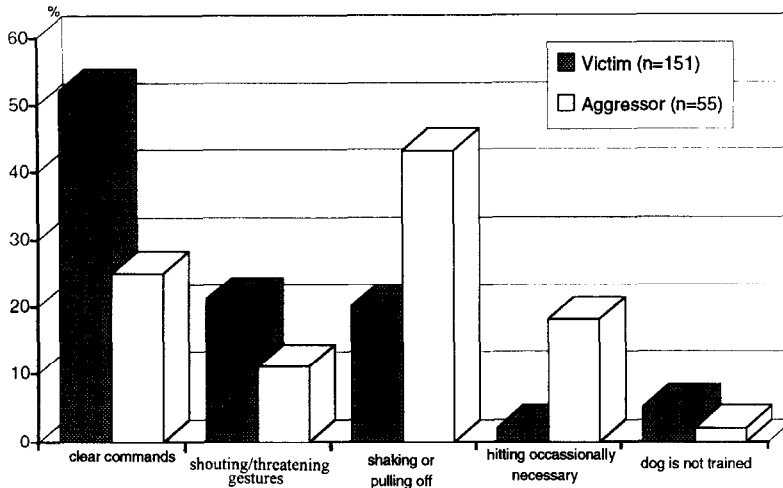


Fig. 7. Training methods.

use. Owners who believe that training should be fun, that it is generally advantageous to have an obedient dog, or even believe that it is irrelevant if a dog is trained or not, will own a dog that is more likely to be the victim of a fight.

The purpose of keeping a dog and the age of the owner are also closely related (Table 3). Owners up to the age of 29 years regard the dog as a full family member. In contrast to this situation, many older dog owners regard a dog as a child substitute. More dog owners within the group of people who are 50 years and older (28%) feel that the dog helps to prevent loneliness, compared with people up to the age of 29 years (9.5%). Dogs that are kept for reasons of security belong mostly to owners between 30 and 49

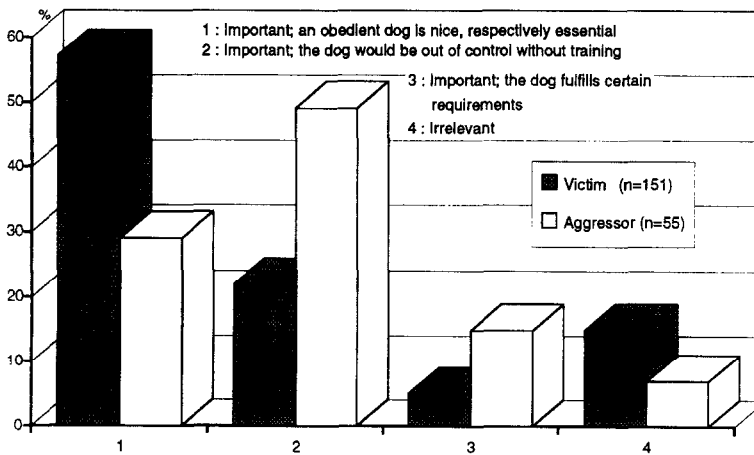


Fig. 8. How important is/was the dog's training to the owner?

Table 3

Comparison of the owners' age and the dogs' function within the household

Age of the owner:	Up to 29	30–49	50
	Age (%)		
<i>Function of the dog</i>			
Full family member	57.1	43.5	36.4
Child replacement/substitute	4.8	14.2	24.1
Helps if owner is lonely	9.5	13.1	28
Partner	9.5	6	5.7
Family protection	4.8	15.8	2.3
More important than family	4.8	1.9	2.3
Only 'domestic animal'	9.5	5.5	1.1
Sum ( $n = 206$ )	100%	100%	100%

years of age. Younger persons emphasize the dog's role for the family. Dogs are rarely regarded as 'just an animal' if the owners belong to the group of 50 years and older, but rather as a companion or partner in life.

Summarizing these results and other qualitative observations on the groups of owners of aggressive dogs and dogs that are bitten by others leads to interesting differences. Dogs that are known to be aggressive are mostly owned by males who work independently or in academics. The owners are typically aged 30 to 39 and they commonly do not develop an emotional relationship with their dogs; they consciously select specific breeds, show interest in Schutzhund training, or purchase dogs with the intention of keeping them for reasons of security. Within this group, the dog's obedience is commonly achieved by the use of physical force. Many of these men have owned dogs for most of their lives. During a dog fight, they tend to behave in a rather passive manner and shout at the animal after the fight has ended. However, 40% of these owners show no reaction whatsoever, even after the fight.

Persons owning so-called 'victims' also have certain characteristics in common: many are women, commonly housewives or recipients of social pensions. Dogs are often kept for the prevention of loneliness. They are usually not selected by breed at the time of the purchase. It is important to many members of this group that the dog provides a feeling of safety. Generally, comparably low amounts of pressure are used during the dog's training. Fewer persons stated that they had always owned dogs, relative to the owners of aggressive dogs. Typically, the dogs that are bitten by others will find consolation from their owners after the fight.

Table 4

Location of the fight

	Public street	Park	Fields and woods	On/in front of own property	On/in front of property of the other dog	In buildings
$n = 206$	54	50	46	25	20	11
%	26.2	24.3	22.3	12.1	9.7	5.3

Table 5  
Time of the fight

	Morning	Noon	Afternoon	Evening	After sunset
<i>n</i> = 206	40	30	97	39	20
%	19.4	14.6	47.1	18.9	9.7

Unrelated to whether the dog is the victim or aggressor in a fight, Tables 4 and 5 show the location and time of fights. Three quarters of all fights take place in public places, such as streets, parks, and fields. Twenty-one percent of the fights occur on the property of one of the owners or close by, and about 5% of all fights took place inside public buildings. Forty-seven percent of the incidents occurred during the afternoon (Table 5), and two thirds of all fights took place during the afternoon or at night, which is probably related to the fact that most owners walk their dogs after work.

Table 6 shows the distribution of aggressors and the degree of injury of the victim. It is remarkable that five out of eight fights which led to the death of the victim involved the clearly over-represented group of fighting dogs. Three lethal injuries were caused by American Staffordshire Terriers, one death was caused by a Bull Terrier, and another dog died after a fight with a Pit Bull Terrier. The remaining three deaths of a dog after a fight were caused by German Shepherds and by a Rottweiler. A similar over-representation of specific breeds can be seen in cases in which the victim suffered serious injuries, caused by German Shepherds and German Shepherd mongrels in more than half of all cases, but also a high number of Bull Terriers, Staffordshire Terriers, American Staffordshire Terriers, and Pit Bull Terriers. One can conclude that the severity of an injury is related to a breed specific aggressiveness. However, it is important to keep in mind that the owner's decision to purchase specific breeds is of great influence, as well as the role of mood induction by the owner.

Table 6  
Inquiries of victims by the most common aggressors

Most common breeds of aggressors	Degree of injury (victim)				
	None	Slight	Middle	Serious	Lethal
German Shepherd ( <i>n</i> = 73)	0	19	36	16	2
Shepherd-Mongrel ( <i>n</i> = 15)	0	8	5	2	0
Hovawart ( <i>n</i> = 6)	0	4	1	1	0
Great Dane ( <i>n</i> = 6)	0	3	2	1	0
Boxer ( <i>n</i> = 6)	0	2	3	1	0
Doberman Pinscher ( <i>n</i> = 5)	0	4	1	0	0
Rottweiler ( <i>n</i> = 7)	0	2	2	2	1
Bullterrier ( <i>n</i> = 5)	0	1	0	3	1
Staffordshire Bull Terrier ( <i>n</i> = 5)	0	0	2	3	0
American Staffordshire Terrier ( <i>n</i> = 5)	0	0	1	1	3
Pit Bull ( <i>n</i> = 5)	0	0	2	2	1
Mongrels ( <i>n</i> = 13)	1	6	6	0	0
Totals ( <i>n</i> = 151)	1	49	61	32	8
%	0.7	32.5	40.4	21.2	5.3

Summarizing the results of the present study, it is clearly shown that not only characteristics of the dogs belonging to the group of victims and aggressors are found (including breed, gender, background, training, and housing), but also typical characteristics of the dog owners. Therefore, it is not enough to issue rigid laws for the prevention of potential and real aggression in dogs, based on a breed classification. These decisions are the result of a pragmatic process in politics, but will not lead to a valid solution of the present problem. Better approaches would include the preventive consultation of a specialist by prospective buyers of a dog, for example a veterinarian. Further progress could be achieved by specific measures by the media, aiming to draw a picture of dog owners that is in contrast to that of a person owning an aggressive dog. This process is not easy, since it is necessary to reach groups of dog owners that are proud of their experience in owning dogs. The complexity of the problem caused by aggressive dogs and the future protection of their victims requires specific measures of persons involved in behaviour therapy and the prevention of problems.

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