

“Bark Parks”—A Study on Interdog Aggression in a Limited-Control Environment

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As limited-control dog parks become more popular, concerns arise about whether these parks encourage interdog aggression. Systematic observations made at 1 park over 72 hr across 8 months found that 28 conflicts or potential conflicts occurred (< 0.5%). Of these, 14 were clear aggressive episodes. Each lasted less than 1 min (< 0.33% of total observation time). There were 14 other incidents of possible aggression that were ambiguous in nature. Each lasted less than 30 sec (< 0.17%). None of these incidents led to serious injury. Of the 177 dogs observed, only 9 were aggressive toward other dogs (5%): 6 aggressors, once each; 2 aggressors, twice each; 1 aggressor, 3 times. Results indicate that aggression in limited-control dog parks may be relatively rare and probably presents only a limited risk to dogs and their caregivers (owners). In part, this may be because owners who frequent dog parks are self-selecting, self-monitoring, and self-limiting in regard to dog aggression.

Limited-control or off-leash dog parks are becoming more popular throughout the United States. As leash laws become more prevalent and more strictly enforced and as human population demands reduce the amount of available free-ranging lands, owners are turning to the “bark park” as an alternative to exercise and socialize their canine companions. Dogs are free to run, play, socialize, explore, and just be dogs. There are more than 1,100 dog parks in the United States and Canada combined (Dogpark.com, 2002). These parks generally consist of 1 or more acres of open grassland surrounded by a chain-link fence. These facilities usually include an “airlock” type gating system (two gates with a

holding area between them) to reduce accidental escapes, several park benches, several trees, and sometimes a fresh water source. We consider these limited-control environments because the dogs are unrestricted in movement except by surrounding fences—or when owners intervene.

Different cities control access to these parks at different levels. Some require an annual fee and evidence that the dog has all current vaccinations (e.g., Indianapolis's Canine Companion Zones). Others simply provide the facility (e.g., Atlanta's Piedmont Park). Generally, no criteria prohibit potentially aggressive dogs from using a park. As more limited-control parks are established, concern has been expressed by some behaviorists (A. Moon-Fanelli, personal communication, September, 12, 2002) and dog trainers that access to these parks increases the risk of interdog aggression and may cause dogs to learn to be more aggressive toward other dogs or humans. However, to date, no scientific research has been published to establish just how frequent and how severe incidences of interdog aggression are at dog parks. This study may be the first systematic project of its kind.

OPERATIONALLY DEFINING AGGRESSION

Determining whether a particular dog–dog interaction is aggressive is dependent on which behaviors are accepted as aggressive and which are accepted under other classifications. Hetts (1999) divided aggressive behaviors into offensive and defensive types and subdivided these two major categories into 11 different subcategories (dominance, possessive, fear, territorial, protective, play, redirected, pain-elicited, maternal, idiopathic, and predatory). Overall (1997) used 12 categories of aggression: maternal, play, fear, pain, protective, interdog-social hierarchy, redirected, food-related, possessive, predatory, dominance, and idiopathic. Borchelt (1983) divided aggression into seven major classifications: fear, dominance, possessive, protective, punishment-elicited, pain-elicited, and predatory aggression. For this study, we needed to distinguish aggressive behaviors from play behaviors and from dominance displays and social greetings. Although these interactions are related, our concern in this study was actual attack behaviors or fights. These interactions are what most concern owners and experts in the use of dog parks.

To discriminate these from social hierarchy and play interactions, we targeted specific differences in body postures, facial features, vocalizations, and behavior (Abrantes, 1997; Hetts, 1999; Milani, 1986; Overall, 1997). The level of interaction is more intense and more invasive in aggressive encounters; instead of solely involving posturing and poses, it involves active pursuit and often physical and painful contact, with threatening behaviors incorporated. The victim's response also differs in aggressive versus nonaggressive social interactions. For example, when an aggressor chases, lunges, or charges, a victim tries to retreat, submit,

or—if attacking back—lunge and charge the aggressor (Beaver, 1981). With play elicitation, “victims” respond either with their own play behaviors or, if uninterested in play, by behaviors that terminate the interaction.

We, therefore, operationally defined aggression as any of several behaviors alone or in combination: charging or lunging at the conspecific with barking or growling; snapping at the conspecific; biting once during which physical contact was made (clamping down); or any of these behaviors combined with the victim being pinned, bitten multiple times, or chased away

METHODS

Subjects

At the Indianapolis Parks and Recreation’s Canine Companion Zone (Broadripple Park), 177 dogs were observed. Dogs became subjects opportunistically—dogs who were at the park during the observation period were used as subjects. Individual subjects were selected at random for observation, with the caveat that different dogs be observed every 10 min (see Procedures section). Dogs ranged in age from 2.5 to 120 months and in size from 3.38 to 33.75 kg. Subjects were 38 pure breeds and 74 mixed breeds. They represented a combination of neutered and intact animals, with 84% of the females and 78% of the males neutered. (See Table 1 for complete demographics on the subject pool.) This study was reviewed and approved by Butler University’s Internal Animal Care and Use Committee. Owners gave verbal approval for observation of their dogs. Verbal approval for conducting this project also was obtained from the Indianapolis Parks and Recreation Department. Information on subject demographics was collected by structured interview, previously reviewed and approved by Butler University’s Internal Review Board.

Environment

The Broadripple Canine Companion Zone is a 2-acre park surrounded by a chain-link fence. The park is level ground and consists of grass and dirt areas with 14 trees, five park benches, and two waste depositories supplied with “pooper scooper” bags. No water is provided in the park, but owners generally share water bottles and bowls with each other’s dogs. Owners also bring toys (balls, tug-o-war ropes) and share these with others’ dogs.

Entry is by electronic key only. Dog owners must pay an annual fee for a key and an identification tag for their dogs, show evidence of current vaccinations for their dogs, and sign a park liability waiver. Occasionally, owners who have not

TABLE 1
Demographics on Canine Subject Pool at Broadripple Canine Companion Zone

	<i>No.</i>	<i>Breeds</i>	<i>Neutered</i>
<i>Types^a</i>			
Terriers	11	Airedale, Norfolk, Wheaton, Jack Russell, Pit Bull, Rat	
Toys	4	Silky, Yorkshire, Pug, Pomeranian	
Sporting	48	Beagle, Irish Setter, German Short Hair Pointer, Golden Retriever, Greyhound, Catahoula, Labrador Retriever, Weimaraner, Vizsla	
Herding	10	Collie, German Shepherd, Shetland Sheepdog, Australian Cattle dog, Australian Shepherd, Old English Sheepdog	
Working	29	Doberman, Great Dane, Great Pyranese, Rhodesian Ridgeback, Rottweiler, Samoyed, American Eskimo, Siberian Husky, Standard Poodle, Boxer Canaan Dog, American Bull, English Bull	
Nonsporting	1	Boston Terrier	
Mixed Breeds	74		
<i>Sex</i>			
Female	84		81
Male	83		65
<i>Age in years</i>			
0 to 1	54		
1 to 2	18		
1 to 3	25		
1 to 4	14		
1 to 5	12		
1 to 6	10		
1 to 7	3		
1 to 8	4		
1 to 9	2		
1 to 10	6		
1 +	1		

^aFrom Alderton (2000).

paid the fee sneak into the park by waiting until someone entering or leaving opens the gate (a case of “act like you belong there and people will think you do”). Dogs younger than 6 months are not supposed to use the park, but this rule is generally not enforced. Children younger than 12 years old are not supposed to enter the park, but this rule also is often ignored and not enforced.

During the work week, the park is at peak use between 4:00 p.m. and 6:30 p.m., hours when people are first off from work but not ready for dinner. As few as 3 (inclement weather) and as many as 30 to 50 dogs were observed in the park during these peak hours. On weekends, use is more scattered throughout the day with

lower overall density at any given time than during these peak weekday hours. Population density is also related to weather.

Procedures

Two or three observers met at the park to collect behavioral data three to five times a week, between 4:00 p.m. and 6:30 p.m., from March 2001 through November 2001 (except during inclement weather). Observations took the form of 10-min focal sampling of individual dogs (for a study on reconciliation behavior by Fortune, Shyan, King, & Coppadge, 2003), unless an aggressive encounter occurred. When an aggressive encounter occurred, focal sampling stopped and all dogs in the conflict were observed. (Postconflict behavior data also were collected but will be presented in a different manuscript by Fortune, Shyan, King, & Coppadge [in preparation] on dog social behavior.)

All aggressive encounters that took place during observation periods were observed and recorded manually and, whenever possible, on videotape. Because of these encounters' opportunistic nature, videotaping was not entirely successful, leading to only partial recordings of each incident. Of the 72 1-hr observation sessions, 44 were videotaped.

Demographic data were also collected on all dogs observed either through focal sampling or during aggressive encounters. Owners answered questions about their dogs' breed, age, sex, neutering, weight, and amount of park use.

RESULTS AND DISCUSSION

Again, all aggressive and potentially aggressive encounters that occurred during observation sessions were recorded. In 72 hr of observations, 28 possible conflicts were observed. These involved 37 of the 177 subjects. Only 12 dogs (< 7%) showed aggression toward other dogs. Of these aggressors, some were repeat transgressors (discussed later). Of these 28 encounters, only 14 were clear, unambiguous conflicts, involving 21 subjects. The other 14 conflicts were ambiguous in nature. We could not determine definitively whether they were truly aggressive encounters or merely rough play. The videotapes of these ambiguous interactions were not clear enough and the episodes were too brief to make this determination. Therefore, the calculation of less than 7% of dogs initiating aggressive conflicts is probably a high estimate, as it is based on 28 conflicts (including all possible, not just clear-cut, conflicts). The actual number of dogs involved in aggression is probably lower.

Each clear aggressive encounter lasted less than 1 min. Each ambiguous aggressive encounter (a “maybe” encounter) lasted less than 30 sec, which was why

we could not determine whether they were really aggressive incidents. Thus, of the total of 4,320 min of collected observations (72 hr), the 21 min dogs spent in aggressive interactions represents < 0.5%, again, a conservatively high estimate. Aggression just is not a large part of what dogs do at this dog park.

Sometimes aggressive encounters were brief because the dogs terminated them quickly. Sometimes they were brief because owners intervened quickly. In no case did we observe an aggressive encounter that, once terminated, was then resumed, nor did we observe or receive reports of damage or wounds. Dogs did sometimes yelp, scream, and whimper when attacked, but wounds were nonexistent.

In the 14 clear conflicts, there were 9 aggressors (with 3 dogs in multiple conflicts). This represents 5% of the total dogs observed. A few patterns were seen in the demographics (as reported by owner interview) of the aggressors when compared to the victims. Aggressors were generally adults, ranging in age from 16 months to 7 years, with 2 juvenile outliers who were 8 and 10 months old, respectively. Victims generally were puppies or young adults, ranging in age from 4 to 12 months, with 2 young adult outliers who were 21 months and 3 years. Aggressors were significantly older than their victims, $F(1, 13) = 12.94, p < .05$, including outlier data. This supports previous findings by Pal, Gosh, and Roy (1998), who found that, in a free-ranging pack, adult dogs initiated conflicts 85% of the time (but see Serpell & Jagoe, 1995).

Five aggressors were female and four aggressors were male. Sherman, Reisner, Taliaferro, and Houpt (1996) found that females started more household fights, and males started more nonhousehold fights. This disagrees with the direction of our findings, but our sample of aggressive dogs is extremely small.

All aggressors were neutered. This is contradictory to some previous reports (Hart & Hart, 1984; Hopkins, Schubert, & Hart, 1976; Overall, 1997), all of which reported a decrease in interdog aggression with neutering, but supports others. Podberscek and Serpell (1997) found that neutered cocker spaniels, both male and female, tended to be more aggressive than intact dogs of the same breed. Three victims were female, two of them neutered. Nine were male, four of them neutered.

Aggressors and victims were not significantly different in size, $F(1,13) = 0.03, p > .05$. One aggressor was small (7.2 kg), six were medium-sized (13.60 to 20.25 kg), and two were large (20.7 to 27.0 kg). One victim was extra small (4.5 kg), two were small (11.25 to 13.50 kg), four were medium-sized (13.60 to 20.25 kg.), three were large (20.7 to 27.0 kg), and two were extra large (> 27.5 kg). Size of animal also did not predict who was the aggressor and who was the victim. Victims were not necessarily smaller than their attackers.

No patterns were found regarding breed or mix in terms of aggression. Instead, aggressive behavior appeared to be a function of individual differences in specific dogs, the most we can conclude from our small sample size of aggressive dogs.

It must be recognized that, at least at the Broadripple Canine Companion Zone, there is also a self-selection process in place. Most owners with dogs who tend to

be conspecific aggressive generally do not come to the park. Those who do tend to keep their dogs under leash control or well separated from other dogs. There also is a self-enforcement or self-policing function. If too many attacks occur, owners of nonaggressive dogs pressure owners of aggressive dogs to leave the park. We observed owners verbally confronting owners of aggressive dogs or physically shunning them by actively taking their dogs to other areas of the park. These behaviors lead to a population bias that tends to minimize the number of aggressive interactions. This may explain why Roll and Unshelm (1997) found that of more than 200 aggressive encounters surveyed, 68% occurred when one or both dogs were off a leash, but the percentage of all aggression interactions occurring off-leash in public parks was quite small (only 9.2%). Their findings were based on surveys answered by owners bringing dogs to be treated for dog-inflicted bite wounds—a potential source of bias. Our findings are based on direct observation, but both studies find similar results.

In conclusion, compared to all other interactions, the number of aggressive encounters in this limited-control park is very small. The animal owners tend to self-select away from aggression. Although these results may not generalize to other parks that may differ in owner or dog demographics, based on location—at this park at least—interdog aggression is not a significant problem.

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