

## RISK FACTORS IN THE MUTUAL RELATIONSHIP BETWEEN CHILDREN AND DOGS

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### Abstract

In 2008, a pilot study trying to find the potential causes of conflicts in the children × dog relationship was realized. This pilot study was triggered by the increasing amount of cases of dog attacks in society, especially dog attacks on the youngest generation (children). The collection of data which monitored awareness about a responsible approach and safe contact with dogs among primary school children (aged 8–12) was conducted from November 2007 to March 2008. The main aim of the research was to map children's knowledge of dog's communication signals, the perception of a child's own authority in the relationship with a dog and the frequency of individual risk activities in their mutual contact. The research study has revealed alarming deficiencies, especially in the knowledge of communication signals and canine body language. The awareness of signs of the two most hazardous communication signals (threat and attack) was very poor.

**Key words:** *child – communication signals – awareness – risk factors – prevention*

### INTRODUCTION

Children are interested in pets even in the current period of personal computers (PC), mobile phones, and other technical conveniences. A living creature is still much more interesting than a non-living character from a PC game (Galajdová 1999).

Even though the general knowledge of children and their universal awareness increases every year, we can see more and more often that they are unaware of the basic ecological rules. Harmony and a responsible attitude toward animals, especially to dogs, which are the favorite companions of our families, definitely belong among these rules.

These are the main reasons why dog attacks on children or children's injuries related to dog bites are starting to become a problem. We can hear very often a

merciless media campaign against so-called "aggressive killer dogs". Only rarely is the situation also viewed from the other point of view. The dog immediately loses its role as man's best friend and becomes an enemy.

Although children generally love animals and especially dogs, they seldom realize the consequences of their behavior. The adults must claim responsibility in such situation. The animal cannot be held responsible!

### MATERIAL AND METHODS

The study tried to find out how children perceive a dog's behavior in relation to themselves. Children in mutual contact with dogs represented the object of the study. The study utilized a socio-ecological model which emphasizes the

importance and positive influence of the environment on people in all age groups. The research study is based on a quantitative method of questioning – the technique of a non-standardized questionnaire. The collected data present the knowledge of 200 primary school children from the South Bohemian Region. The gender distribution among the respondents was even; 1:1. The respondents were limited to children aged 8 to 12 years (“middle school age”). Professor Matějček describes this age as a period when a child’s attitude toward animals undergoes fundamental changes, which may be involved in creating a risk situation (Matějček 2007b).

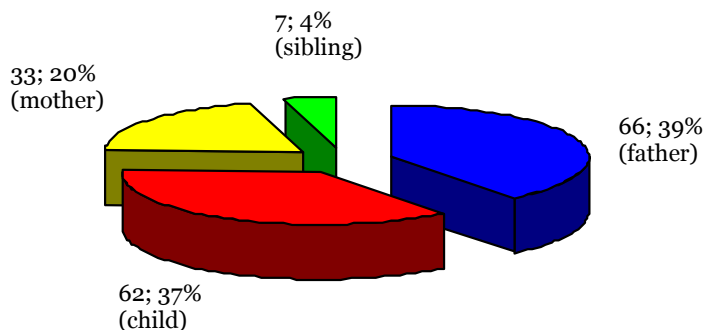
The participation rate was 100%, thanks to the cooperation of the teachers. The research process took place over a period of 5 months. The pupils answered a total of 18 questions. In this article, the answers to questions orientated on key objectives are highlighted in particular, namely a child’s perception of his/her own authority in the relation to a dog, the possibility of independent activities with a dog without adult supervision (walking the dog) and knowledge of communication signals and canine body language. Ignorance of these factors may be just a trigger for a hazardous moment.

One part of the questionnaire contained pictures showing the specific states of a dog’s mind, both positive and negative emotions. This part served to demonstrate the main risk factor – knowledge or ignorance of communication signals in a dog’s body language. These figures helped the respondents to recognize the warning and calming signals of animal by the demonstration of each position – fear, submission, joy, friendliness, threat, and attack.

Filling out the questionnaire was not restricted by any time limits. Usually, the time required for one class was one teaching lesson. The children had no problems in understanding the questions.

## RESULTS

Answers of the respondents to the question: “Who does the dog obey in your family?” Most children (39%, 66 respondents) considered the father the highest authority for the dog (the alpha male – leader). 37% of the respondents (62) considered themselves the highest authority in the relation to the dog. This represents a very alarming fact.



**Graph 1** Answers of the respondents to the question: “Who does the dog obey in your family?”

The results of this question persuaded the author that a comparison of the gender differences of answers – how boys or girls perceive their authority in relation to the

dog – would be very important. Table 1 shows the differences in the perception of authority between boys and girls.

**Table 1 Responses to the question: “Who does the dog obey in your family?” sorted according to the gender of the respondents**

	girls	boys	%
Father	<b>36</b>	30	39
Child	28	<b>34</b>	37
Mother	16	17	20
Sibling	3	4	4
Total	83	85	100

The numbers indicate both the absolute number and percentage of responses, given the even sex ratio among the respondents (B 100, G 100).

Results of the comparison of responses of the respondents about their personal experience with dog bites and perception of their own authority (Table 2).

**Table 2 Responses to the question: “Who does the dog obey in your family?” sorted according to their personal experience with dog bites**

	not bitten	bitten
Father	<b>38</b>	28
Child	27	<b>35</b>
Mother	16	17
Sibling	1	6
Total	82	86

When considering the safety of respondents during their everyday contact with the dog without the supervision of an adult, it was necessary to ask about their own roles in walking the dog. This may also be a potential risk factor in mutual contact with a dog (strange or family dog) (Table 3).

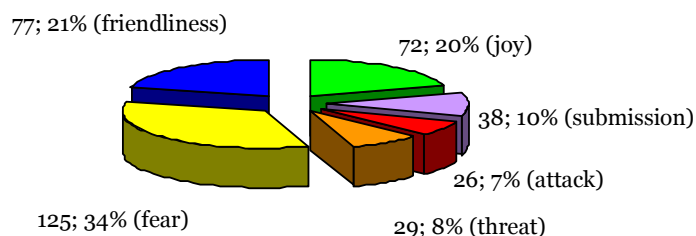
**Table 3 Responses to the question: “Do you walk the dog alone?” sorted according to their personal experience with dog bites**

	yes	no	Total
not bitten	<b>58</b>	24	82
bitten	50	<b>36</b>	86
Total	108	60	168

The remaining group of 32 respondents has no experience with either dog bites or walking the dog.

One part of the questionnaire was used for testing the knowledge of the respondents concerning the dog’s body language and communication signals. Pictures showing the current physical and psychological mood of a dog (emotion) were used for testing.

The respondents were asked to choose only one option for each picture. The pictures presented not only positive emotions but also expressions of negative (dangerous) emotions (Graph 2).



The percentages are calculated from the total number of responses of respondents (367).

**Graph 2 Performance of respondents in the recognition of a dog's emotions**

The knowledge of the respondents was compared with other questions. Table 4 shows the differences in the knowledge of communication signals between children with personal experience with dog bites and

children without this knowledge. Children who had been bitten by a dog recognized the signals of a dog's attack much better than children who had not been bitten.

**Table 4 Performance of respondents in the recognition of a dog's emotions – compared to personal experience with a dog bite**

(Asociace zástánců odpovědného vztahu k malým zvířatům 2007)

	joy	submission	attack	threat	fear	friendliness
bitten	38 (10%)	19 (5%)	13 (4%)	19 (5%)	55 (15%)	40 (11%)
not bitten	34 (9%)	19 (5%)	13 (4%)	10 (3%)	<b>70 (19%)</b>	37 (10%)

The percentages are calculated from the total number of responses of the respondents (367).

Comparison of the knowledge of a dog's communication signals between the sexes

(Tables 5, 6), and their experience with dog bites.

**Table 5 Performance of girls in the recognition of a dog's emotions – compared to personal experience with a dog bite**

(Asociace zástánců odpovědného vztahu k malým zvířatům 2007)

Girls (100)	joy	submission	attack	threat	fear	friendliness
bitten	11 (7%)	4 (3%)	<b>2 (1%)</b>	<b>3 (2%)</b>	20 (12%)	11 (7%)
not bitten	22 (14%)	13 (8%)	5 (3%)	5 (3%)	<b>47 (29%)</b>	19 (11%)

The percentages are calculated from the total number of responses of the respondents (162).

**Table 6 Performance of boys in the recognition of a dog's emotions – compared to personal experience with a dog bite**

(Asociace zástánců odpovědného vztahu k malým zvířatům 2007)

Boys (100)	joy	submission	attack	threat	fear	friendliness
bitten	22 (11%)	12 (6%)	<b>14 (7%)</b>	9 (4%)	28 (13%)	24 (11%)
not bitten	18 (9%)	9 (4%)	6 (3%)	11 (5%)	33 (16%)	24 (11%)

The percentages are calculated from the total number of responses (210).

## DISCUSSION

57% (116) of all the respondents confirmed ownership of a dog. Another option (grandparents, close family) in regular contact with a dog was stated by 52 pupils.

The responses to the question: “Who does the dog obey in your family?” brought the first important results in terms of the research program. It is possible to deduce the child’s perception of authority from these answers. The father is the highest authority according to 39% of respondents (66); the alpha male (the leader). 37% of the respondents (62) considered themselves the highest authority in the relation to the dog. This represents a very alarming fact.

Such perception may be influenced by the factor of the child’s self-centeredness and self-confidence. Matějček points out the fact that children of middle school age are extreme extroverts; this manifests itself in their self-confidence and openness to the outside world (Matějček 2007a, 2007b, Vágnerová 2005).

However, it is important to understand that this fact may be the crucial risk factor in a child’s education concerning a responsible approach to dogs. Scientific literature states that child of this age (8–12 years old) does not have a sufficient level of mental stability and responsibility. This is the reason why the dog cannot accept a child of this age as the highest authority. A caring attitude and friendly approach of the family dog can evoke in a child a feeling of his/her own dominance over the dog. Ethology experts warn that a child must be at least 12 years old to be able to handle a dog adequately. Thus, the dog cannot see a child younger than 12 years of age as an authority (Mizerová 2005). Therefore, adults must take responsibility for a substantial part of a dog’s care and training. The adults must represent the authority not only for the child, but also for the dog.

The results of this question persuaded the author that a comparison of the gender differences of the answers would be very important – how boys or girls perceive authority in relation to the dog. Table 1 shows the differences in the perception of authority between boys and girls. While girls perceive that the highest authority for the dog is represented by the father (36), boys consider

themselves more dominant in 34 cases. Here we can find another risk factor, which corresponds to similar worldwide research studies that mention boys as victims of dog attacks more often than girls (Dog bite law 2008, Duteille et al. 2002).

A comparison of the answers of respondents with personal experience with dog bites and the answers of respondents without personal experience with dog bites with the perception of their own authority also brought interesting results. Table 2 shows that children who had not been bitten perceive their fathers as the alpha male from the perspective of the dog in 38 cases. On the other hand, children who were bitten perceive their fathers as the alpha male from the perspective of the dog only in 28 cases. We can view this as a result of a safety factor of children who have no personal experience with dog bites because they do not view themselves as dominant; thus, they do not prioritize themselves in contact with dogs (strange, family dog) as their bitten schoolmates do.

Several questions were concerned with the child’s role in the dog’s care in order to judge the safety of respondents during everyday contact with the dog. The results indicate that walking the dog appears to be another potential risk factor in mutual contact with a dog (strange, family dog) (Table 3).

Why is walking the dog so risky? Being alone during the walk with the dog might be very risky for a child’s safety. It is necessary to realize that protection of the family dog against the attack of a strange dog may cause trauma to the child (both physical and psychological). Also, the size of the dog and the constitution of the child may significantly influence the handling of the dog and thus increase the risk of the situation (e.g. the dog running away, fright of the dog, child being pulled into the road, attack). The child cannot control an animal under stress or bigger than the child itself (Melichárková 2006).

So, what were the answers to the question: “Do you walk the dog alone?” 116 children reported that they have a family dog and 52 children stated that they can regularly meet a familiar dog. 65% (108) of these two groups of children are allowed to walk the dog without adult supervision. The question of the extent of risk for these children remains to be answered.

51% (86) of all the participants reported that they had been bitten by a dog in the past. The rest of the respondents have not been bitten by a dog – 49% (82). The participants were also given the supplementary question whether they had been bitten by a family dog or a strange animal. A family dog was the attacker in 47% (39) of all cases of dog bites. In the rest of the cases (53% – 47), the attacker was a strange dog. Boys (50) had been bitten more often than girls (36). Table 3 shows the comparison between the dog bite experience and the possibility of walking a dog without adult supervision. We can observe that children who have not been bitten walk a dog without adult supervision more frequently than children who have been bitten (58). Do they become potentially endangered?

This article wants to stress the main risk factor, the respondents' ignorance of canine body language and communication signals. Pictures showing the current physical and psychological mood of a dog (emotion) were used for testing this knowledge. The respondents were asked to choose only one option for each picture. The pictures presented not only the positive emotions but also the expressions of negative (dangerous) emotions (Graph 2). 72 respondents identified joy correctly in the first picture of a dog in a low forward bend with a happy expression and its tongue lolling out. The display of submission was recognized by 38 respondents. Two middle pictures, which show the displays of two of the potentially most dangerous communication signals – aggressive attack and threat – also represent the major risk factors in contact with a dog. Only 26 pupils were able to identify a dog in a resolute stance with its tail high, its ears up and a wrinkled nose as an attacking dog. The defensive threat was also very difficult to recognize (29).

The fact that a child is unable to distinguish between the warning signs of a defensive threat and an aggressive attack indicates that the child does not realize the risks connected with these behaviors. That means that these warning signs will not prevent the child from contact with such a dog.

The communication signal that had the highest recognition rate was fear (125). The question remains: What would the behavior of children towards a frightened animal be? It

is necessary to realize that a frightened animal may become very dangerous (Mikulica 2004).

The knowledge of the respondents was compared with other questions. Table 4 shows differences in knowledge of the communication signals between children with personal experience with dog bites and children without this knowledge. Children who had been bitten (5% – 19) by a dog recognized the signals of a dog's "threat" much better than children who had not been bitten (3% – 10). They had already seen this communication signal at the moment of attack. Children who had not been bitten were more familiar with the signals of "fear" (19% – 70). We have already mentioned that fear is also one of the fundamental risk factors during the mutual contact and it can trigger many traumatic experiences.

Further comparison in terms of knowledge of canine communication signals between the two sexes (Tables 5, 6) and their experience with dog bites pointed out that girls who had been bitten by dogs had a worse outcome in identifying the most serious canine communication signals – "attack, threat". Their classmates who had not been bitten by dogs knew both signals a little better. Girls who had not been bitten by dogs also showed a better understanding of the signals of "fear" (29% – 47). Boys who had been bitten (7% – 14) by dogs clearly showed a better understanding of the signals of "attack" than boys who had not been bitten (3% – 6) by dogs.

The questions focused on the awareness of nutrition, health care and fitness of dogs formed the easiest part of the questionnaire for the respondents. The mentioned section of the questionnaire should emphasize the general knowledge of the pupils, which should be an integral part of the environmental awareness of every child. It is, no doubt, commendable that children know how to take care of a dog. Still, the ability to perceive a dog's communication signals and to know how to treat it appropriately is much more important for their mutual relationship (Budiansky 2002). The results of the above mentioned section of questionnaire are not relevant to the main topic of this article. Therefore, they are not listed here.

Children's injuries related to dog bites do not pose a problem only in the Czech Republic. Large surveys conducted in the U.S.A. have

concluded that more than 4.7 million people are bitten by dogs annually. Nearly 800,000 Americans seek the necessary medical assistance in connection with serious bite-related injuries annually. More than half of these involuntary patients are children. Fatal consequences of conflicts with dogs aren't rare – especially in children aged 0–5 years (Dog bite law 2008, Duteille et al. 2002, Keuster et al. 2004).

The National Institute of Public Health (NIPH) has carried out a survey among children in selected primary schools in Prague concerning injuries related to dog bites. More than 40% of the participants reported that they had been bitten at least once before the age of 12 (Janoušek et al. 2003). The Institute of Health Information and Statistics of the Czech Republic recently stated that 358 children (under the age of 14) fell victim to a dog bite or injury caused by a dog in 2007. There may still be many other cases of dog attacks about which the authorities are not informed. In some cases, the adults may be aware of their own guilt, so they decide not to inform the authorities (Přenosné nemoci v ČR 2005, Infekční nemoci v ČR 2006).

## CONCLUSION

Every relationship, even that between a child and dog, should be based on mutual respect and understanding that allows not only trouble-free interaction, but also creates

a good basis for a positive approach and relationship of both partners.

If the child is supposed to create and strengthen the relationship with an animal – a dog – he/she must learn to know and respect not only dog's basic physiological needs and supervision of the dog's health status and fitness, but also specific differences seen in the behavior and communication (communication signals) of his/her animal companion (Fraňková 1999).

Ignorance of divergent patterns of behavior, perception of hierarchy (authority) by the animal in the human family, a variety of communication signals representing aversion or pleasure of the animal, or just spending free time together (independent activities – walking the dog) puts both individuals into risky situations and represent primary causes of possible conflict.

The decision to let the child grow up together with a dog belongs, without a doubt, to one of the best decisions we can make. However, it is necessary to realize the responsibility of adults in this relationship.

A dog can make a child's life richer – as a silent companion, a guardian, psychological support, and a loving and faithful friend. A dog is worthy of our reverence and respect for all these positives.

If children are taught to respect all living beings and pass this experience along, the positive consequences of our effort will enrich future generations (Hessler-Keyová 2002).

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