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RAPID IDENTIFICATION OF THE TEMPERAMENT TYPE IN DACHSHUND, PEKINESE AND JAPANESE CHIN COMPANION DOG BREEDS

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Abstract

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The aim of this study was to rapidly identify the temperament type which greatly influences the extent of the dog socialization in young puppies using the statuette test. For that, a total of 27, 7 week old puppies from 3 breeds used worldwide as companions (Dachshund, Pekinese and Japanese Chin breeds, 9 puppies from each breed) were tested 2 times after placing an odourless dog statuette in an empty and unfamiliar room, for specific behavioural activities (purposefulness / orientation, confidence, curiosity, indifference, fear and aggressive traits), leading to the establishment of the temperament type. The L (sanguine) type characterizing a strong and balanced temperament (highly correct orientation, high curiosity, no indifference, no fear, and high confidence and no aggressiveness) was encountered in 6 Dachshund, 5 Pekinese and only in 3 Japanese puppies. Two puppies from each breed exhibited the second strong temperament, the F (choleric) type, differing from the first by a weakly lower orientation and by some aggressive traits. The weak and balanced temperament (low orientation, weak confidence and curiosity but fear signs and no aggressiveness), the G (phlegmatic type) was found in only one Dachshund dog but in 4 Pekinese and Japanese Chin dogs whereas the last weak and unbalanced temperament, the A (melancholic or antisocial) type was evidenced only in 2 Japanese dogs. These results show that the strong temperament types (L and F at a lesser extend) leading to a stable and rapid socialisation can be rapidly and easily determined by the statuette test and were more frequently evidenced in the Dachshund than in Pekinese or Japanese Chin dogs.

Key words: dog puppy, companion, behaviour, temperament, socialisation, statuette test, breed

Introduction

Animals, especially dogs, are a key part of man's connection with nature. Their ever increasing closeness to humans makes them an exceptionally gifted, even intelligent. Due to the benefit of its six senses, the dog has numerous professions (Denkov, 1996; Saetre et al., 2006; Uzunova, 2006). It is used as a companion, hunter, shepherd, rescuer, courier, postman, border patrol, criminal investigator, customs officer, natural resources detector, children guardian, disabled people's assistant, healer (the dog can detect human emotions and successfully recognizes psychotic states) and odourologist (in service of the police). Dogs are also involved in scientific research (Queinnec, 1996; Diederich, 1998; Giffroy, 1998).

The issue of dog socialisation has always attracted the attention of ethologists (Queinnec, 1996; Vastrade, 1996; Diederich, 1998). The way it adapts to its environment (socialisation) is very important, as it also reflects on its overall behaviour (Petkov et al., 1999). Contacts between humans and dogs are often successful, as well as among dogs (Montagnier, 1998). In this relation, the influence of the temperament type on the extent of socialisation and specific behaviour formation is very important (Renaud, 1996; Diederich and Giffroy, 2006; Houpt, 2007). Just as in humans, 4 temperament types have been described in dogs (Renaud, 1996; Vastrade, 1996):

- strong, balanced, calm, brave – type L, sanguine;
- strong, unbalanced, brave – type F, choleric;
- weak, unbalanced, slow, fearful – type G, phlegmatic;
- weak, unbalanced, irritable, sometimes aggressive, fearful – type A, melancholic.

Some authors (Campan and Scapini, 2002; Keeling and Jensen, 2002) have pointed out a fifth temperament type:

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"mixed," when a dog exhibits simultaneously typical traits of two temperaments, e.g. sanguine and choleric for example. Research was performed proving that socialisation is easiest and most complete in dogs with L and F temperament types (Montagnier, 1998; Uzunova, 2006; Arata et al., 2010). This process occurs within the 3rd week and 3rd month after birth. During this period, it is imperative to typify the temperament of the puppies (through tests) with regard to their proper socialisation, training, and formation of specific behaviour. Knowing the young animal's temperament would allow avoiding stress situations during its training and upbringing, which could lead to the occurrence of tics, depressions, manias, fear, bad temper or aggression (Queinnec, 1996; Ley et al., 2009; Haverbeke et al., 2010).

Available literature reports few previous investigations and results about typifying of dog temperament (Uzunova et al., 2008; Uzunova et al., 2010) with relation to the breed. The ethology offers various tests (Queinnec, 1996; Renaud, 1996, Vastrade, 1996; Diederich and Giffroy, 2006) applied for typifying of companion dogs' temperament. It is not yet clear which of them give the most reliable results, or which are the best accepted by puppies.

Therefore, the goal of this research was to typify the temperament and its influence on the extent of socialisation in puppies from Dachshund, Pekinese and Japanese Chin breeds, used as companions using the statuette test (Renaud, 1996). Data about this test's application is very scarce at present. These breeds were chosen because they are among the most preferred companions in the world, even though the Japanese Chin is used less often for such purposes (Mitsulov, 1993).

Material and Methods

The experimental work was performed in September 2009 and lasted 2 weeks. The experimental design was in strict compliance with the ethical guidelines for humane treatment of animals as regulated by the Law on Animal Protection in the Republic of Bulgaria, as well as with the zoohygienic and nutrition standards for this category of dogs. The Animal Ethical Committee to the Trakia University in Stara Zagora approved it. A total of 27 puppies, 7 week old, were used in the study. The distribution by gender was 13 males (with numbers in tables: D1, D5, D6, D9, P5, P7, P9, J1, J3-J6, and J9) and 14 females. They originate from 9 litters, 3 of each breed, belonging to the Dachshund, Pekinese and breeds and there were equal numbers of puppies of each breed (D1-D9 for the Dachshund puppies, P1-P9 for the Pekinese puppies and J1-J9 for the Japanese Chin dogs), weighing approximately the same weight and reared under the same conditions.

Twice ethologists unfamiliar to them separately tested puppies for 30 minutes. The experiments were performed in an empty and unfamiliar room (area of 8 m^2), in the centre of which was placed an unbreakable odourless black-brown dog statuette, not emitting any sound and of similar size as the tested puppies. Through observation and chronometry, the puppy behavioural activities such as purposefulness and orientation, fear, confidence, aggression, curiosity or indifference were examined. The assessment of the listed behavioural activities was scored using a four-stage scale (from 0 to 3), which is applied in other areas of cynology, e.g. to determine the intelligence of a dog (Montagnier, 1998).

The presentation of the results of the ethological tests was not as an ethogramme because the statuette test was not meant for a long duration, at least 48 hours, which are required for the establishment of a complete behavioural analysis.

Results

During the first test, 2 Dachshund puppies from each litter (D1, D2 / D5, D6 / D7, D9), 5 Pekinese puppies (3 from the same litter, and 2 from the 2 other litters) and 3 Japanese Chin puppies (2 dogs belonging to the same litter) demonstrated calmness, trust and curiosity throughout the entire experiment duration. Noticing the figurine, they quickly oriented themselves and moved towards it purposefully and confidently (3 minutes). They would then sniff it (1 minute), bumped it, and turned it upside down. Three of them (D5, D9 and P1) have even climbed on top of it. None of the tested puppies showed any signs of fear; none bit the statuette, and all played with it without whimpering (26 minutes). During the second test, the same behavioural activities were observed in these 14 puppies with the difference that the dogs D1, P3, J4 and J8 have also climbed on top of the figurine for 5 minutes. Consequently, the specific behavioural activities in these puppies were graded as following: 3 for the very good orientation and purposefulness, 3 for the high confidence, 3 for the curiosity expression and 0 for lack of fear, 0 – 1 for indifference and 0 for aggressive trait (Tables 1 to 3). As these dogs have exhibited high degree of orientation and purposefulness, calmness, confidence, bravery, non-aggression, and high curiosity, corresponding to sanguine behavioural traits, they were considered as having a type L temperament.

A second behavioural type was detected in 6 dogs: 2 Dachshund (D3 and D8), 2 Pekinese (P8 and P9) and 2 Japanese Chin breed (J2 and J5). During the 2 tests, these puppies have exhibited slight irritability and fear for 2 minutes, and then they have cautiously moved towards the dog statuette and started turning it over and biting it for 10 minutes and finally played for 18 minutes. As a slight confusion following

by good orientation and purposefulness was noticed, this specific activity was graded as 2, whereas these puppies received the maximal grade for confidence and curiosity, 0 for indifference and fear, and 1 for aggressive trait because they have bitten the statuette (Tables 1 to 3). These dogs were correctly oriented, purposeful, brave and curious but sometimes aggressive and unpredictable. As their temperament was strong but yet unbalanced, it was considered as a type F (choleric).

One Dachshund (D4), 2 Pekinese (P4 and P5) and 2 Japanese Chin (J1 and J9) dogs demonstrated weak irritability and fear (they stood still and whimpered) throughout the first 5 minutes during the ethological tests. During the next 15

Table 1
Behavioural activities determined using the statuette test in Dachshund, 7 week old puppies from 3 litters (n = 9)

Puppies		Purposefulness Orientation	Confidence	Curiosity	Indifference	Fear	Aggression	Temperament type
Litter 1	D1	3	3	3	0	0	0	L (sanguine)
	D2	3	3	3	0	0	0	L (sanguine)
	D3	2	3	3	0	0	1	F (choleric)
Litter 2	D4	1	1	1	2	2	0	G (phlegmatic)
	D5	3	3	3	0	0	0	L (sanguine)
	D6	3	3	3	0	0	0	L (sanguine)
Litter 3	D7	3	3	3	0	0	0	L (sanguine)
	D8	2	3	3	0	0	1	F (choleric)
	D9	3	3	3	0	0	0	L (sanguine)

Scores were ranged from 0 (lack of behavioural activity) to 3 (highest degree of behavioural activity) for each item

Table 2
Behavioural activities determined using the statuette test in Pekinese, 7 week old puppies from 3 litters (n = 9)

Puppies		Purposefulness Orientation	Confidence	Curiosity	Indifference	Fear	Aggression	Temperament type
Litter 1	P1	3	3	3	1	0	0	L (sanguine)
	P2	3	3	3	1	0	0	L (sanguine)
	P3	3	3	3	1	0	0	L (sanguine)
Litter 2	P4	1	1	1	2	2	0	G (phlegmatic)
	P5	1	1	1	0	2	0	G (phlegmatic)
	P6	3	3	3	0	0	0	L (sanguine)
Litter 3	P7	3	3	3	0	0	0	L (sanguine)
	P8	2	3	3	0	0	1	F (choleric)
	P9	2	3	3	0	0	1	F (choleric)

Scores were ranged from 0 (lack of behavioural activity) to 3 (highest degree of behavioural activity) for each item

Table 3
Behavioural activities determined using the statuette test in Japanese Chin, 7 week old puppies from 3 litters (n = 9)

Puppies		Purposefulness Orientation	Confidence	Curiosity	Indifference	Fear	Aggression	Temperament type
Litter 1	J1	1	1	1	2	2	0	G (phlegmatic)
	J2	2	3	3	0	0	1	F (choleric)
	J3	1	1	1	3	3	1	A (antisocial)
Litter 2	J4	3	3	3	0	0	0	L (sanguine)
	J5	2	3	3	0	0	1	F (choleric)
	J6	1	1	1	3	3	1	A (antisocial)
Litter 3	J7	3	3	3	0	0	0	L (sanguine)
	J8	3	3	3	0	0	0	L (sanguine)
	J9	1	1	1	2	2	0	G (phlegmatic)

Scores were ranged from 0 (lack of behavioural activity) to 3 (highest degree of behavioural activity) for each item

minutes, they would be oriented in different directions, calm down slowly, and head towards the figurine after noticing it. Finally, they played with it (climbed on top of it, turned it upside down). Few dogs have also exhibited some noticeable reactions: the Dachshund D4 and the Pekinese P4 puppies moved away from the statuette and observed the Pekinese P5 puppy, which was apparently more active than the others were: it continued playing with the statuette until the end of the test (10 minutes) but slight whimpering could be detected for 5 minutes. Furthermore, during the second test, the J1 puppy has exhibited a different behaviour: it has completely ignored the statuette, just observing 2 other puppies for 20 minutes and later it has approached the statuette and stood next to it but has not touched the object (it has tried to be curious but has failed). Because of hesitation, weak orientation and purposefulness, slower movements, low curiosity, indifference, irritability and fear gradually fading into calmness, the following scores were attributed: 1 for purposefulness / orientation, confidence and curiosity; 2 for indifference and fear and 0 for aggressive trait (Tables 1, 2 and 3). As these puppies have slowly oriented, were non-purposeful, lowly curious, moderately fearful and not aggressive, they were considered as phlegmatic (type G temperament).

Finally, during the first test, 2 Japanese Chin puppies (J3 and J6) stood and whimpered for the first 18 minutes. Thereafter, the J6 puppy headed towards the statuette, reached it, sniffed it and then moved aside (10 cm), standing still and moving slightly until the end of the test (12 minutes) without any whimpering. The other puppy followed the first, stopped making sounds, tried to sniff the statuette and tried to bite it (2 minutes). Afterwards it stood closer to it (7 cm), moving slightly and variably until the end of the observation. At the end of the first test, the puppy J6 exhibited a higher degree of purposefulness than the puppy J3 that seemed more aggressive. During the second test, these puppies have demonstrated a stronger indifference towards the object: they have not shown any interest for it for the entire test (30 minutes). If they approached it, they would not even sniff it. They stood 20 cm away from it, moving slightly without clear orientation or purpose and they have whimpered for 5 minutes. Consequently, the both puppies have exhibited an important lack of purposefulness and orientation as well as confidence, very low curiosity (grade 1 in each case), a great indifference and a durable fear slowly fading into calmness (grade 3) and some aggressive traits (attempts to bite the statue during the first test) (grade 1) (Table 3). The both puppies were classified as type A temperament, i.e. melancholic or asocial.

The mean specific behavioural activities determined using the statuette test according the breed (Dachshund, Pekinese and Japanese Chin breeds) were reported in Table 4. The performances in orientation and the scores for confidence and curiosity were higher in the Dachshund and Pekinese dogs than in the Japanese Chin puppies in which indifference, fear and aggressive reactions were more often encountered. Moreover, the L (sanguine) temperament was encountered in 6 (66.7%) Dachshund and 5 (55.6%) Pekinese and in only 3 (33.3%) Japanese Chin puppies, the F (choleric) and G (phlegmatic) temperaments were approximately equally distributed in the 3 investigated breeds but the antisocial temperament (type A) was only found in the Japanese Chin dogs. No puppies of mixed nervous system type were found in any of the investigated breeds.

Table 4
Behavioural activities determined using the statuette test in 7 week old puppies and distribution of temperament types according to the investigated breeds (Dachshund, Pekinese and Japanese Chin breeds, n = 9 for each breed). Results are expressed as mean ± standard error

Breed	Orientation	Confidence	Curiosity	Indifference	Fear	Aggression	Temperament type
Dachshund	2.56 ± 0.24	2.78 ± 0.22	2.78 ± 0.22	0.22 ± 0.22	0.67 ± 0.22	0.22 ± 0.15	Type L: 6/9 Type F: 2/9 Type G: 1/9 Type A: 0/9
Pekinese	2.33 ± 0.29	2.56 ± 0.29	2.56 ± 0.29	0.56 ± 0.24	0.88 ± 0.29	0.22 ± 0.15	Type L: 5/9 Type F: 2/9 Type G: 2/9 Type A: 0/9
Japanese Chin	1.89 ± 0.31	2.11 ± 0.35	2.11 ± 0.35	1.11 ± 0.45	1.36 ± 0.45	0.44 ± 0.18	Type L: 3/9 Type F: 2/9 Type G: 2/9 Type A: 2/9

Scores were ranged from 0 (lack of behavioural activity) to 3 (highest degree of behavioural activity) for each item

As could be seen from Table 5, there were no statistically significant difference between male and female puppies with regard to their belonging to one or another temperament type.

Discussion

According to the behavioural activities characterized by the statuette test in 27 young puppies belonging to 3 breeds (Dachshund, Pekinese and Japanese Chin breeds), it was determined that the type L (sanguine, strong and balanced temperament type) was predominant in Dachshund (66.7%) puppies and at a lesser extent in Pekinese dogs (55.6%) whereas it was more scarcely observed (33.3%) in the Japanese Chin dogs. The other balanced and not aggressive, but weak temperament, the type G (phlegmatic) was encountered in 5/27 (18.5%) puppies, and more exactly in 1/9 (11.1%) Dachshund, in 2/9 (22.2%) Pekinese and Japanese puppies. The 2 other temperament types which can lead to some aggressive reactions, the type F (choleric, strong and unbalanced temperament) and the type A (melancholic or antisocial, weak and unbalanced temperament) were observed in 8/27 (29.6%) dogs, but, whereas the type F was equally distributed among the 3 investigated breeds, the type A was only found in Japanese Chin dogs.

The interpretation of these results, although the number of puppies from each breed has remained low, may lead to the conclusion that the highest number of puppies (88.9%) with a strong (sanguine and choleric) nervous system type could be found in the Dachshund breed in which no melancholic animals were found. Therefore, the representatives of this breed are the bravest, most purposeful, excellently oriented, curious, balanced, and non-aggressive. These puppies would exhibit the highest extent of socialising, i.e. they will adapt quickly and easily to their environment. Their training would not be problematic and developed behaviour would be stable. These dogs are, as a result, excellent for companionship, and they are logically among the most preferred breed for this purpose in Bulgaria. In Pekinese dogs, the 2 strong temperaments (types L and F) were also strongly represented in 77.8% of puppies. No dog with the weak melancholic temperament type could be found for this breed, but the phlegmatic type appeared more frequent than in Dachshund dogs. The Pekinese puppies would also socialise easily, be oriented quickly, would not be afraid, but some of them would be more unbalanced, sometimes even irritable and aggressive. Their training would be easy though longer, the developed behaviour would be stable. This breed is also preferred for companionship.

In a previous study of ours (Uzunova et al., 2008) we have investigated the temperament of Pekignese puppies by the open-field test and obtained results similar to those reported in the present study. The lowest frequency of dogs with strong temperament (55.6%) was evidenced in the Japanese Chin breed whereas a high proportion (44.4%) of dogs with weak (phlegmatic and melancholic) temperament was found in this breed. This was the only breed in which melancholic (asocial) temperament type was represented in the present study. At present, we have not encountered any reliable results from contemporary ethological tests with Japanese Chin dogs and therefore, a comparative evaluation of this breed's behaviour is not possible. Based on these etiological results, the Japanese Chin breed is placed last after Dachshunds and Pekinese dogs regarding its qualities in companionship (Montagnier, 1998). It is assumed that the Japanese Chin puppies would be socialised to an even lower extent, i.e. they would adapt slower, develop desired behaviour harder, and require longer training.

Table 5
Behavioural activities determined using the statuette test in 7 week old puppies and distribution of temperament types according to gender within the 3 investigated breeds (Dachshund, Pekinese and Japanese Chin breeds, n = 9 for each breed). Results are expressed as mean ± standard error

Breed	Orientation	Confidence	Curiosity	Indifference	Fear	Aggression	Temperament type
Females (n = 14)	2.42 ± 0.20	2.71 ± 0.19	2.71 ± 0.19	0.50 ± 0.20	0.30 ± 0.20	0.29 ± 0.13	Type L: 8/14 Type F: 4/14 Type G: 2/14 Type A: 0/14
Males (n = 13)	2.08 ± 0.26	2.23 ± 0.28	2.23 ± 0.28	0.77 ± 0.34	0.92 ± 0.35	0.31 ± 0.13	Type L: 6/13 Type F: 2/13 Type G: 3/13 Type A: 2/13

Scores were ranged from 0 (lack of behavioural activity) to 3 (highest degree of behavioural activity) for each item

Ethological evaluation of puppies by open-field and bait tests (Uzunova et al., 2008; Uzunuva et al., 2010) have shown that the statuette test and the bait test were accepted better by the animals as compared to the open-field test, when 25% of studied subjects did not exhibit an adequate reaction.

Conclusion

As a conclusion, it may be assumed that, of the three examined breeds, the Dachshund breed, followed by the Pekinese and Japanese Chin breeds, exhibits the best behavioural traits. The experimental work proved that the statuette test was easy to perform, readily accepted by the animals, and non-stressful (as proved by the puppy behaviour). Therefore, its wider usage in practice is here encouraged for easily typifying the temperament of young puppies in order to ensure their proper socialisation and formation of desired behaviour.

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