ASSESSMENT OF DOG TEMPERAMENTS OF DIFFERENT BREEDS BY USING THE ATT TEST IN DOG FARMS

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ABSTRACT

The temperament of a dog is defined as a dog's innate tendency to respond to a given stimulus in a particular way. It looks for signs of shyness and fear. In this study, we used the ATT (American Temperament Test), which is a temperament test prescribed for dogs. The purpose of the ATT is to warn dog owners about any issues that may be resolved with training. This study was conducted on 62 dogs of various breeds, including 16 Cane Corso from the working group, 14 German Shepherds from the herding group, and 32 Griffons from the toy group. A statistical analysis of the current study, including descriptive analyses, Cronbach's alpha to evaluate the extracted factor's internal reliability, and dimension reduction, was computed to evaluate the factor's internal validity. Interestingly, results show that the Griffons from the toy group had a significantly higher passing rate than the other two breed groups. This is due to the fact that there is a difference in temperament among breed groups, as the Griffon's temperament from the toy group is intelligent, alert, sensitive, full of self-importance, and curious. In contrast, the Cane Corso's temperament from the working group is protective of property and owners, easily trained, docile, and affectionate with family, and the German Shepherd's temperament from the herding group is fearless, confident, aloof with strangers, and quietly stands ground.

Keywords: Breed, dog, groups, temperament tests

INTRODUCTION

According to the American Kennel Club (2019), temperament is defined as "a person's innate tendency to respond to a given stimulus in a particular way." In the event that a dog fails a temperament test item, the AKC Temperament Test (ATT) program provides remediation resources that are prescribed. This temperament test looks for signs of shyness, fear, lack of cooperation, and incapacity to recover. The dog should have the following qualities: it should be cooperative, curious, emotionally stable, adequately social for its breed, and biddable. Temperamentally related behaviors can be changed through exposure and education over time.

Diederich and Giffroy (2006) proposed that the correct term for "temperament" is

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reserved for describing a dog's overall behavior and that characteristics associated with temperament should be expressed in an objective and scientific manner.

In six categories—social, auditory, visual, tactile, proprioceptive, and unexpected—the American Kennel Club developed the All-Breed Temperament Test (ATT) to gauge how companion (pet) dogs react to stimuli. Four test items are possible within each category. In each of the six categories, dogs are graded on three of the four test items (a total of 18 items). The elevator chooses the three tests. The proprioceptive category comprises a low teeter, a low platform, intersecting hoops, and a cavaletti (PVC ladder) as test items. Using a behaviorally anchored rating system, the ATT is graded on a range of 0 to 5. Using a behaviorally anchored rating system (BARS), a performance management instrument that uses behavior "statements" as a point of reference. In addition to being rated on a numerical scale (Daniels & Bailey, 2014).

The purpose of this study was to assess the temperamental behaviors of the dogs in order to inform breeders about their dogs' undesirable behaviors, which can be corrected with training.

MATERIALS AND METHODS

Ethical statement
The present study was evaluated and authorized by the Faculty of Veterinary Medicine, Cairo University, and the Veterinary Institutional Animal Care and Use Committee (IACUC) (Approved Number: vetCU8/03/2022/438).

The temperaments of the 62 dogs of different breeds that took part in this test were evaluated, including 16 Cane Corso from the collective of the working group,14 German Shepherds from the herding group, and 32 Griffons from the toy group (Fig. 1). The age of each dog was at least one year. These tests were conducted on 20 dog farms in the Greater Cairo Region (Cairo, Giza, and Qalyubia) in Egypt.

Breed Groups
Based on their respective classifications from the American Kennel Club (www.akc.org) and the United Kennel Club (www.ukcdogs.com), the breeds were divided into "breed groups" according to the purpose they used for (**Table 1**).

Table 1: the breed groups used for analyses.

Breed Group	Breed Name
Herding Group	German Shepherd Dog
Working Group	Cane Corso Dog
Toy Group	Brussels Griffon Dog

Fig. 1: The images represent the three assessed dog breeds used in the study

Temperament test
The dog was assessed using a set of behavioral categories, (supplementary material Table 2) which were then divided into distinct sub-tests. Each of the subtests was created to measure a different temperamental trait. As stated, the test was regarded as failing if any one of the separate sub-tests was unsuccessful.

Prior to the dog taking the temperament test, the dog's owner gives the assessor with a brief explanation of the breed temperament of the dog once the dog enters the ring. If a dog doesn't pass the test, its owners will receive guidance on how to resolve the problem.

The temperament test must have all its sub-tests passed to receive a passing grade. The subtest was deemed unsuccessful if the dog displayed strong avoidance behavior, unprovoked aggression, or panic without showing a quick recovery (within 5 seconds). (Slabbert and Odendaal, 1999; Seksel *et al*., 1999; Svartberg, 2002; Ruefenacht *et al*.,

2002; Van den Berg *et al*., 2003; Fuchs *et al*., 2005).

Within the present study, we used six categories to determine the temperament of the dog: social, auditory, visual, tactile, proprioceptive, and unexpected stimuli. Four test items are possible within each category. Each of the six categories has four test items, for a total of 24 test items, on which dogs are evaluated (**Table 2).**

Statistical analysis

In the current study, we used the ATT form, which included 24 items and six tests. To ensure that each item's contents were maintained. Each comment received varied from 0 to 4 (0 refusal to do the item).
(1) (nervous or agitated) Has recovered within 30 seconds or needs 3 tries. (2) (moderate fear or startle) It takes a while to recover (within 15 seconds) or needs two tries. (3) (Brief fear or brief startle but recovers quickly (within 5-sec.) or needs 1 try) (4) calm and confident. (No startle or refusal). We employed the facet and factor scores by using the AKC Temperament Test Scoresheet (ACK 2019).

The component ratings were calculated by averaging the ratings for each relevant raw item. The factors' individual component scores were averaged to determine the factor scores for each factor. For the individual, no aspect or factor score was generated if one item score was absent. "social, auditory, visual, tactile, proprioceptive, and unexpected stimulus" are the six assessments. The internal reliability of the retrieved factors was evaluated by calculating Cronbach's alpha (the average covariance is divided by the average total variance). Each of the six exams' constituent parts. Subtests were separated out (**Tabe 2**).

RESULTS

Creation of ATT category scores and reliability evaluation
The present sample's six ATTS tests (Social 0.853, Auditory 0.911, Visual 0.921, Tactile 0.831, Proprioceptive 0.971, and Unexpected

Stimulus 0957) had internal consistency (Cronbach's alpha) ranging from 0.83 to 0.97.

Generation of Factor Scores and Assessment of Validity
The five questionnaire components in the current sample have internal consistency (Component Matrix) ranging from 0.80 to 0.99. (Social 0.803, Auditory 0.954, Visual 0.951, Tactile 0.879., Proprioceptive 0.990 and Unexpected Stimulus 0.953).

Tabe 2: ATT materials include components of each of the six tests' subtests and each test subdivided into 4 subtests in a total of 24 subtests.

Social tests	S1. Greets handler, pets' dog. S2. Evaluator approaches, brief exam. S3. Approach standing person who pets dog. S4. Person approaches (carrying item), pets
Auditory tests	A1. Shake large plastic bottle w/coins. A2. Vacuum cleaner (handheld). A3. Loud whistle. A4. Bike horn (bulb).
Visual tests	V1. Umbrella opened (REQUIRED). V2. Roller bag, wagon, crate dolly, cooler. V3. Streamers on stick. V4. Shake hand towel.
Tactile tests	T1. Walks on wire grate (REQUIRED). T2. Plastic tarp. T3. Plastic lattice over memory foam. T4. Pegboard over air mattress.
Proprio-ceptive tests	P1. Cavaletti (pvc ladder or low bars). P2. Intersecting hoops. P3. Low teeter. P4. Up and over low platform (e.g., Klimb TM).
Unexpected Stimulus test	U1. Approach carries large box & objects. U2. Approach drops chair. U3. Uses walker, crutches, or wheelchair. U4. Approach briskly - unusual clothing.

Descriptive Information of the ATT test categories

Each of the ATT test's averages, standard deviations, ranges, lowest and maximum scores, and percentiles are displayed in **(Table 3)**. All dogs in the six tests of ATT received scores between 3.4 and 3.7, indicating a negative skew for Social, between 3.5 and 4.00 for Auditory, and between 3.4 and 4.00 for Visual and between 3.2 and 4.00 for and Tactile and between 3.00 and 4.00 for Proprioceptive and between 3.2 and 4.00 for Unexpected Stimulus. The scores that ranged the furthest were obtained for the Unexpected Stimulus test, while the Proprioceptive test possessed the least range.

Table 3: The sample size, mean, standard deviation (SD), range, minimum, maximum, and quartiles of the ATT tests.

		Social test	Auditory test	Visual test	Tactile test	Proprioceptive test	Unexpected stimuli test
N		62	62	62	62	62	62
Mean		3.4758	3.6169	3.5323	3.5444	3.5363	3.4395
SD		0.6018	0.4953	0.6098	0.68282	0.55413	0.85733
Variance		0.362	0.245	0.372	0.466	0.307	0.735
Range		2.75	2.25	2.75	2.75	2	3.25
Minimum		1.25	1.75	1.25	1.25	2	0.75
Maximum		4	4	4	4	4	4
Percentiles	25	3.4375	3.5	3.5	3.25	3	3.25
	50	3.75	3.75	3.75	3.75	3.75	3.875
	75	3.75	4	3.75	4	4	4

The groups were compared to find out if there were any significant differences in the percentage of dogs among the three groups that passed the temperament test. It was found that there were no significant differences in the percentage of dogs in the working and herding groups that passed. In contrast, there were significant differences between the toy group and the other two groups (p < 0.01) (**Table 4 and Fig. 2**).

Table 4: Three breed categories are correlated with the six ATT test results in the linear model.

Breed Group	Breed		Social	Auditory	Visual	Tactile	proprioceptive	Unexpected Stimuli
Working	Cane Corso	N	16					
		Mean	3.5	3.58	3.7	3.2	3.2	3.00
		SD	0.53	0.41	0.68	0.70	0.38	0.44
		T	-0.96	-1.509	-1.278	-1.579	0.56	-1.445
		P-Value	0.353	0.175	0.242	0.158	0.593	0.192
Herding	German Shepherd	N	14					
		Mean	2.9	3.3	3.3	3.1	2.9	2.9
		SD	0.79	0.47	0.46	0.38	0.39	0.68
		T	-1.08	-0.647	-1.533	-1.754	1.835	-1.651
		P-Value	0.308	0.533	0.155	0.113	1.00	0.133
Toy	Griffon	N	32					
		Mean	3.7	3.9	3.8	4.00	4.00	3.9
		SD	0.14	0.12	0.00	0.04	0.00	0.04
		T	-2.11	-3.994	-0.676	-4.899	-0.655	0.00
		P-Value	**0.043**	**0.00**	0.547	**0.016**	0.559	1.00

Significant indicated bold p <0.01.

Three distinct breeds were assessed using the ATT test. There were 58 dogs that passed the exam overall, and there were 4 dogs that failed it. It was 93.5% on average for all dogs to pass away.

Interpretation for results

PASS: denoting scores between 3 and 4; a test item may only receive a score of 1.

DOES NOT PASS, which implies "NEEDS WORK.": zero on any given item. Several

items received a score of 1. Two points for more than three items. Any indication of aggression or excessive shyness.

The toy group was the one with the highest percentage of breed groupings passing the temperament test (100%). The herding group (86% of the dogs in this group passed the temperament test) was the least successful group (Table 5).
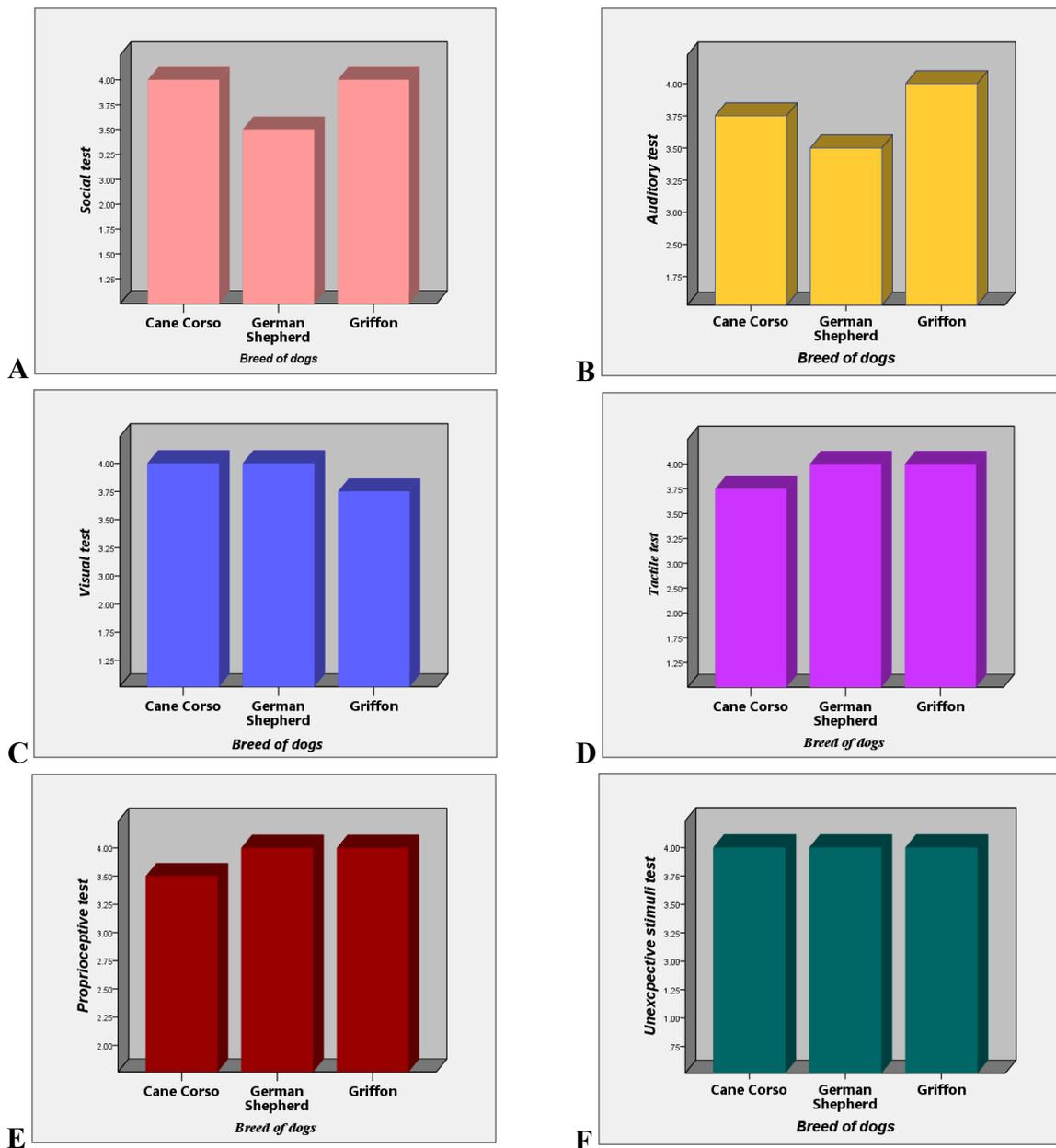
Fig. 2: The results of different tests: (**A**) Social, (**B**) Auditory, (**C**) Visual, (**D**) Tactile, (**E**) Proprioceptive and (**F**) Unexpected stimuli in dogs of each group who passed the six-temperament tests.

Table 5: Dogs in each breed group that were tested (n), dogs that passed the test (X), and dogs that failed at least one subtest are the numbers that are used to calculate the temperament test percentage.

Group	Dog	Total dogs tested (n)	Total dogs passed (X)	Total dogs failed	Percentage passing
Working	Cane Corso	16	14	2	88.24%
Herding	German Shepherd	14	12	2	86.00%
Toy	Griffon	32	32	0	100.00%
All		**62**	**58**	**4**	90.63%

DISCUSSION

Our results discussion is based on a comparison of other available published studies on the same subjects.

The temperament might be defined as an individual's articulated, observable, and quantifiable behavioral patterns in response to their environment. Age, sex, socialization, health, and inheritance are the main factors that affect an animal's temperament in higher vertebrates. Dog temperament needs to be specific to each individual, and if we try to incorporate entire families, breeds, breed groupings, or species, it will ultimately become more and more generic and all-encompassing.

The ATT test has not been evaluated statistically for reliability or validity. Moreover, there are no previous studies discussing the results of our study. In constructing the ATTS test, it was evaluated, by Dowd (2006).

This article's main contribution is the extension of previously published research through the introduction of the idea of the ATT, a prescriptive temperament test designed for companion dog owners that uses a prescriptive method of temperament testing. Dog owners are advised to utilize the ATT to find issues with their dogs' responses to particular stimuli and then address these issues using specifically designed training materials that are grounded in applied behavior analysis methodologies and learning theory.

It is significant to note that even if the dog can now correctly complete a test item, its temperament has not been permanently altered when a prescriptive training regimen is successfully completed after the dog has failed an item on the ATT. Instead, certain actions connected to the temperament test have been altered. Training can prevent the dog from displaying frightened behaviors in a range of real-world scenarios, while it is doubtful that the timid or scared dog would never again display any hesitation or anxiety in relation to new activities (e.g., walking on strange surfaces).

For dogs, the prescriptive temperament test concept holds significance as it can enhance their capacity to manage and perform in real-life scenarios.

In this present study, after the ATT test completed, it was observed that Griffon breed passed all test categories and subtests at 100%, followed by Cane Corso breed (88%), and lastly, German Shepherd breed (86%).

According to our findings, 80% of the Cane Corso breed of working dogs worked perfectly in several distinct sectors. These findings completely disagree with previous studies by Arnott *et al.* (2014a), Arnott *et al.* (2014b), Batt (2008), and Maejima *et al.* (2007), who reported that 50% of working dogs are typically completely operational across many businesses.

Our findings also showed the ability of individuals in working dogs to do well in specific tasks, with the most likely reasons for their success being behavioral traits and/or physical attributes like sensory sensitivity. These findings are shown in earlier studies by Foyer *et al.* (2014) and Rooney *et al.* (2007).

We discovered that behavioral and/or physical characteristics affect the public's perception of the worth of working dogs in society and the task's financial worth. This is confirmed by Rayment *et al.* (2015).

The results of the present study fully agreed with Morton *et al.* (1995), who claimed that the Cane Corso is very heavy and strongly constructed.

Notari & Goodwin (2007), agreed with our results that the German Shepherd breed of herding group is regarded as having a very low responsiveness rating and a high level of aggression.

CONLUSSION

The toy group representing the griffon has a good temperament as it is social, alert, and more officiant than the working group and the herding group.

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تقييم مزاج الكلاب من السلالات المختلفة باستخدام اختبار ATT في مزارع الكلاب

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يتم تعريف مزاج الكلب على أنه الميل الفطري للكلب للاستجابة لمحفز معين بطريقة معينة. يبحث عن علامات الخجل والخوف. في هذه الدراسة، استخدمنا اختبار المزاج الأمريكي (ATT)، وهو اختبار مزاج مخصص للكلاب. الغرض من هذا الإختبار هو تحذير أصحاب الكلاب بشأن أية مشكلات سلوكية يمكن حلها من خلال التدريب. أجريت هذه الدراسة على ٦٢ كلباً من سلالات مختلفة، منها ١٦ كين كورسو من مجموعة العمل، و١٤ الراعي الألماني من مجموعة الرعي، و٣٢ غريفون من مجموعة الزينة. تم حساب التحليل الإحصائي للدراسة الحالية، بما في ذلك التحليلات الوصفية، "ألفا كرونباخ" لتقييم الموثوقية الداخلية للعامل المستخرج، وتخفيض الأبعاد، لتقييم الصلاحية الداخلية للعامل. ومن المثير للاهتمام تظهر أن النتائج من مجموعة الزينة كان لديها معدل نجاح أعلى بكثير من مجموعتي السلالات الأخريين. ويرجع ذلك إلى وجود اختلاف في المزاج بين مجموعات السلالات، حيث أن مزاج غريفون من مجموعة الألعاب ذكي، يقظ، حساس، مليئ بالأهمية الذاتية، وفضولي. في المقابل، فإن مزاج كورسو من مجموعة العمل يحمي الممتلكات والملاك، وسهل التدريب، وسهل الانقياد، وحنون مع العائلة، أما مزاج الراعي الألماني من مجموعة الرعي فهو شجاع، واثق، ومنعزل مع الغرباء، ويقف بهدوء.

الكلمات الدالة: السلالات، الكلاب، المجموعات، اختبارات المزاج