

Development of a Dog Personality Questionnaire

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Abstract

How can dog personality (or temperament) be measured quickly, easily, and efficiently? How can a dog owner's experience with his or her dog be used to obtain reliable, valid information about the dog's personality and behavior? In this article, I will briefly discuss the history of dog personality research, which is more extensively reviewed in Jones and Gosling (2005). Here, I will also lay groundwork justifying why a questionnaire designed to assess individual dogs' personalities might best address the questions posed above. I will then outline the design of a series of studies I am currently conducting to develop and evaluate the Dog Personality Questionnaire (DPQ).

Early in the twentieth century, Nobel laureate Ivan Pavlov began a research program designed to identify the basic types of dog personality (e.g., Pavlov, 1906). Despite this auspicious start, the study of temperament and personality in animals took years to evolve into an area of research (except, of course, in humans). Now, it is widely accepted that nonhuman animals, from mice to octopuses, can also be characterized in terms of personality (Gosling & Vazire, 2002). Dogs, in particular, have been examined extensively. It is easy to understand why dogs and their personalities have garnered extensive research attention. Not only are they a very common pet in the United States (Humane Society of the United States, 2007) and ubiquitous wherever humans live, but they are also used to realize a number of essential applied goals, such as guiding visually impaired people and searching for explosives. As a result, many groups of people are interested in assessing the personalities of dogs efficiently, reliably, and accurately. These groups include: (a) potential pet owners wanting to find a dog suitable for their particular circumstances (e.g., family dog vs. guard dog), (b) shelters seeking to identify suitable homes for dogs, (c) service-dog programs (e.g., guide dogs, hearing dogs), and (d) working-dog programs (e.g., patrol dogs, detection dogs). Many of these groups must evaluate dogs using very limited resources. They may have little time with each dog, few trained

evaluators, minimal facilities, and other limitations. However, a well-validated, reliable, effective instrument for measuring dog personality that is easy and quick to use and widely applicable has yet to be developed. (Most previously developed questionnaires focus on assessing behavioral problems rather than general personality [e.g., Goodloe & Borchelt, 1998; Hsu & Serpell, 2003; Serpell & Hsu, 2001].) The goal of the research described here is to develop such an instrument and evaluate its psychometric properties, including aspects of reliability and validity.

Before a tool for assessing the broad construct of dog personality could be developed, the construct to be studied had to be explicitly defined (e.g., DeVellis, 2003). For the term *personality* to be used to characterize nonhuman animals, and dogs specifically, personality must be defined, and how (or whether) it differs from *temperament* must be determined. Personality is often reserved for discussing adult humans, and temperament for discussing human infants and other animals. However, these uses are not consistently maintained, and the terms tend to be used interchangeably (McCrae et al., 2000). I use the term personality because the distinction between the two terms is not maintained sufficiently, nor is a distinction between them generally useful for the current purposes.

Finding a definition of personality to suit all applications of the term is challenging. The phenomena studied by personality psychologists include temperament and character traits, dispositions, goals, personal projects, abilities, attitudes, physical and bodily states, moods, and life stories (John & Gosling, 2000). Only a very broad (and thus somewhat vague) definition would satisfy most. For example, personality can be defined as those characteristics of individuals that describe and account for consistent patterns of feeling, thinking, and behaving (Pervin & John, 1997), a definition broad enough to capture most phenomena studied by personality psychologists. I adopt a broad definition, and my use of the term personality includes personality in all nonhuman animals as well as humans. The dog personality assessment tool described in this article will assess personality in terms of traits (or factors). I adopt Gosling's (1998) definition of traits as "aggregate summary trends in behavior." An individual's traits are also consistent and reflected in the individual's feeling, thinking, and behaving across time and situations.

One weakness of previous research in dog personality is a failure of studies to build on each other. This may be because the studies are very diverse in origin and in focus. Previous studies are unified by their common interest in dog personality, but the researchers conducting these studies come from a wide variety of backgrounds, bringing with them assorted perspectives and publishing in a broad range of journals. As a consequence of researchers' distinct disciplinary affiliations and research goals, these efforts at understanding personality in dogs have followed largely independent paths. The result is that it is hard to keep track of the various findings—the studies are scattered across journals in anthrozoology, psychology, biology, animal behavior, and veterinary medicine, among others.

Each of these discipline-bound studies is interesting and valuable in its own right, but it provides only a relatively narrow glimpse of dog personality. Taken together, the studies provide broader insight not only into dog personality, but also into the strengths and weaknesses of the

methods used to assess dog personality. In recent years, there has been a movement to improve personality assessment methods and to bring together the diverse research. Jones and Gosling (2005) reviewed the literature with the goals of comprehensively describing and discussing the various methods used to assess dog personality, summarizing the major findings from the dog personality literature, pinpointing major gaps in science's understanding of dog personality, and using those gaps to inform suggestions about the research challenges that lay ahead. Diederich and Giffroy (2006) also reviewed the literature, focusing on both the methods used to conduct behavioral tests and promoting standardization of testing and language. Taylor and Mills (2006) reviewed the literature with the goal of promoting systematic behavioral test development; they specifically review issues related to testing (e.g., reliability, validity) and also summarize the most frequently used behavioral test components.

In order to ground the current study—the development of a new, questionnaire-based tool for assessing personality in dogs—in the existing research and theory, I used the existing research as a starting point to develop the questionnaire. In an attempt to also examine assessment of dog personality in more applied settings, I also turned to shelter and working dog assessments. As described below, I culled behavioral and trait descriptions from the dog personality literature and other sources (e.g., existing shelter intake forms) and used these as the basis for the questionnaire items.

Study 1 (Completed study)

The goal of Study 1 was to develop an initial questionnaire for assessing dog personality; this study had two parts. First, I generated a pool of potential items for use in the questionnaire. The pool of items generated was intended to be comprehensive, representing as many aspects of dog behavior and personality as possible. In order to compile a very comprehensive list of descriptors, I drew together descriptors from multiple sources, including the dog personality and temperament research literature and tools used in applied settings (e.g., shelters); these

sources were supplemented with items generated by dog experts. This process resulted in an initial list of 1,284 descriptors. These 1,284 descriptors served as the starting point for the process of sorting potential items based on content, eliminating items that did not fit my criteria (e.g., were applicable to very narrow contexts or only certain types of dogs, like guide dogs), and creating a list of 360 questionnaire items.

In the second part of Study 1, I administered the items to a small sample of participants in order to obtain feedback that would help me to identify and revise questionnaire items that were difficult for participants to understand or that described situations participants' dogs did not encounter. In this part of Study 1, the 360 items were piloted online with a sample of 152 dog owners who volunteered to fill out the questionnaire, and the questionnaire items were modified based on their feedback.

Study 2 (Completed study)

Study 2 had two goals: to determine the number of factors, or personality traits, underlying the behaviors and descriptors in the 360-item questionnaire, and to develop a concise and coherent scale. I administered the questionnaire online to dog owners who volunteered to participate, then I analyzed (using exploratory factor analysis, or EFA) the responses from 3,737 participants to the lengthy questionnaire. Independent criteria indicate that both the 4- and 5-factor solutions offered clear and interpretable personality traits. The 5-trait solution was selected over the 4-traits solution; the difference between the two was how they divided dogs' aggressive behaviors. In the 4-trait solution, aggression towards people and aggression towards other animals were lumped together. In the 5-trait solution, the two types of aggression were divided into separate traits. In practical terms, this means that a dog who is aggressive towards other animals but not towards people might receive a moderate rating on Aggression if the 4-trait solution were used, but would likely receive a low rating on Aggression towards People and a higher rating on Aggression towards Animals in the 5-trait solution. The five traits were labeled

descriptively as Fearfulness, Aggression towards People, Activity/Excitability, Responsiveness to Training, and Aggression towards Animals.

Once the five factors (or traits) had been selected, items loading on each trait were analyzed, again using EFA, to determine the number of facets composing each trait. Fifteen facets were identified. For example, Aggression towards People was divided into two facets, which were labeled descriptively as General Aggression towards People and Situational Aggression towards People. In addition to other criteria (e.g., how strongly each questionnaire item was associated with each trait), the results of the trait and facet analyses provide guidance for creating a new, briefer and more manageable 102-item form of the questionnaire to be administered in Study 3.

Study 3 (In progress)

In Study 3, my primary goal is to determine how well the five traits found in Study 2 replicate in a new, shorter questionnaire and a new sample of participants. Replication of the 5-trait solution in a new sample is key to establishing the solution's generalizability; if the solution does not generalize to the new sample and questionnaire, then it may be idiosyncratic to Study 2. I have just finished administering the 102 items to an online sample of more than 2,000 volunteer participants. These data will be analyzed to test whether the hypothesized 5-trait model fits the newly collected data (using confirmatory factor analysis and structural equation modeling).

I will also examine psychometric properties of the questionnaire. In addition to the trait analyses in Study 3, examination of the psychometric properties (e.g., whether the items measure what they are intended to measure, whether ratings of dogs on items that purport to measure a single trait are strongly related to each other) will guide the creation of two final forms of the DPQ. The questionnaire from Study 2 will be shortened to a "long form" of approximately five items per facet (or 75 items) and a "short form" with approximately three items per facet (or 45 items).

In a second phase of Study 3, participants will be asked to rate their dogs' personalities on the DPQ and then, on a separate occasion, to provide a free-form description of their dog. The goal of this phase of the study is to look at the language dog owners use to describe their dogs' personalities and compare it with that used on the DPQ.

Study 4 (Upcoming study)

The goal of Study 4 is to address another type of reliability: interobserver reliability. If a tool has high interobserver reliability, then the ratings different observers ascribe to a target when using the tool are highly correlated. To assess how well the ratings of dogs' personalities made using the DPQ generalize across observers, I will have approximately 100 pairs of participants familiar with the same dog complete the online questionnaire rating that dog. I will then examine how well the pairs of observers' ratings correlate on each item and on each factor of both the long form and the short form of the questionnaire. The adequacy of the DPQ's interobserver reliability will be determined by comparing the correlations with those found in previous dog personality research (reviewed in Jones & Gosling, 2005) and in human personality research.

Study 5 (Upcoming study)

The goal of Study 5 is to address a third type of reliability: test-retest reliability. For a questionnaire, test-retest reliability, or reliability across time, addresses the consistency of a single observer's reports taken at different points in time. (This differs from a behavioral test, in which test-retest reliability refers to the consistency of the dog's behavior at two or more different assessment times.) If a tool has high test-retest reliability, then the scores that are obtained when the test is administered at time 1 agree, or are highly correlated, with the scores obtained when the test is administered again (i.e., at times 2, 3, and so on). To assess the DPQ's test-retest reliability, I will administer the online questionnaire twice, with 1 month between administrations, to approximately 100 participants. It is important to realize, and often

misunderstood, that test-retest reliability is considered a property of the assessment tool itself; it is not a property of the people rating the dogs. A good tool will have clearly written items that elicit similar responses from people at administering times 1 and 2.

Once these data are collected, I will examine how well the pairs of ratings correlate on each item and on each factor of both forms of the questionnaire. As with interobserver reliability, the adequacy of the DPQ's test-retest reliability will be determined by comparing the correlations with those found in previous dog personality research (reviewed in Jones & Gosling, 2005) and in human personality research.

Study 6 (Upcoming study)

The aspects of reliability assessed in the previous studies are crucial prerequisites for predictive validity. Predictive validity is the extent to which scores on a given measure are related to some external, independent measure. The goal of Study 6 is to address how well participants' ratings of their dogs on the DPQ predict the dogs' behavior on independent measures. For the purpose of this study, I will devise a new Test Battery to assess behavior that is thought to be related to the long form of the DPQ (the five dog personality factors and their facets). Participant-dog pairs in the Austin area will be recruited to take part in the study. Owners will complete the long form of the questionnaire on paper, and then their dogs will be assessed using the new Test Battery. I will specify which items I predict to relate to each component of the Test Battery, then assess the relationship between scores that are expected to be related and scores that are expected to be unrelated.

Once this series of studies is complete, the results will be made readily available to the public. The results will include the questionnaire items, a summary of the demographics of the sample (e.g., dog owners' age, sex, occupation; dog's age, breed, castration status), and the results from Studies 4-6 (interobserver and test-retest reliability, and validity). This way,

whether the DPQ is ready for widespread use or in need of further revision, researchers and practitioners will be able to determine how useful the DPQ might be to them.

Readers interested in assisting with the development of the DPQ are asked to volunteer or help recruit volunteers for Study 4 and/or Study 5. Participation in Study 4 requires at least two people who are familiar with the same dog and willing to rate the dog independently. Participation in Study 5 requires only one person

to complete the questionnaire, but that person must complete the questionnaire, rating the same dog, twice with a 1-month interval between completions. Studies 4 and 5 will both begin in June 2007 and continue until adequate data have been collected. To sign up to participate in the study or learn more about this and related research, please visit the DPQ homepage (<http://survey.psy.utexas.edu/API/dpq.php>) or the University of Texas at Austin's Animal Personality Institute homepage (www.animalpersonality.org).

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