Stereotypic Gender Naming Practices For American And Australian Dogs And Cats

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Pets are considered as part of the family in many households. As such, the names people give their pets ought to resemble the names they give their children in terms of sex-stereotypic phonological characteristics. A previous study indicated that this was true for Golden Retriever dogs. The present study determined 1) if such sex stereotyping was true for dogs in general, 2) also extended to cats, and 3) if the same phenomena held for both the United States and Australia. We compared the final written letter and final spoken phoneme in pet and human names, as well as the first and last consonants, and syllable lengths in their names. We found that people applied the same gender-related naming practices for pets that they used for both male and female children. The only difference we found between U.S. and Australian naming for pets was that Americans gave their pets names that were more characteristic of male names than female names. We concluded that Americans and Australians used the same masculine/feminine rules for naming their pets as they do for naming their children.

About six out of every 10 households in America and Australia have a pet (AVMA, 2002; APPMA, 2005). In many of these households, these pets are considered as if they were children since their owners refer to themselves as their pet's "mom" or "dad." (AAHA, 2006). In some families, pets in fact have the status of favored child (Beck and Katcher, 1983). Most people who have a pet talk to them as if they were human (Horn and Meer, 1984). In many households, dogs and cats are fed the same food as their owners (Beck and Katcher, 1983), their birthdays are celebrated (Beck and Katcher, 1983) and when they die they are often buried in pet cemeteries or in some cases, alongside their human owners (Meer, 1984).

Since dogs are treated as "almost human," we hypothesized and confirmed that English speaking people use the same distinctive gender-related naming patterns for Golden

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Retriever dogs (Abel and Kruger, 2007) as they do for their children (Slater and Feinman, 1985; Cutler et al., 1990; Wright, Hay and Bent, 2005). The most distinctive of these gendered naming characteristic in human names is the final alphabetic letter: female names are much more likely than male names to end in one of three vowels, a, e, or i, e.g., Amanda, Jane, Vicki, whereas male names are much more likely to end in consonants, e.g., Mark, Steven, Todd (Barry and Harper, 1995, 2000, 2003; Lieberson and Bell, 1992; Slater and Feinman, 1985; Wright, Hay and Bent, 2005). Thus, we found that as with human names, the final alphabetically spelled letter in Golden Retriever dog names was a vowel when the dog was female and a consonant when the dog was male.

Although the final spoken phoneme in a name is also correlated with gender (Barry and Harper, 2003), it is not as good a predictor of gender. For example, John and Andrew have characteristic male consonant letter endings, but John has a phonetically ambiguous ending and Andrew has a phonetic ending that is characteristic of female names. Likewise, Jane and Alice have characteristically female vowel endings, but ambiguous and opposite phoneme endings respectively.

An additional characteristic Golden Retrievers and humans share in common, is that males are more likely than females to have monosyllabic names (Cassidy et al., 1999; Cutler et al., 1990; Slater and Feinman, 1985; Wright et al., 2005).

The present study sought to extend our previous observations which were focused on Golden Retriever dog names, to a much broader comparison of male and female names for both dogs and cats.

As a corollary to our examination of differences in gender-naming practices, we also tested two secondary hypotheses.

The first of these secondary hypotheses tested the common assertion that cats are more commonly associated with women and dogs with men, by comparing cat and dog

names (About.com, 2006; Simon, 2003). For this comparison, we hypothesized that cats would be more likely to have female-related naming characteristics than dogs whereas dogs would have more male-related naming characteristics.

Our second secondary hypothesis was that pets in the United States would have more masculine naming characteristics than Australian pets because America is a more male-stereotypic country than Australia (Williams and Best, 1990).

We tested these hypotheses using a data base listing the 60 most popular names each for male and female, dog and cat, names in the United States and Australia (http://www.bowwow.com.au/top20/index.asp). The criterion for popularity was based on a leading pet identification tag business that processes hundreds of thousands of orders from both countries.

Methods

Final letter and phoneme, and number of syllables, beginning and final letter and phoneme, consonant clustering in the first and last part of the name and short and long vowels at the start and end were tabulated for male and female dogs and cats in the United States and Australia. In cases where the same name appeared in the two lists being compared, the common name was not included in the analyses.

The final letter in each name was classified as predominantly female, male, or ambiguous, using the criteria described by Barry and Harper (2003): The fifteen final letters: b c d g k l m n o p r s t w x were coded as male; the three final letters, a e and i were coded as female; and the letters h and y were coded as ambiguous because they are equally likely to be found in human male and female names. Names ending in f j q u v and z were not included in the analysis since they are not normally found in English names (Barry and Harper, 2003).

Final phonemes were also categorized using the Barry and Harper (2003) criteria. Consonantal phonemes and the vowel o were classified as male; sonorant phonemes (m n ng r l) were classified as ambiguous, and, vowels other than o were classified as female.

Consonantal sounds at the beginning and end of names were also examined. Consonants were coded as either obstruents (stop, fricative, affricative) or sonorants (nasal, resonant, glide) using the same criteria as Slater and Feinman (1984).

Number of syllables in each name was also recorded and analyzed.

The data were entered into an Excel file and subsequently analyzed by Fisher's exact and Chi Square tests for categorical data (i.e., where there is only one possible outcome—heads or tails in a coin toss) and Student's t test for continuous data (e.g., height) using a computer statistical program (SPSS, version 4.0). These statistical tests are used to make decisions about differences between groups. The Fisher's exact and Chi-Square tests allow for comparisons involving only two possible outcomes, and two variables . For example, males and females tossing coins. Here the question would be, do heads come up more often when men toss coins. There are only two possible outcomes (heads or tails) and only two possible tossers (men or women). In the present study the two outcomes are vowel/consonant ending, and the two groups being compared are males and females . The Chi Square test is used when there one of two outcomes—heads/tails, and three or more groups tossing the coins—Baptists, Episcopalians, Mormons, etc. In that kind of study we want to see if one group tosses more heads than the others with a frequency that exceeds chance. For our study, one of the questions we ask is if male and female dogs differ in the final letter or phoneme ending corresponding to human names, and there are three outcomes—male, female, ambiguous In making comparisons of data that are continuous

in nature, such as height, or as in this study, number of syllables, a "Student's t test" is used to determine if the average number for two different groups is different from one another.

By convention, only differences between two or more groups that occurs at a chance level of five percent or less (written as probability (p) less than or equal (≤) is considered to be "statistically significant." Thus, a $p < .05$ means that if 100 such tests were made, a difference this big could only have occurred by chance five times out of a hundred. Similarly, a $p < .01$ means a difference could only have occurred by chance 1 time out of a hundred, and a $p < .001$ means a difference could only have occurred 1 time if a comparable test were repeated one thousand times. Although differences between groups may seem large, they may not be statistically significant because statistical tests take into account variability. With small samples, variability is often very great, so that sometimes very large differences do not attain "statistical significance." By relying on "statistical significance" rather than differences alone, statistics remove subjectivity.

Results

There were 480 names in the data base. The five most popular female names were Maggie, Molly, Daisy, Bailey, and Abby. The five most popular male names were Buddy, Jake, Max, Hunter, and Cody. Twenty-one of the names appeared in both male and female lists and were therefore not considered in any of the analyses. There were also a number of spelling variants of the same name. In such cases, the most frequent variant was used.

Gender: Final Letter and Phoneme Ending

The data are shown in Table 1.

Table 1
Percentages of Male and Female Pet Names With Final Letter (FL) And Final Phoneme (FP) Corresponding To The Same Or Opposite FL and FP Associated With Human Names.

	Human Names		Pet Names	
	FL	FP	FL	FP
Male	80.0	56.1	20.0	43.9
Female	69.7	79.0	30.3	21.0

Male and female animals had an almost identical percentage of ambiguous name endings (28.6% vs. 25.8%, respectively).

When we eliminated the ambiguous names and confined our analysis to only names with male and female endings, 80.0% of the male animals had the final letter characteristic of human male names whereas only 20% of the males had the final letter characteristic of human female names. This contrasted with 69.7% of female animals with the female final letter characteristic and 30.3 % with the male final letter characteristic. This difference was statistically significant (Fishers exact text, $p<.001$).

Table 1 also shows the percentages for names of male and female animals with final phonemes corresponding to the classification of human male and female names. When names with ambiguous endings were eliminated, 56.1% of the males had the final phoneme characteristic of human males whereas 79% of the females had the final phoneme characteristic of human female names. This difference was also statistically significant (Fisher's exact test, $p<.001$).

A comparison of final letter and final phoneme ending with respect to their associations with gender indicated that final letter quality was not a significantly better predictor of gender than the final phoneme.

Gender: Consonant Beginnings and Endings

Names beginning with consonants were slightly more common for males than females (96.1% vs. 93.3%), but the difference was not statistically significant.

More names began with an obstruent consonant compared to a sonorant consonant beginning (77.7% vs. 22.3%). However, the difference between males and females (82.4% vs. 73.5%) was not statistically significant.

A higher percentage of total names ended in an obstruent compared to a sonorant (54.2% vs. 45.8%) but again the difference was not significant.

The percentage of names ending in an obstruent was almost identical for male and female animals (54.0% vs. 54.5%, respectively).

Gender: Length of Name

Female animals had significantly more syllables in their names than male animals (Students' t test <.01). Average number of syllables in female names was 1.92 versus 1.71 for males.

One-syllable names were significantly more likely to be male than female (32.5% vs. 13.5%) (Fisher's exact test, $p < .01$).

Dogs vs. Cats: Final Letter and Phoneme

Dogs had a higher percentage of ambiguous letter endings than cats (27.3% vs. 12.7%), but this difference was not statistically significant. When we removed the ambiguous ending names, the difference between dogs and cats with respect to final letter quality (64.6% vs 50.0%, respectively), was still not statistically significant.

Cats had a higher percentage of names with final male phoneme endings than dogs (43.6% vs. 27.3%) but the difference was not statistically significant. Cats had a higher percentage of ambiguous phoneme endings than dogs (20.0%

vs. 13.6%, respectively) but the difference was not statistically significant.

The final letter in a name was not a significantly better predictor of dogs and cats than the final phoneme. (39.1% vs. 41.3%, respectively).

Dogs vs. Cats: Consonant Beginning and Ending

Names beginning in consonants were more likely to be cats than dogs (98.2% vs. 93.5%) but differences were not significant.

The percentage of names beginning or ending in obstruents was not significantly different for cats compared to dogs (75.9% vs. 85.7%, respectively). The percentage of names ending in obstruents for dogs compared to cats (68.8% vs. 50%) was also not statistically significant.

Dogs vs Cats: Length of Names

Dogs had an average of 1.86 syllables in their names verses 1.87 for cats. The difference was not statistically significant.

Dogs had a lower percentage of one syllable names than cats (22.7% vs. 23.6%) but the difference was not statistically significant.

Country: Final Letter and Phoneme Ending

American names had a higher percentage of final male endings than Australian names (55.1% vs. 34.3%) and a lower percentage of ambiguous ending letters (19.2% vs. 31.4%). The differences were statistically significant (Chi Square $p<.04$).

When we eliminated names with ambiguous endings, American pets still had a significantly greater percentage of names with male letter endings than Australian pets (64.2% vs. 35.8%, respectively) (Fisher's exact test, $p<.04$).

American names had a significantly higher percentage of male final phonemes than Australian names (62.7% % vs. 37.3%) and a higher percentage of ambiguous final phonemes

(21.8% vs. 12.9%) (Chi Square p<.03). When we eliminated the ambiguous names, the differences between American and Australian names with respect to final phoneme for male and females (52.5% vs. 31.3%, respectively) was still significant (Fisher's exact test, p <. 03).

When we combined American and Australian names to determine whether final letter or final phoneme was a better predictor of name gender, the difference (60% vs 63%) was not statistically significant

Country: Consonantal Beginnings and Endings

American pet names had a smaller percentage of consonant beginnings than Australian pet names (92.3% vs. 95.7%) but this difference was not statistically significant.

American pet names had a higher percentage of obstruent beginnings (87.5% vs. 71.6%)(Fisher's exact test, p<.05). Australian pet names had a higher percentage of obstruent endings (63.0% vs. 55.6%) but differences were not statistically significant.

Country: Syllable Length

American pet names had a greater number of syllables than Australian names (1.87 vs. 1.79) but the difference was not statistically significant.

American pet names had a lower percentage of one syllable names than Australian names (20.5 vs. 24.3%) but the difference was not statistically significant.

Discussion

Three phonological factors significantly related to gender were: final letter and phoneme ending and syllable length. Names ending in the letter a, e, or i, were associated with female names, as were names with final female phonemes corresponding to an a priori classification of human-related male and female names. We also female pets had names with significantly more syllables than male pets,

similar to human female versus male names (Cassidy et al., 1999, Cutler et al., 1990; Slater and Feinman, 1985; Wright et al., 2005). The results of this study are similar to our previous observations for Golden Retriever dogs (Abel and Kruger, 2007) and constitute further evidence that naming practices for male and female pets generally follow the same pattern as seen in humans (Barry and Harper, 2003) .

The similarities between human and animal gender naming practices supports the argument for a pervasive "gendered phonology" (Wright et al., 2005; cf. Hough, 2000) Pet owners clearly used phonological cues when naming their pets which are similar to those used in naming their children. However, we did find some differences between our results for pet names compared to a previous study of human names. In contrast to human names, we did not find that the final letter was a significantly better predictor of sex than the final phoneme, nor did we find significant differences in obstruent or sonorant beginnings or endings related to sex (Barry and Harper, 2003; Cassidy et al.,1999).

We also compared pets on the basis of species. We had speculated that since cats tend to be associated with women and dogs with men (About.com, 2006; Simon, 2003) we would observe a significantly greater number of cats with characteristically female names while a higher percentage of dogs would have characteristically male names. Our data did not support this hypothesis.

On the other hand, our hypothesis that American pets would have a higher percentage of characteristically male names was partially supported—-American pets had a significantly higher percentage of names with the final letter and final phoneme characteristic of male names, and a higher percentage of stops (i.e. obstruents). However, they did not differ from Australian pets in syllable length, another gender-related characteristic. Slater and Feinman, 1985; Cassidy et al., 1999; Butler et al., 1990; Barry and Harper, 1995; Wright et al., 2005).

Finally, we return to our original observation that in America and Australia, pets are treated as if they are human. The present study also supports this conclusion from the standpoint of the names people give their dogs and cats. This conclusion has to be tempered, of course, in terms of the kinds of pets we studied. We only evaluated dogs and cats. It is possible that people may use other naming practices for their other pets.

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