

## From Working Dogs to Companion Pets: Unveiling the Elevated Risk of Autochthonous Dog Breeds Transitioning to Pets, with a Focus on Hunting/Ratting vs. Guarding/Shepherding Roles

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### SUMMARY

This study intricately explores the transition of autochthonous dog breeds from their historical roles as working dogs to becoming companion pets, with a keen focus on the risks associated with this evolution. Particularly, our findings reveal a significant risk disparity between breeds historically used for hunting/ratting and those engaged in guarding/shepherding roles. The observed risk in hunting/ratting breeds is 1.5 times greater than their guarding/shepherding counterparts, emphasizing the substantial challenges these breeds face in adapting to domestic life. Through rigorous quantitative methodologies and statistical analyses, our research provides empirical evidence, including a Cramér's V value of 0.25 and odds ratio calculations, quantifying the elevated risk. These numeric results offer a nuanced understanding of the multifaceted dynamics influencing the shift from traditional working roles to companion pets, bearing implications for cultural heritage, societal perceptions, and genetic conservation within the context of autochthonous dog breeds.

### De Perros de Trabajo a Animales de Compañía: Revelando el Riesgo Elevado de Razas Caninas Autóctonas en Transición a Mascotas, con Énfasis en los Roles de Caza/Rateo vs. Guarda/Pastoreo"

### RESUMEN

Este estudio explora detalladamente la transición de razas autóctonas de perros desde sus roles históricos como perros de trabajo hasta convertirse en mascotas de compañía, con un enfoque especial en los riesgos asociados con esta evolución. En particular, nuestros hallazgos revelan una significativa disparidad de riesgos entre razas históricamente utilizadas para caza/roedores y aquellas dedicadas a roles de guardiana/pastoreo. El riesgo observado en razas de caza/roedores es 1.5 veces mayor que en sus contrapartes de guardiana/pastoreo, destacando los desafíos sustanciales que enfrentan estas razas al adaptarse a la vida doméstica. A través de metodologías cuantitativas rigurosas y análisis estadísticos, nuestra investigación proporciona evidencia empírica, incluyendo un valor de Cramér's V de 0.25 y cálculos de la razón de posibilidades, cuantificando el riesgo elevado. Estos resultados numéricos ofrecen una comprensión matizada de las dinámicas multifacéticas que influyen en el cambio de roles tradicionales a mascotas de compañía, con implicaciones para el patrimonio cultural, percepciones sociales y conservación genética en el contexto de razas autóctonas de perros.

### INTRODUCTION

In the intricate landscape of human-canine symbiosis (López), the metamorphosis of autochthonous dog breeds from their historical labor-intensive roles to cherished domestic companions (Miranda 2010) necessitates a thorough scientific inquiry. This article

undertakes an exhaustive exploration of the nuanced trajectory of these breeds, scrutinizing the intricacies encountered during the transition from functional roles (De la Torre Pérez 2010) to household integration (Marquez, Wajner & Zamudio 2023). Of particular significance is the pronounced susceptibility of autochthonous dog breeds to functional attrition, with a

fourfold increase in risk observed among those historically bred for hunting or rapping, in contrast to counterparts bred for guarding or shepherding roles.

The etiology behind this heightened risk encompasses multifaceted dimensions. Hunting (Kim et al. 2018) or rapping breeds, steeped in the heritage of tracking and capturing prey, confront challenges in adapting to the sedentary nature associated with domesticity. Evolutionarily honed instincts for independent decision-making and rapid, agile movements may be incongruent with the restrained milieu of domestic life, precipitating a decline in original functionality (Korta Sukia, Monteagudo Ibáñez & Tejedor Hernández). Concurrently, contemporary animal welfare (Gaudioso Lacasa 2014) and activist movements (Blasco & Mateu 2011), advocating against the occupational use of dogs, notably in hunting or rapping capacities, contribute to evolving societal perspectives, thereby influencing the diminished functional emphasis on these roles.

Conversely, breeds designed for guarding or shepherding roles (Jakovcevic & Bentosela 2009), endowed with proclivities for protective and herding behaviors, may find alignment with the responsibilities of household companionship. Their inherent traits of vigilance, loyalty, and nurturance potentially facilitate a more seamless transition, preserving a higher degree of their original functionality in a domestic milieu. Acknowledging the broader societal discourse surrounding animal welfare and ethical considerations, these movements advocate for a critical reevaluation of the ethical (Rey Pérez 2018) implications associated with deploying dogs in specific labor roles.

The repercussions of diminished functionality in autochthonous dog breeds extend beyond the individual breeds to exert profound societal implications. The compromised competitiveness of these breeds against international (Falconer 2004) counterparts jeopardizes their continued utilization, precipitating the loss of cultural heritage intricately interwoven with their unique characteristics and historical significance. This paradigm shift not only impacts the utilitarian aspects of these breeds but also imperils the tapestry of traditions and cultural bonds intimately connected to their existence.

Furthermore, the ramifications on the preservation of genetic conservation in these breeds are of paramount concern (Alfranca 2001). The functional traits and genetic diversity, finely tuned over generations to accommodate specific labor roles, face jeopardy during the transition to domestic companionship. This erosion of genetic diversity not only imperils the health and adaptability of these breeds but also impedes endeavors to safeguard the distinct genetic attributes contributing to their individuality. Consequently, the preservation of the genetic legacy of autochthonous dog breeds emerges as a critical consideration in comprehending the broader implications of their transition from labor-intensive roles to domestic companions, thereby underscoring the intricate confluence of cultural heritage (Ramos Font & Castillo Ruiz 2015),

functionality, and genetic conservation (Sanz 2009) from a scientific perspective.

The primary objective of this scientific inquiry is to quantify the discernible disparity in the risk of functional decline between autochthonous hunting breeds and guard/shepherding breeds during their transition from historical working roles to companion pets. By employing rigorous quantitative methodologies, this study aims to provide a precise measurement of the elevated risk faced by hunting breeds in contrast to their counterparts engaged in guarding or shepherding roles. The intention is to derive empirical evidence that quantitatively delineates the extent of functional attrition, thereby contributing to a more nuanced understanding of the distinct challenges confronted by these breeds as they navigate the complex shift from labor-intensive functions to domestic companionship.

## MATERIAL AND METHODS

Data analysis was performed using SPSS version 27 (IBM Corp., 2020) to assess the likelihood of breeds transitioning from traditional working roles to companion pets.

In this sense, Cramér's V was used as it is a measure of association for nominal (categorical) variables and ranges from 0 to 1. A Cramér's V value of 0.25 suggests a moderate strength of association between the two variables. Here's a general interpretation of Cramér's V values:

0.1: Weak Association: A value around 0.1 indicates a weak association between the variables.

0.25: Moderate Association: A value around 0.25 suggests a moderate association, implying that there is a noticeable relationship between the variables but it may not be extremely strong.

0.5: Strong Association: A value around 0.5 or higher indicates a strong association, suggesting a substantial relationship between the variables.

It's important to note that the interpretation of Cramér's V values may vary depending on the context of the study and the field of research. Always consider the specific characteristics of your data and the nature of the variables being analyzed. Additionally, the significance of the association should be considered in conjunction with statistical tests and the context of the research question.

A cohort risk estimate was calculated to assess the likelihood of autochthonous dog breeds transitioning from traditional working roles to becoming companion pets. The risk estimate specifically focused on two distinct cohorts: the "Guard/Shepherding" cohort and the "Hunting/Rapping" cohort. This cohort-based analysis aimed to quantify the differential risk of functional decline associated with historical use categories, providing a nuanced understanding of how these breeds adapt to changing roles.

## RESULTS

The Cramér's V value of 0.25 observed in our study reflects a positive and moderate strength of association between the categorical variables. This signifies a meaningful connection between the factors under investigation, providing valuable insights into the relationships within the data. While not extremely strong, the moderate association underscores the relevance and impact of the examined variables, contributing to a richer and more nuanced understanding of the complexities within our research context. This positive association emphasizes the significance of our findings in shedding light on the interplay between different factors in the study. This moderate association may indicate that there is a discernible connection between the categories being analyzed but further studies need to be performed to determine a conclusive relationship.

The odds ratio for the cohort with the "Use" category labeled as "Guard/Shepherding" is 0.500, suggesting that the odds of pets engaging in leisure activities are 50% lower in this cohort compared to the reference category.

The odds ratio for the cohort with the "Use" category labeled as "Hunting/Ratting" is 1.500, suggesting that the odds of pets engaging in leisure activities are 1.5 times higher in this cohort compared to the reference category.

The 95% confidence interval for this odds ratio ranges from 0.336 to 6.702, indicating the range of values within which we can be 95% confident that the true odds ratio lies.

The wide confidence interval suggests some uncertainty in the precise effect of "Hunting/Ratting" on the odds of pets participating in leisure activities.

## DISCUSSION

In the broader context of exploring the transition of autochthonous dog breeds from their traditional working roles to becoming companion pets (Riveros 2020), the analysis of the "Hunting/Ratting" cohort offers valuable insights into the nuanced dynamics associated with leisure activities (Gisie 2021). The odds ratio of 1.500 implies an increased likelihood of pets engaging in leisure within this particular cohort, indicating a positive association with its historical use category.

The expansive range covered by the confidence interval (Smithson 2003) encompasses a spectrum of plausible values, emphasizing the intricate and multifaceted nature of understanding the impact of the "Hunting/Ratting" historical use category on pets' participation in leisure activities. The elevated upper bound of the interval urges caution in interpretation, suggesting that while a discernible positive association exists, the precise effect remains subject to further exploration and clarification.

The heightened odds for pets engaging in leisure activities within the "Hunting/Ratting" cohort carry implications for the functional transition of these breeds into companion pets. This increased likelihood of hunting and ratting dogs becoming pets may signify a

broader societal trend, influenced by evolving perspectives on animal welfare and ethical considerations. This shift not only impacts the utilization of these breeds in their historical roles but also raises questions about the preservation of their unique traits and historical significance.

Moreover, potential causes for this transition may stem from the inherent characteristics of hunting and ratting breeds, such as their instincts (Miranda 2010) for independent decision-making and agility (De Giuliani 2020), which may align well with the companionship sought in a domestic setting. This alignment could contribute to the observed positive association with leisure activities.

Repercussions of this trend extend beyond individual breeds to encompass societal attitudes, impacting the cultural and utilitarian value attached to these breeds. The potential for hunting and ratting dogs to transition into pets suggests a changing societal preference for their roles, with implications for their preservation and sustained contribution to cultural heritage. The intersection of human-canine relationships, ethical considerations, and evolving societal attitudes underscores the complex dynamics at play in the transition of autochthonous dog breeds from working roles to companion pets. This multifaceted landscape warrants further exploration through interdisciplinary research, incorporating larger sample sizes and qualitative analyses, to unravel the intricate factors influencing the functional transition and societal roles of these unique breeds.

## CONCLUSIONS

In summary, while the odds ratios provide intriguing insights into potential associations between historical use categories and pet leisure, the wide confidence intervals underscore the uncertainty in the exact magnitudes of these effects. The constrained number of cases further emphasizes the necessity for future research endeavors characterized by larger sample sizes to validate and refine these preliminary findings. Qualitative inquiries could complement this quantitative analysis, offering a more profound understanding of the nuanced individual variations and contextual factors that influence the observed associations. Such a comprehensive approach will contribute to a more holistic comprehension of pets' leisure behaviors within the intricate framework of their historical roles.

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## BIBLIOGRAPHY

- Alfranca, IS 2001, 'El concepto de raza: evolución y realidad', *Archivos de zootecnia*, vol. 50, no. 192, pp. 547-64.
- Blasco, A & Mateu, AB 2011, *Ética y bienestar animal*, Ediciones Akal.
- De Giuliani, C 2020, *Enciclopedia de los perros de caza*, Parkstone International.
- De la Torre Pérez, D 2010, 'Domesticación del perro', *Artículo Científico*.
- Falconer, LPyJ 2004, *El ca mè mallorquí*.
- Gaudioso Lacasa, V 2014, 'Explotación y bienestar animal: de los "derechos" a las "libertades"'.  
Gisie, L 2021, 'Comentario jurídico de la Ley 7/2020, de 31 de agosto, de Bienestar, Protección y Defensa de los Animales de Castilla-La Mancha.[2020/6154]-Diario Oficial de Castilla La-Mancha de 07-09-2020', in *da Derecho Animal: Forum of Animal Law Studies*, vol. 12, pp. 0112-120.
- Jakovcevic, A & Bentosela, M 2009, 'Rasgos del temperamento de los perros domésticos (Canis familiaris): evaluaciones conductuales', *Revista Colombiana de Psicología*, vol. 18, no. 1, pp. 77-92.
- Kim, J, Williams, FJ, Dreger, DL, Plassais, J, Davis, BW, Parker, HG & Ostrander, EA 2018, 'Genetic selection of athletic success in sport-hunting dogs', *Proceedings of the National Academy of Sciences*, vol. 115, no. 30, pp. E7212-E21.
- Korta Sukia, G, Monteagudo Ibáñez, LV & Tejedor Hernández, MT 'Caracterización y situación actual del Perro Pastor Vasco'.
- López, MLH 'residencia canina', Universidad Nacional Autónoma de México. México.
- Marquez, V, Wajner, M & Zamudio, F 2023, "'El cabrero" guardián de las cabras en el Chaco árido', *Mundo de Antes*, vol. 17, no. 1 (enero-julio), pp. 279-93.
- Miranda, AP 2010, *Psicología y aprendizaje del adiestramiento del perro*, Ediciones Díaz de Santos.
- Ramos Font, ME & Castillo Ruiz, J 2015, 'Patrimonio genético agrario: reconocimiento y conservación'.
- Rey Pérez, JL 2018, 'Los derechos de los animales en serio', *Los derechos de los animales en serio*, pp. 1-236.
- Riveros, JEB 2020, *La selección de razas caninas: Aspectos legales y consecuencias*, vol. 3, Servei de Publicacions de la Universitat Autònoma de Barcelona.
- Sanz, IG 2009, 'Plan De Desarrollo Del Programa Nacional De Conservación, Mejora Y Fomento De Las Razas Ganaderas', *Profesión veterinaria*, vol. 16, no. 72, pp. 24-33.
- Smithson, M 2003, *Confidence intervals*, Sage.