# Domestication drives surprising skull shape similarities in cats and dogs despite 50 million years of evolution



Research conducted by evolutionary biologist Abby Grace Drake and her team has revealed that domestication has not only fostered diversity among cats and dogs but has also led to significant similarities in their skull shapes. This convergence—where unrelated species develop similar traits—challenges conventional understandings of evolutionary biology.

In a study that examined 1,810 skulls from various domestic breeds and their wild relatives, Drake and her colleagues discovered striking similarities between certain breeds of cats and dogs, despite their evolutionary separation by around 50 million years. Featuring a range of specimens, the analysis included prominent breeds such as Persian cats and pugs, which are known for their flat faces. The research aimed to explore how domestication has influenced skull structure in these animals.

The findings suggest that the process of domestication has broadened the diversity of skull shapes beyond that of their wild ancestors. Whereas wild felids and canids typically exhibit more natural variation, domesticated breeds have been subject to human influence that has led them to converge towards specific physical traits—either elongated or flat skulls. This effect has even resulted in some cats being bred to resemble dog breeds, such as XL bully dogs.

Drake's study employed 3D scans sourced from veterinary schools, museum specimens, and digital archives to substantiate their claims. The research highlights the unintentional consequences of selective breeding practices, which have often exaggerated physical traits beyond what is natural for these species. For instance, chickens bred for meat can develop health problems due to excessive breast muscle, illustrating a broader pattern of how human preferences shape animal physiology.

The inclination toward flat-faced pets aligns with fundamental human instincts. Psychological studies propose that humans are biologically predisposed to respond positively to features typical of infants—such as rounded heads and large eyes. This attraction may explain why many of today's popular dog and cat breeds exhibit these exaggerated traits, effectively utilising ancient caregiving cues that humans associate with vulnerability in children.

The UK government's Animal Welfare Committee has responded to these findings with increased scrutiny on selective breeding practices. Reports issued in 2024 raised alarms regarding the health consequences of breeding for extreme physical traits, citing widespread issues such as respiratory difficulties and neurological disorders. The committee advocates for stricter regulations and the cessation of breeding animals with severe hereditary health issues.

In summary, the research conducted by Drake and her colleagues not only underscores the influence of human intervention in the evolution of domesticated species but also illuminates the potential health ramifications of our breeding choices. This study invites a closer examination of the ethical implications of selective breeding and its ensuing challenges for animal welfare.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.gov.uk/government/publications/opinion-on-cat-breeding-practices> - This UK government report discusses the welfare implications of current and emergent feline breeding practices, highlighting how selective breeding for specific traits, such as brachycephaly (flat faces), can lead to health issues in cats, supporting the article's claim about the health consequences of breeding for extreme physical traits.
2. <https://www.gov.uk/government/publications/opinion-on-specialised-dog-reproductive-practices> - This UK government report examines the welfare implications of specialized canine reproductive practices, noting that breeding for extreme characteristics like brachycephaly can result in health problems in dogs, aligning with the article's discussion on the health ramifications of selective breeding.
3. <https://www.gov.uk/government/publications/opinion-on-the-welfare-implications-of-specialised-canine-reproductive-practices> - This UK government report highlights the rise in canine fertility clinics and unlicensed pet breeders, emphasizing the need for regulation to address low welfare breeding practices, which supports the article's mention of increased scrutiny on selective breeding practices by the UK government's Animal Welfare Committee.
4. <https://www.gov.uk/government/publications/opinion-on-the-welfare-implications-of-current-and-emergent-feline-breeding-practices> - This UK government report discusses the welfare implications of current and emergent feline breeding practices, including the impact of selective breeding on skull shapes in cats, corroborating the article's claim about domestication leading to significant similarities in skull shapes among cats and dogs.
5. <https://www.gov.uk/government/publications/opinion-on-the-welfare-implications-of-specialised-canine-reproductive-practices> - This UK government report examines the welfare implications of specialized canine reproductive practices, noting that breeding for extreme characteristics like brachycephaly can result in health problems in dogs, aligning with the article's discussion on the health ramifications of selective breeding.
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7. <https://www.independent.co.uk/news/science/cats-dogs-evolution-b2744251.html> - Please view link - unable to able to access data