

## Topic 9

### BILINGUAL DOGS

If you are a dog lover, this study of canine bilingualism will make your heart sing. The brain scanning experiment summarized here shows that dogs are more than smart, they have bilingual abilities! When Dr. Laura Cuaya, a brain researcher at the Neuroethology of Communication Lab at Eötvös Loránd University in Budapest, moved from Mexico to Hungary, she wondered how a language change would affect her dog **Kun Kun**:

*Would he notice the change in language from Spanish to Hungarian?  
Could he differentiate between languages?*



To answer these two questions Dr. Cuaya and her colleagues designed a unique, never before attempted brain scanning experiment with eighteen dogs (Cuaya, *et al*, 2022). Seventeen were Hungarian and one, **Kun Kun**, was Spanish. Some of the dogs were older and some were younger. All eighteen dogs had heard only one language in their lives. As the dogs rested quietly in an MRI machine (see above image) and listened to excerpts from *The Little Prince*, in Spanish, in Hungarian and then in a scrambled version of Hungarian and Spanish, Dr. Cuaya and her colleagues analyzed their brain activity. Here is what they found:

- a non-human brain can differentiate between languages,
- the primary auditory cortex of a dog can distinguish speech from non-speech,
- the secondary auditory cortex of a dog can distinguish Spanish from Hungarian, and
- the older the dog, the more language hearing experience, the better the understanding of language sounds.

### References

Cuaya, L. V., Raúl Hernández-Pérez, R., Boros, M., Deme, A. and Andics, A. (2022) Speech naturalness detection and language representation in the dog brain. *NeuroImage*, 248  
<https://doi.org/10.1016/j.neuroimage.2021.118811>

The Little Prince: [https://en.wikipedia.org/wiki/The\\_Little\\_Prince](https://en.wikipedia.org/wiki/The_Little_Prince)