

Additional Data

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2. Cat sample demographics

Table S1: Data on observed cats from private households and animal shelters as well as free-roaming cats from 2016 to 2023 in different regions of Germany.

Trial	Number of cats	Household	Outdoor access	Female	Neutered female	Male	Neutered male	Median age (years)	Breed(s)	Total video length (min)
1	30	Private household	14	17	13	13	13	1.96	3 European Shorthairs; 13 mixed-breed; 2 British Shorthairs, 2 Persians	450
2	15	Private household	5	12	N/A	3	N/A	2.6	11 European Shorthairs; 2 Maine Coons; 1 British Shorthair; 1 mixed-breed	230
3	19	Animal shelter	0	14	N/A	5	N/A	1.6	17 European Shorthairs; 2 mixed-breed	1001
4	22	Private household	11	11	N/A	11	N/A	6	18 European Shorthairs; 2 Maine Coons; 2 British Shorthairs	330
5	21	Private household	N/A	9	N/A	12	N/A	6.5	Unknown	111
6	63	Free-roaming cats and loose groups around farms	63	N/A	N/A	N/A	N/A	N/A	Apparently all 63 European Shorthair	1197
total	170	N/A?	93	63	13	44	13	N/A?	112 European Shorthairs; 16 mixed-breed; 5 British Shorthairs; 2 Persians; 2 Maine Coons*	3319
*All observed cats in private households, animal shelters or in the field appeared to be healthy, not suffering from any apparent diseases or limitations of their behaviour or locomotor systems.										

3. Literature inventory for ethogram analysis

We provide a list containing the 20 so-called ethograms, from which we have worked out our labels of the behaviours. We checked the results of our online search for the key words 'ethogramm' and 'domestic cats' and considered everything that met the criteria of a list of behaviours, with descriptions of the individual units, to be an ethogram, regardless of whether the authors of the corresponding

papers also gave it this title. In this way, we follow the same procedure as in the meta-study by Stanton et al. (2015).

Table S2: Inventory of used literature

Year	Author	Title
1992	Beaver	Feline Behavior: A Guide for Veterinarians
2017	Bennett et al.	Facial correlates of emotional behaviour in the domestic cat (<i>Felis catus</i>)
2022	Bol et al.	Behavioral differences among domestic cats in the response to cat-attracting plants and their volatile compounds reveal a potential distinct mechanism of action for actinidine
1996	Van dem Bos et al. 1996	Clusters in social behaviour of female domestic cats (<i>Felis silvestris catus</i>) living in confinement
2007	Burgess et al.	Ontogenesis of morphine-induced behavior in the cat
1992	Bradshaw et al.	The Behaviour of the Domestic Cat
2000	Bradshaw et al.	The signalling repertoire to the domestic cat and its undomesticated relatives
1997	Cameron-Beaumont	Visual and tactile communication in the domestic cat (<i>Felis silvestris catus</i>) and undomesticated small felids
2007	Cottam et al.	Effect of an odor eliminator on feline litter box behavior
2008	Ellis et al.	The influence of visual stimulation on the behaviour of cats housed in a rescue shelter
2017	Ellis et al.	Does previous use affect litter box appeal in multi-cat households?
2008	Feuerstein et al.	Interrelationships of dogs (<i>Canis familiaris</i>) and cats (<i>Felis catus</i> L.) living under the same roof
2019	Huck et al.	The use of animal-borne cameras to video-track the behaviour of domestic cats
1974	Leyhausen	Cat Behavior: The Predatory and Social Behavior of Domestic and Wild Cats
2017	McGowan et al.	The ins and outs of the litter box: A detailed ethogram of cat elimination behavior in two contrasting environments
2021	Nicholson et al.	Development of an ethogram/guide for identifying feline emotions: a new approach to feline interactions and welfare assessment in practice
2015	Stanton et al.	A standardized ethogram for the felidae: A tool for behavioral researchers
2020	Tavernier et al.	Feline vocal communication
2014	Turner & Bateson	The Domestic Cat - the Biology of its Behaviour
1995	UK Cat Group	An Ethogram for Behavioural Studies of the Domestic Cat

4. Deriving categories from functional circles

In this paper, we follow the categorisation in functional circles. Functional circles (German "*Funktionskreis*") is a term introduced by Uexküll (1921) to describe the specific relationship between organism and environment. It refers to the relationship between the characteristics of the animal's environment, its perception by the individual (through the organs of memory) and the individual's reactions to it (through the organs of action). Unfortunately, Tembrock (1982) adopted the concept of functional circles and used the term in a different context, as a category of behavioural patterns serving (often hypothetically assumed) common functions or goals in an animal's everyday life. Today, in ethology we understand a functional circle to be the action classes of behaviour that are oriented and named according to the life functions (e.g. reproduction, locomotion). Depending on the literature, the names and summaries vary. In this manuscript we use the following labels proposed by Tembrock (1982) for object-oriented studies translated into English. In addition, we supplement the category of general body postures (see Table 1: Body postures) and the category of vocalisations (see Table 12: Vocalisations).

Source:

von Uexküll, J. (1921). Der Funktionskreis. In J. von Uexküll (Ed.), *Umwelt und Innenwelt der Tiere* (pp. 44–49). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-24819-5_5

Tembrock, G. (1982). *Spezielle Verhaltensbiologie der Tiere*. Band 2: Wirbeltiere.

5. Excel focal protocol example (will be submitted subsequently)

6. Technical information on the illustrations

The drawings were created by the second author (MR) and catalogued in the app “Procreate” by Savage Interactive Pty Ltd [46], Version 5.3.5 as scalable vector graphics and exported in png format at 2048px × 2048px and 132 DPI.

Source: Procreate, Savage Interactive Pty Ltd, Version 5.3.5