the open one. Each set of who-where-when was individualized and random. The older male responded properly in all four test phases, the younger male in 3 of 4 phases, and the female failed due to her preference for one gate.

**Key words:** episodic-like; integrated memory; open field; cats; who-where-when

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### 13

**The development of an emotional ethogram for Felis silvestris focused on FEAR and RAGE**

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Affective neuroscience describes FEAR and RAGE (frustration) as basic emotional systems related to negative affect (Panksepp 1998), and this emotional component to behavior should not be confused with its motivation. FEAR is aroused by the anticipation or presence of an aversive stimulus, whilst RAGE is triggered by the denial of a valued incentive and/or where expectations are not met. Spontaneous, involuntary facial expressions occur due to the contraction of specific muscle groups as part of emotional arousal, and as such have been used to make inferences about affect in a range of different mammalian species. We sought to reliably define the spontaneous facial responses associated with FEAR and RAGE in *F. silvestris*. Using two captive populations of Scottish Wildcats (*Felis silvestris grampia*), a series of controlled protocols incorporating appropriate situational contingencies were video-recorded. For FEAR this included a person directly approaching a cat that was free appropriate situational contingencies were video-recorded. For different mammalian species. We sought to reliably define, laterality in ear position was also observed, suggesting a condition, whilst EAD 104 (ears rotator) was associated with the RAGE conditions. Within the RAGE condition, laterality in ear position was also observed, suggesting a right EAD 104 (ear rotator) bias. The type of information generated from this research can be used to help differentiate between these two core emotions.

**Key words:** cat; aggression; ethogram; emotion; affective neuroscience

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### References


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### 15

**Incentivizing cat electronic identification**

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Pet identification and registration play a key role in guaranteeing animal health and welfare, and they stimulate responsible ownership, helping to control the phenomenon of straying. Transponder implantation provides a permanent identification system currently frequently used for dogs, but it is still not common for cats. Cat electronic identification (CEI) seems to raise general public skepticism, especially concerning its safety. No scientific studies have tested its efficacy or evaluated the frequency of adverse effects of such systems over time in domestic felines. This study evaluated long-term effects of electronic identification on 126 cats. Cats were divided into two groups to test transponders of two sizes (12mm/9mm). Transponders were implanted in the neck. Periodic clinical examinations were carried out up to six months after implantation. A smartphone application, connected to the transponder reader via Bluetooth, was developed to automatically open the cat record form to insert clinical information during the check-up, avoiding manual data transcription. No adverse local reactions were observed. Fisher’s test showed that migration events were rare and not significantly associated to the transponder size or the sex of the animal. Micro-chipping did not impair cat health and welfare. The 9 mm transponder could be proposed as the standard CEI. It requires a 25% thinner needle and so may be more readily accepted by apprehensive owners. CEI is a reliable identification system for domestic felines. CEI could improve the management of cat colonies and promote more responsible ownership.

**Key words:** domestic cat; electronic identification; traceability; transponder; welfare