

Changing the culture of laboratory rat care

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Introduction



Standard laboratory rat housing consists of a small cage, bedding, and a rudimentary shelter

Rats are habituated to standard procedures but are rarely *socialized* to humans

Rats are inquisitive by nature and able to experience a range of positive and negative emotions; housing and handling conditions likely affect their welfare

Objective: To assess the effects of highly enriched housing and a socialization protocol on rat behaviour

Methods

Housing:

30 female Sprague-Dawley rats were purchased from Charles River Canada at 21 days old

They were housed in groups of 5 in large, 3-storey enriched cages with soil at the bottom

Rats were continuously filmed with infrared cameras

Socialization:

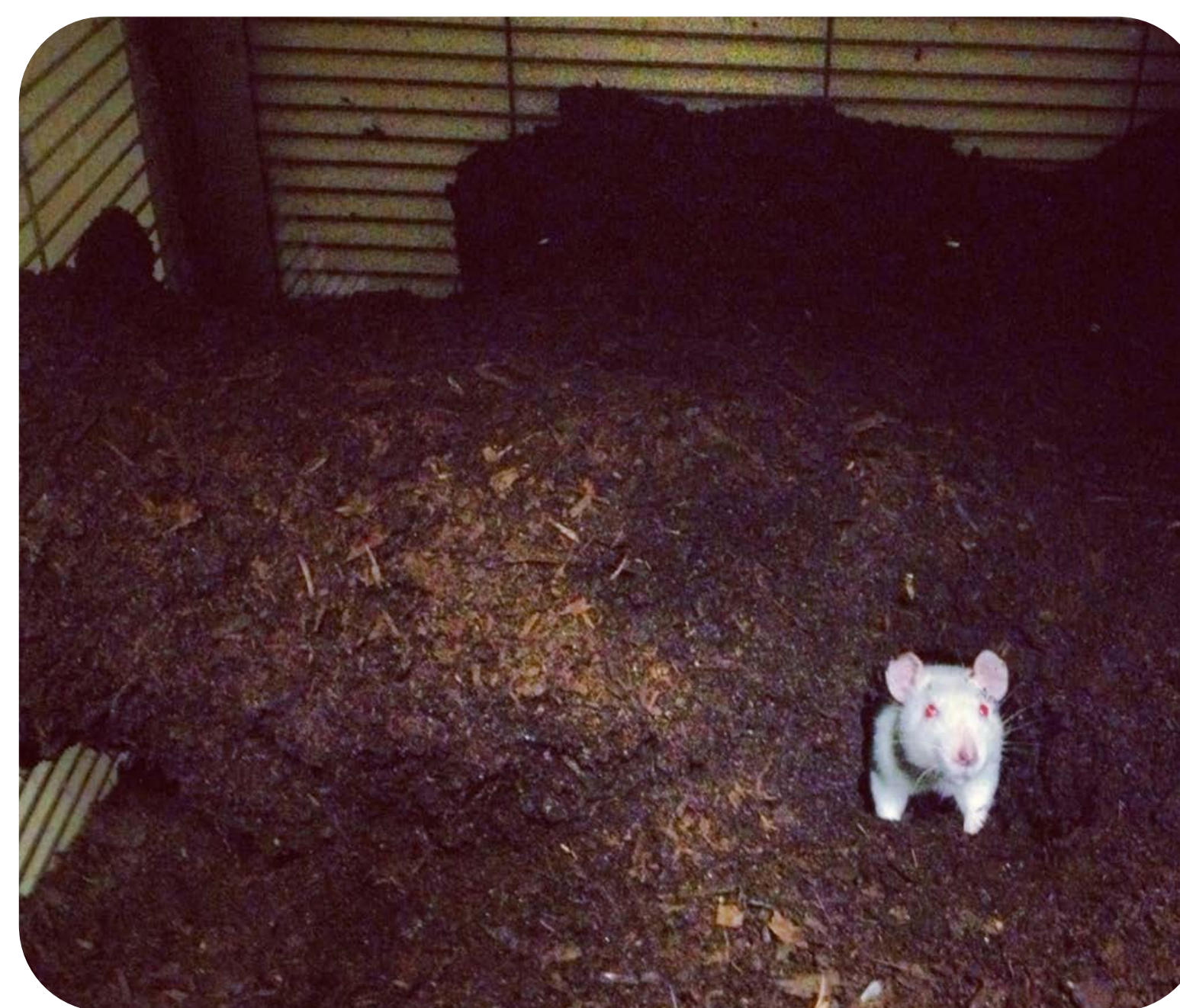
8 female Long-Evans rats were purchased from Charles River Canada at 21 days old

A researcher spent ≈ 2 h/d interacting with the group

Rats were also given daily free range time outside the cage



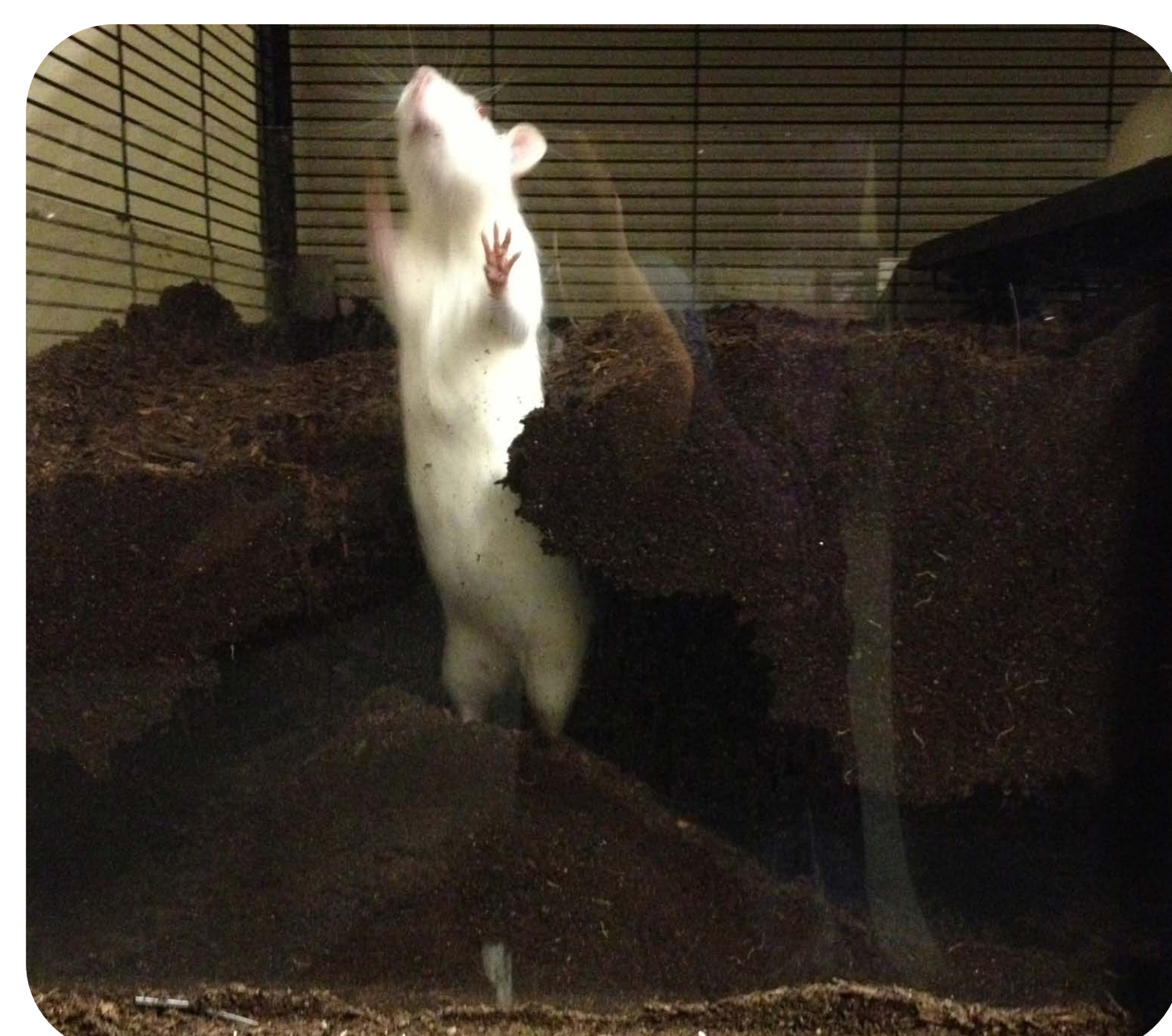
Burrowing



Climbing



Upright standing



Interacting with objects



Socialization



Conclusions

Rats in enriched housing use a large repertoire of behaviours, including several that are not possible in standard cages

Socialized rats were friendly towards familiar and unfamiliar humans and willingly climbed into a testing apparatus

Such changes can make rats both more interesting to us and more interested in us, changing the way we value these animals

Dogs and cats used in research “should be allowed to exercise and provided with positive human interaction” (NRC, 2011); we suggest that this guideline should also be applied to laboratory rats