Review of: "Novel Method to Assess Group Dynamics in Rats Reveals Deficits in Behavioral Contagion in KM Rats"

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Potential competing interests: No potential competing interests to declare.

The paper is particularly interesting because it proposes a simple, elegant, and easily replicable animal model for experimental studies related to deficient social motivation, contributing to a translational approach to bring more effective treatment to patients with ASD.

It evaluates the imitation behavior (here called “behavioral contagion”) tested in groups of KM - an ASD-like phenotype rat strain - and normotypic Wistar rats. As a result, KM animals showed a lower level of imitation than Wistar. This effect was analysed as analogous to the social deficit observed in autistic humans.

The text is written clearly and precisely. The experimental design does not involve aversive events or removal of subjects from the cage, allowing the evaluation of imitation behavior in the subjects' “everyday life”, without interference that could pollute the identification of the genetic variable that interferes with this behavior.

I only have a few comments for the authors to consider:

1) The use of Wistar rats as demonstrators in both groups is not adequate. I think that it is necessary to replicate the same experiment using demonstrator and observer rats from the same strain;

2) What is the advantage of using the term “behavioral contagion” instead of "imitation"? Although it has been suggested that these terms differ from each other, these differences were not indicated in the paper. Furthermore, sometimes the authors end up using “imitation” to name the observers' behavior of following demonstrators. The multiplication of terms is not desirable in science. So, unless the need to use the term "contagion" is justified, my suggestion is to adopt the better-known term in Psychology, "imitation".

3) The issue of the lower motor activity of KM animals needs to be better analysed. As the measured response involves a short latency between the emission of the demonstrator's response and that of the observers, the lower motor activity may affect the results regardless of the KM animals' social ability to imitate the other animals.