Webinar Q&A Report:
Innovative Approaches to Tracking and Quantifying Behavior in Rodents

How do you avoid over-exploring your behavioral data statistically? I want to look closer at my behavior but don't want to do too many comparisons.

Jason Rogers, PhD: Start with your research question and hypothesis. What do you need to analyze in order to answer your questions and/or test your null? If there is something interesting (positive or negative results), then you can explore further or deeper with follow-up questions. I hope that helps. Feel free to contact me directly!

I have been trying to use EthoVision to track animal in dark and facing some issues. First, the software does not record good quality videos in dark. Second, the animals detection in infrared is also quite poor. Do you have any suggestions?

Jason Rogers, PhD: Tracking in the dark can be quite challenging. If you don't mind, please send me a video (jason@noldus.com) and we can take a look at some options in the Detection Settings.

Did you see a difference with round or squared Elevated Open Field?

Jason Rogers, PhD: A publication from 2014 found no differences between round and square open fields (http://dx.doi.org/10.1007/s11062-014-9458-x)

If all behavioral testing is subjective, what sorts of checks should be imposed when running a behavioral study in order to make sure the results are reliable and reproducible?

De Wet Wolmarans, PhD: Sad to say, but I think it's impossible. Labs just do things differently, and the best lesson I've learned over time is to be honest in your own space, apply methods that are robust (unlike the bulk of MB tests out there) and rethink experiments so that they really answer the questions you ask. Also, try to use/replicate/modify the work of labs you respect (not necessarily those that publish in high-impact journals all the time...) and work from there. I think the most important thing is to read very carefully in papers on topics of methods, because for me, that is pivotal. I often came to see how poorly some methods sections are written when I began to fish for detail! Last, when you reinvent the wheel, begin from scratch, and really ask what your animals are doing (I'm asking my colleagues all the time what the forced swim test is actually testing, since I believe it's more intelligent animals that have higher immobility). If you report your methods clearly, so that anyone can replicate it and get the same result, then you are on the right track!

The populations of the deer mice you used in your experiments were wild-caught animals or you bred them in the lab?

De Wet Wolmarans, PhD: These animals are sourced from a single colony in South Carolina, USA. However, these animals have a very tight genetic pool, they inbreed in the wild quite often, basically never leave their home territory and form tightly knit family groups. This makes breeding them in a lab quite advantageous as one more readily reproduces a wild-type population as opposed to some other strains, I presume.

Is EthoVision a reliable software for evaluating object exploration, as is the case in Novel Object recognition?

Jason Rogers, PhD: Indeed. I published a study where we used an object exploration task tracked with EthoVision (https://link.springer.com/article/10.1007/s00213-008-1187-7)

Did the drug treated mice group experience any withdrawal symptoms? If so, how did it influence your results in terms of increase or decrease in stress behavior?

Jason Rogers, PhD: We never tested or looked at withdrawal. I suspect it is profound, particularly for the stress animals, but our behavioral testing was done well after any withdrawal symptoms would have had any influence. It's a great point to note, though, and I appreciate it!

Is there a difference in the stereotypical behavior and/or in the social behavior between genders and in animals of different age?

De Wet Wolmarans, PhD: Your question pertains to sex-differences in stereotypy and sociability, and I must say, I haven't looked into this yet. What we do know is something is definitely going on there (based on new data relating to the manner in which sex and immune functioning interact), so it might be cool to look into this.

Would EthoVision be able to detect/recognize episodes of seizure in the field (epilepsy animal models)?

Jason Rogers, PhD: Theoretically, yes, you could detect seizure episodes. In addition, you can integrate EthoVision XT with EEG and telemetry systems.

Is it possible to combine EthoVision and optogenetics or fiber-photometry? Meaning that once a manual key is pressed, it sends a signal to trigger lights or record an event in the fiber-photometry?

Jason Rogers, PhD: Absolutely. EthoVision can trigger lights or an event directly without any need for a manual key (e.g., based on the animal's movement or location), or you can manually key an event yourself. It uses the Trial & Hardware Control Module. Email me and I'll happily share some articles and examples, jason@noldus.com.

If you have additional questions for Noldus Information Technology regarding content from their webinar or wish to receive additional information about their products and services, please contact them by phone or email:

North America

Noldus Information Technology
North American Headquarters
153 Edwards Ferry Road, Suite 310
Leesburg, Virginia
United States, 20176

Tel: +1 703 771 0440
Toll free: 1-800-355-9541

Email: info@noldus.com

Global

Global Headquarters
Wageningen, the Netherlands

Tel: +31-317 473 300

Email: info@noldus.nl
         press@noldus.nl