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Advancing environmental risk assessment: investigating the relevance of non-conventional endpoints for effect prediction

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Propositions accompanying the dissertation:

“Advancing Environmental Risk Assessment: Investigating the Relevance of Non-Conventional Endpoints for Effect Prediction”

By Sofie Rasmussen

1. Non-conventional endpoints can help address toxicity gaps where standard toxicity testing might not be sufficient in predicting all potential environmental effects (Chapter 2 and 3, **this thesis**).
2. Non-conventional endpoints such as behaviour add valuable information regarding the toxicity of a neurotoxin (Chapter 3, **this thesis**).
3. Although promising for capturing sublethal effects of neurotoxic chemicals, non-conventional endpoints do not add additional information on toxicity compared to standard methods in all considered circumstances (Chapter 4 and 5, **this thesis**).
4. The importance of considering environmental relevance in terms of mode of action of the chemical, sensitivity of species and environmental realism is evident for enhanced effect prediction (**this thesis**).
5. Including non-conventional endpoints such as behavioural changes alongside standard endpoints in risk assessments would reduce demands on time and resources while being equally sensitive and relevant to population levels (Bertram et al., 2025).
6. Increasing the mechanistic understanding of chemicals toxicity through non-conventional testing can enhance chemical and biological read-across and hence improve the performance of environmental effect predictions (Rivetti et al., 2025).
7. Mode of action of a chemical is not a constant property of the compound but may vary between species, life stage, or environmental setting (Van den Berg et al., 2019).
8. It is impossible to test all potential environmental exposure scenarios; there is always a risk of an unexpected effect not considered in our current assessment (Harrison et al., 2025).
9. Allowing flexible testing in risk assessments taking environmental realism into account can streamline regulatory processes while increasing sensitivity and enhancing environmental protection.
10. Making a plan is good but being able to change that plan is even better.