

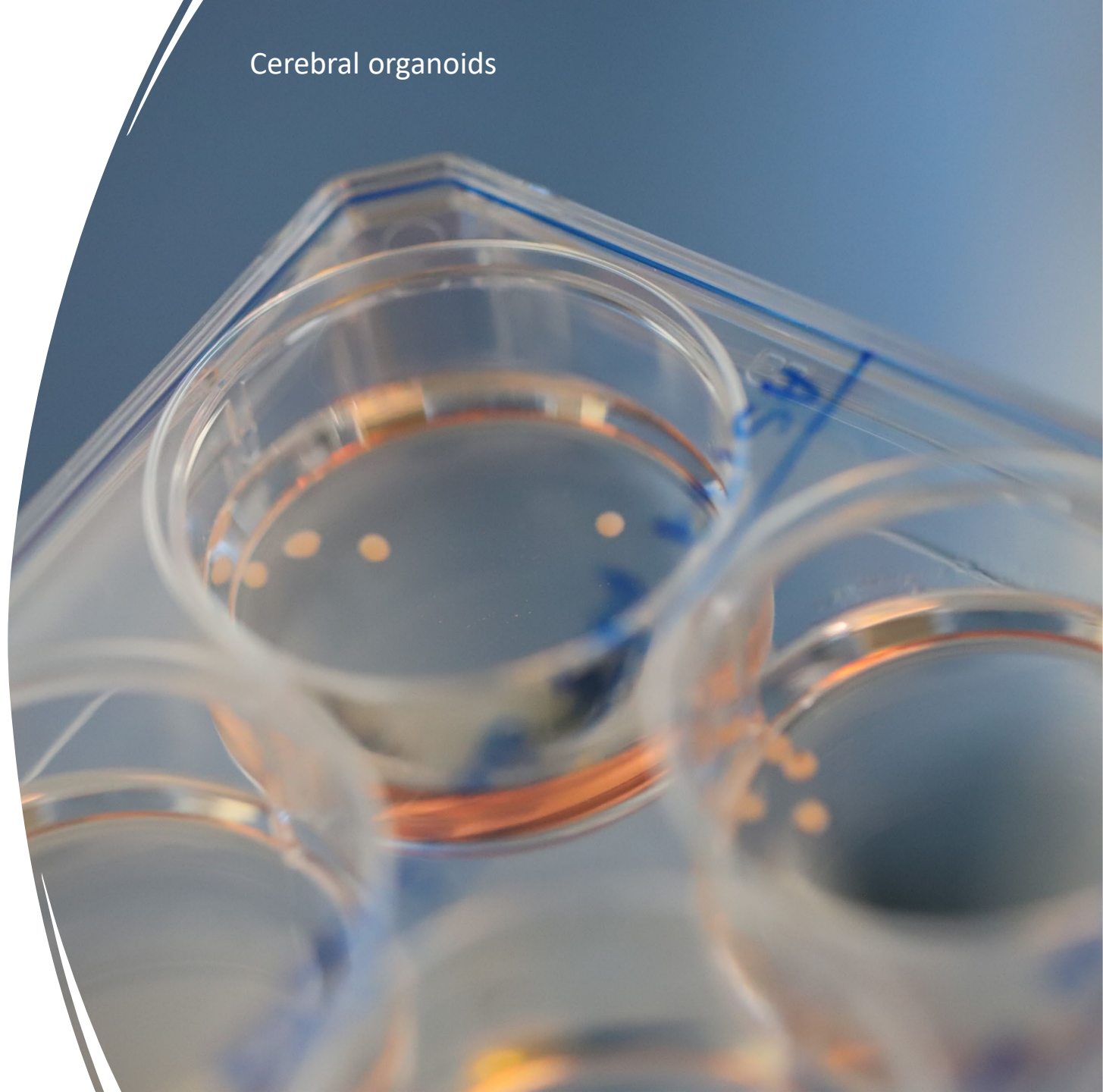
A prospective legal framework for + brain organoids, embryoids and • chimera

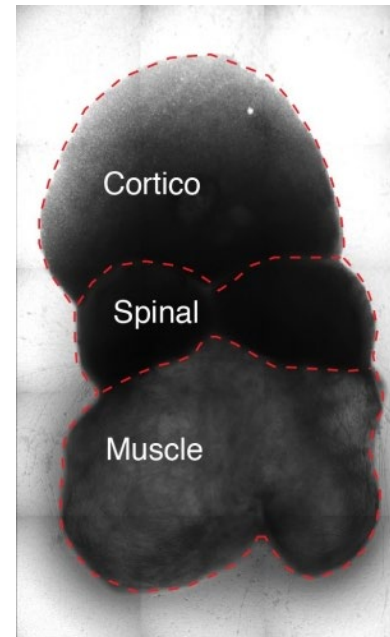
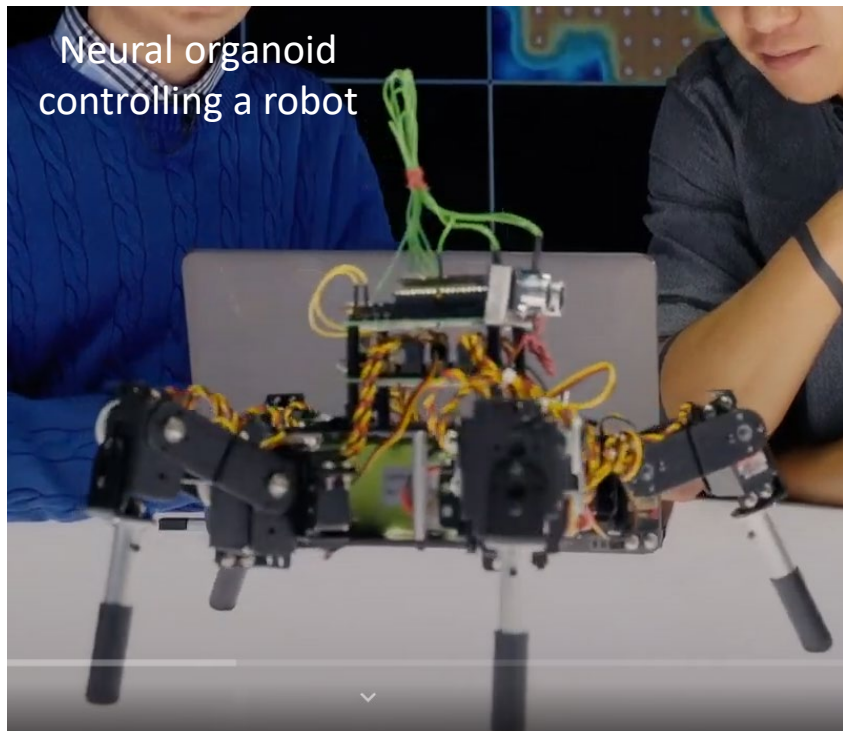
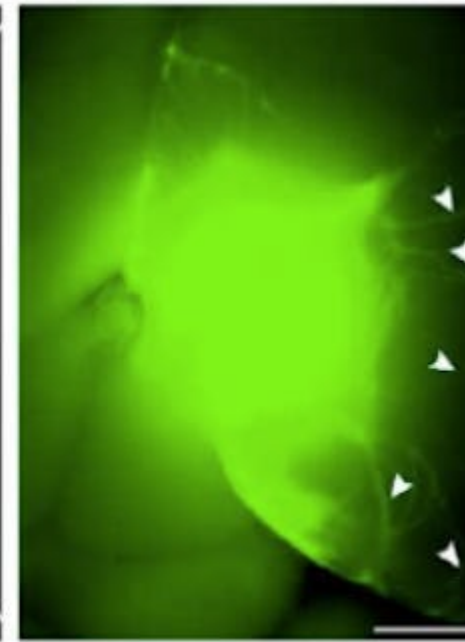
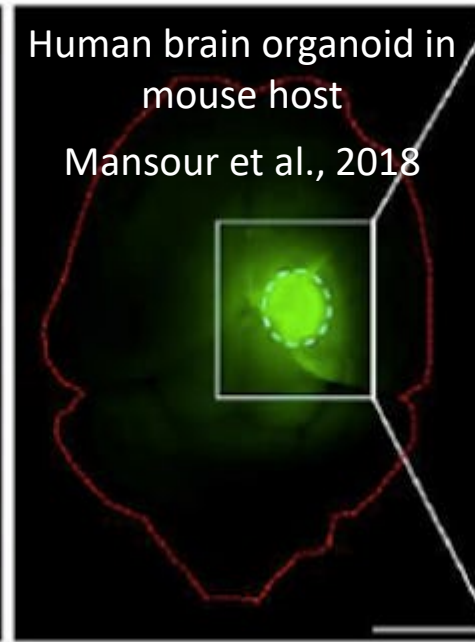
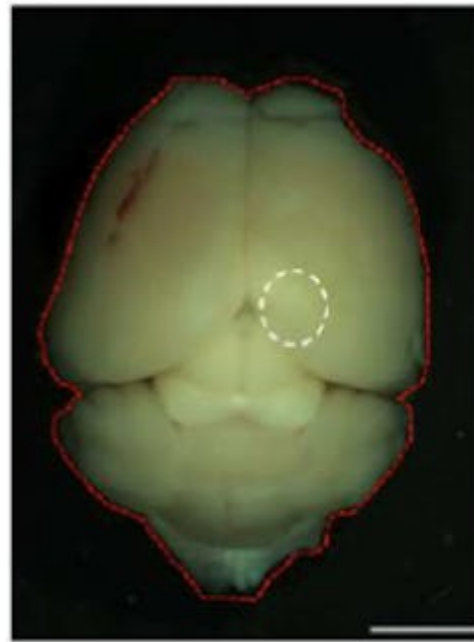
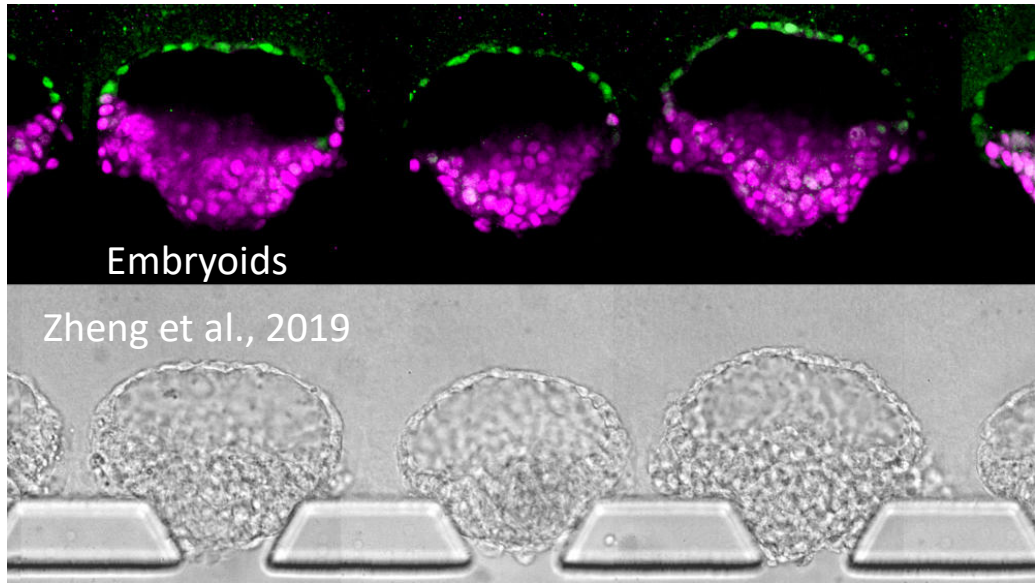


What are organoids?

- Cellular structures derived from embryonic stem cells (ESC) or induced pluripotent stem cells (iPSC)
- Self-organizing in 3D
- Reproduce structural and functional features of a tissue or organ

(Boers et al., 2018)





Open technical, ethical and regulatory questions



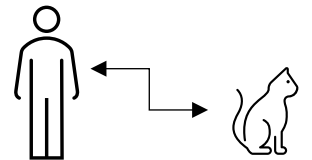
- Neural organoids: could they have a minimal degree of sentience? Would it be ethical to conduct experiment on them if it is the case?



- Embryoids: how close are embryoids to "real" embryos? Should embryoids be treated as embryos?



- Chimeras: to what degree are chimeras "humanised" by human organoids? Are there ethical limits to chimerisation?



Overview of the research topic

- **Scope:** mainly French law on fundamental research on stem cells and animals, as well as EU law and international law
- **Objectives :** anticipate a possible legal framework or legal approach for novel entities used in research
- **Research questions**
 - Are current legal norms fit for the challenges raised by novel entities?
 - How are biological concepts integrated into lawmaking?
 - What future for our tradition of legal anthropocentrism?

Novelty of the research

- Work builds on the **emerging international literature** on organoids and novel entities
 - Active discussion in life sciences, ethics, philosophy, less so in the field of law
 - Increasing number of productions from institutional bodies
 - French doctrinal contributions still rare
- At this time, this work is the only PhD conducted in Law on organoids in France

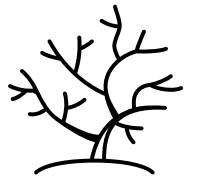
A methodological framework: a risk-based approach to novel entities

- Researchers would be tasked with assessing the risks involved with the protocols they will undertake
- Sentience & its intrinsic value
 - Treated as an intrinsic risk (risk of creating suffering)
 - Extending the growing recognition in law of animal suffering to novel forms of life
- Autonomy & "biological autonomy"
 - Treated as an extrinsic risk (risk of the entity to cause damage)
 - Ability to generate damages (to the environment, to human health, to protected human values)



Conclusion

- Biotechnologies allow the **exploration of many more life-forms** that are possible but never occurred on the tree of life
 - Each type of novel entity raises common questions but also specific questions
 - Challenge to traditional legal categories
- Possible way to harmonise the legal framework surrounding this research through a risk-based approach, looking at two main parameters :
 - (1) risk of emergence of sentience
 - (2) risk of biological autonomy





Thank you for your attention!

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