





Presentation to the EBRAINS Workshop, 07.09.2022 HBP Partnering Projects Meeting Mayen Cunden



EMBRACE Background

EMBedding Responsible Research And Innovation in Future and Emerging TeChnologiEs

Focus on RFET (Research on FET)

- H2020 FET programme
- European Innovation Council
- Novel ideas and radically disruptive technology
- But transformative as well in terms of the societal benefits (for example in the development of new therapies and/or new cures)
- Societal benefits raise questions of social and ethical concerns











Applied Brain Models: Ethical issues

- Intersection of neuroscience and ICT can raise many concerns
 - Traditional research ethics (animals, human participants, consent...)
 - Research integrity (conflicts of interest,...)
 - Data issues (data protection, data management, governance,...)
 - Social issues (dual use, misuse, patient involvement, social consequences,...)
 - Philosophical questions (consciousness, moral status,...)
- Many of these ethical issues are not clear-cut and/or settled
 - Use of NHP models cannot be done ethically (Neuhaus, C.P., 2016)
 - Anonymity of fMRI data -> applicability of GDPR









Need for RRI

- Benefits of RRI in Applied Brain Models
 - Justification of risk
 - Licence to operate
 - AND: excellent science must be responsible science
- Moral Question: What approach will EBRAINS & other research infrastructures in neuroscience take?
 - Implementation of responsible practices in EBRAINS
 - Which RRI activities must/will be retained, can be retained and would be nice to retain?
 - What would be the justification for that selection?











Responsible Research and Innovation











EMBRACE + ORBIT RRI Training

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Data Governance Foundations Learn More	Stakeholder Engagement Learn More	Design of Ethical Al Systems Learn More	Research Integrity Learn More





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Ethical & social issues in brain models

- Clinical diagnosis
- Neurorobotics
- Conflicts of interest:
 - Globalization
 - Chinese data













Development of FET

- Impact on society
 - Public perception risk
 - AI: Enabler of solutions to grand society challenges issues of trustworthiness
- Social & ethical concerns raised
 - Innovation must be aligned to values, needs and expectations of society
 - Data governance, public engagement, ethics of AI and research integrity













Lessons Learned from EMBRACE

- Clear need for researcher training in RRI
- Compliance/regulatory (not ethical) issues tend to dominate RFET
- Interdisciplinary collaboration is challenging when implementing RRI
- Interpretations of RRI continue to be subject of debate
- Implementing RRI reveals gaps in knowledge of substantive issues
- Success of RRI implementation is difficult to prove















Some further insights

Application to Applied Brain Models

- RRI remains a contested concept
- Expectation management is important
- Uncertainty and conflict remain
- RRI is not a solution, but a process
- RRI needs to co-evolve with the science
- RRI offers the potential for intervening and interacting at an EBRAINS policy level











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References

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- Neuhaus CP. J Med Ethics 2018;44:323–327. doi:10.1136/medethics-2016-104088
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Thank you

EMBRACE Responsible Technology

www.humanbrainproject.eu

www.ebrains.eu





the European Union