

## **The impact and potential impact of developments in the brain sciences on the law**

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**Project description:** The last few decades have seen huge technological advances which have enormously increased scientific understanding of the workings of the human brain. Considerable sums are being invested into further research to gain insight into the working of human and animal brains: the European Union's Human Brain Project has a budget estimated at €1.19 billion and the USA's BRAIN Initiative has a similar sized budget. Therefore, the next few years are likely to see even greater progress

Greater understanding of the brain challenges many of the fundamental assumptions of the law and the ways in which the law approaches evidence. Jurisdictions across the globe are facing these challenges and will need to assess how best to respond. Opportunities exist to learn from approaches in different jurisdictions and to develop interdisciplinary dialogues which will enable legal systems to understand the science and develop best practice.

A non-exhaustive list of possible topics, any of which could be the focus of this research, could include:

- human agency,
- capacity,
- freewill,
- memory,
- lie detection,
- memory detection,
- bias,
- pain,
- cognitive enhancement, and
- artificial intelligence.

The doctorate provides the opportunity to select one of the topics listed above and to explore current scientific understanding of that topic, identify likely scientific advances based on current areas of scientific research, assess the validity and applicability of the scientific findings to law and legal reasoning and then set that science in the context of legal principles and current legal approaches across a range of jurisdictions in order to recommend best practice and identify areas of future scientific research which will benefit the law.