

# Preface

While the past few years have repeatedly been entitled as the “era of biotechnology”, most recently one has to get the impression that at least the same degree of attention is being paid to the latest developments in the field of neurosciences. As in the fields of biotechnology and nanotechnology, neuroscientific research also opens a barely manageable range of possible applications, some of which are still related to a purely experimental setting, while others are already in practical use. The possible applications cover aspects as diverse as the development of mind reading machines, lie detection methods, or brain–computer interface applications for the improvement of disabled person’s daily life.

It is by now nearly impossible to oversee the number of research projects dealing with the functionality of the brain – for instance concerning the organizational structure of the brain – or projects dealing with the topic neuro-economics or neuro-marketing. Massive efforts have also been taken in the field of prediction; for instance, some scientists consider it possible to predict a person’s decision before he has ever told it. Hence, a huge practical interest is being paid to neuroscientific developments. This especially holds true for the usage of neuroscientific methods in court trials. In the USA, companies such as Cephos and NO Lie MRI canvass the usage of image-guided procedures – especially the functional magnetic resonance tomography – in different legal areas. Also other countries show a strong development of comparable methods: In India, two states with together about 160 million citizens use the so-called BEOS-Test (Brain Electrical Oscillations Signature), which is initially based on the electroencephalography (EEG). The activity measured by the EEG is evaluated by specific software; an interpretation of the data by the investigator is not planned. In 2008, the decision of an Indian court gained worldwide attention, basing its conviction essentially on the result of a BEOS-Test and convicting the concerned woman to a life-long sentence.

The above-mentioned procedures are connected to a wide variety of legal questions. These questions concern the frame conditions of scientific projects as well as the right approach toward the usage of generated findings. With regard to this utmost importance of the topic for latest developments, it is of special interest

to compare the different legal systems and strategies which they hold at hand for dealing with those legal implications. Therefore, this volume contains several “country reports” from around the world, as well as reports of selected international organizations, in order to show the different legal approaches towards the topic. Each chapter aims to survey the relevant legal order’s landscape both for the generation of neuroscientific knowledge (i.e. probands’ rights, the relationship between research participant and researcher, the problem of incidental findings etc) and for the usage of neuroscientific knowledge.

This book aims to give a first and lasting impetus for further and – given the dimension of the issue – much-needed internationalization of the discussion. My special thanks go to my colleagues involved for their commitment, to the members of my research group at the University of Bonn for their substantial input, and last but not least, to Dr. Brigitte Reschke at Springer Publishing for supporting this project.

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