FUNCTIONAL NEUROIMAGING IN CHILD PSYCHIATRY.

This book reviews the recent rapid development of functional neuroimaging techniques and their implications for child psychiatry. It is unique for several reasons. The integration of different scientific fields which are related to functional neuroimaging, especially scientific input from genetics, behavioural and neuropsychological testing and clinical data is considered. In addition, this book is focused on children, and in that aspect it is unprecedented. The aim is to better understand childhood psychiatric disorders and discuss which
imaging technique is most appropriate for which clinical questions. Because of the fact that the field of functional neuroimaging in child psychiatry is in development, the aim of the book cannot be wholly fulfilled: there is a lot of scientific knowledge regarding functional imaging in adulthood, but only a limited data source regarding neuropsychiatric disorders in childhood and adolescents. This being the case, this book is a pioneering work, showing all the weaknesses in our present knowledge.

The book is divided into five sections. Part 1 is dedicated to the description and future potential of the various functional imaging techniques currently used to study the human brain. Readers should come away from this section with an understanding of the relative advantages and limitations of each of these techniques and become fluent in the language of nuclear medicine and neuromagnetic imaging. For this purpose, a glossary of the terms commonly used in functional neuroimaging is provided at the end of the book. In addition, the issues raised by the application of these techniques to paediatric studies are clearly and uniquely addressed. Part 2 comprises the ethical issues raised by the inclusion of children in functional neuroimaging protocols. Part 3 gives an overview of neural and cognitive development, and addresses the issues of controlling as well as exploiting these maturational changes in neuroimaging research, particularly in functional magnetic resonance imaging studies involving cognitive activation. Part 4 reviews the progress made in research on child psychiatric disorders. Because of the paucity of research in children, the review of imaging findings in adults often predominates and provides hypotheses to be tested in children. Each group of psychiatric disorders is described separately, and the specific problems (scientific, technical and ethical) of studying children with specific disorders using neuroimaging are covered. Finally, Part 5 addresses future directions. It introduces the important tools of genetics and neuropsychology that are expected to act synergistically to potentiate the yield of neuroimaging research, and discusses how neuroimaging findings can be interpreted within the context of neurodevelopmental disorders.

In the concluding remarks, the development of new brain imaging techniques and strategies that were not covered previously are mentioned. The editors also express their opinions regarding the most important advances and future applications of this exciting field of research in child psychiatry.

Because this book contains articles by several different authors, there are obvious differences regarding style, approach, etc. I would propose that in the next edition, which is sure to follow, this lack of homogeneity in the articles should be reduced by sticking to the same article structure, though certainly, this structure may differ across the five sections.

In summary, this is a useful text for clinicians and scientists interested in the biological bases of psychopathological disorders. This is a pioneering book portraying our current knowledge in the field. Within that critical work up of the existing data, it is an up-to-date review.

Hopefully this book will stimulate further scientific work in this field, so that we do not have long to wait for the second edition. For this I would propose the inclusion of one chapter devoted to computerized EEG analysis in the methodological part of the book, and efforts to minimize the effect of personal style on the individual chapters.

Georg Spiel
Department of Neurology and Psychiatry of Children and Adolescents, General Hospital, Klagenfurt, Austria