

The Bereitschaftspotential

Movement-Related
Cortical Potentials

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Movement-Related Cortical Potentials

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Springer Science+Business Media, LLC

Library of Congress Cataloging-in-Publication Data

The Bereitschaftspotential: movement-related cortical potentials/edited by Marjan Jahanshahi, Mark Hallett.

p. cm.

Includes bibliographical references and index.

ISBN 978-1-4613-4958-7 ISBN 978-1-4615-0189-3 (eBook)

DOI 10.1007/978-1-4615-0189-3

1. Motor cortex. 2. Electroencephalography. 3. Movement disorders. I. Jahanshahi, Marjan. II. Hallett, Mark.

QP383.15 .B475 2003

612.8'252—dc21

2002040791

ISBN 978-1-4613-4958-7

©2003 Springer Science+Business Media New York

Originally published by Kluwer Academic/Plenum Publishers, New York in 2003

Softcover reprint of the hardcover 1st edition 2003

10 9 8 7 6 5 4 3 2 1

A C.I.P. record for this book is available from the Library of Congress

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PREFACE

The Bereitschaftspotential (BP), also known as the readiness potential, was first described by Kornhuber and Deecke in 1964. It is a negative wave that was originally recorded from the surface of the scalp beginning 1 to 1.5 s prior to self-paced movements. The BP has become a well-established tool in the motor physiology laboratory, and from recent publications in scientific journals it is evident that the BP is also very much alive and well as a research tool. Its amplitude or latency have been shown to be impaired in neurological disorders such as Parkinson's disease and in patients with focal lesions of the frontal or parietal cortices. There has been a surge of interest in the BP, with new methods for its measurement such as MEG, intracranial recordings, and concurrent EEG and PET/fMRI. The measurement of the lateralised readiness potential has proven to be an interesting and useful refinement.

However, when reviewing the relevant literature, there are still a number of fundamental questions relating to the BP that remain unanswered, such as its likely generators, whether it has several components, and if so whether these reflect the concurrent or sequential activity of different brain regions. The particular factors that affect its amplitude, slope and latency, the neurochemical and pharmacological influences on the BP, the precise nature of the processes that contribute to the BP, and the function, significance or value of the BP remain to be clarified.

The aim of this book is to bring together some of the most important findings from the literature in a single volume, to highlight and address the pertinent outstanding questions, and to identify the key topics for future investigation in this area. This book was put together in honour of Hans Kornhuber and Lüder Deecke. We hope that its contents gives a flavour of the work done on the BP during the last 38 years and is proof of the longevity and importance of Kornhuber and Deecke's discovery.

Marjan Jahanshahi
Mark Hallett
London & Bethesda, 2002

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