Mind and mental activity are very abstract scientifically concepts. Nevertheless, you immediately get some clarity when you think about determinants of human behavior. There is no doubt that human behavior is largely dependent on material (physical, chemical), organic and social stimulation. But behavior can be preceded by complex judgment, thinking and decision-making. Such processes are important examples of mental activity.

A short overview of the literature about the study of the mind and behavior, which is presented in the first chapter of this book, shows that the past and current research have led to extensive new knowledge about various forms of mental activity, its relation to behavior and the underlying neural systems.

But how is it possible to write a very short book about the mind and mental activity that extends existing knowledge considerably? The answer is manifold.

Most important is the existence of detailed knowledge about scientific concepts that relate to the central states and processes of mental activity. These findings come from researchers from around the world, including my own studies about the process of judgment. Examples of the findings include knowledge about cortical and emotional/affective arousal, perceptual learning (the most influential form of non-verbal and verbal learning), memory structures and systems, perceptual judgment (e.g., “The flowers in the vase are roses”), decision-making, and functions of the prefrontal cortex.

Essential was also the discovery of close relations between research results of different areas. An important example is the relation between concepts that are simple linguistic units (especially words) with perceptual and verbal meanings and memory structures that exist in the brain. Another example is perceptual judgment. The correct identification of a rose, for example, is not possible without concepts/memory structures that contain features that are distinctive to the features of other flowers.

The entire research process is comparable to the looking for a recipe for a tasty food due to certain ingredients. The ingredients are the concrete findings about interesting scientific concepts. The goal of the research process, however, is not a
tasty food but new concrete knowledge about the mind, mental activity and mental disorders.

I am grateful to Herbert Bauer and Erich Vanecsk (Vienna), Gerold Mikula, Erich Raab, and Günter Schulter (Graz) for distant past discussions on important issues and topics that are covered in this book. I gratefully acknowledge Fred Levin (Chicago) for very helpful discussions, feedback and suggestions during the first phase of research (2007–2010), which has been particularly difficult.

I also would like to thank Sharon Panulla and Sylvana Ruggirello from Springer Science+Business Media (New York) as well as Nishanthi Venkatesan from Scientific Publishing Services (Chennai) for their kind and professional support throughout the publishing process.

Lopud/Vienna  

Otto Buxbaum
Key Insights into Basic Mechanisms of Mental Activity
Buxbaum, O.
2016, X, 104 p. 13 illus., 1 illus. in color., Hardcover
ISBN: 978-3-319-29466-7