CHAPTER

1

Introduction

"`PSYCHOACOUSTICS`" is a computer software package designed for running experiments in psychoacoustics. It is intended to work on any standard PC equipped with a good quality sound card. The software should be useful for students of psychoacoustics and related disciplines, such as audiology and audio engineering, who want to try psychoacoustic experiments for themselves. The software should also be useful for researchers who want to run experiments without the need to spend time writing computer software to generate the stimuli, run the experiment, and gather the data.

It is assumed that the user has some basic familiarity with sound and psychoacoustics. Background material relevant to the experiments included in the software package can be found in: Moore, B. C. J. (2012). *An Introduction to the Psychology of Hearing*, 6th Ed. Leiden, The Netherlands: Brill; Plack, C. J. (2018). *The Sense of Hearing*, 3rd Ed. London: Routledge.

This guide to the use of the software consists of 21 short chapters. Chapter 2 describes how to install the software and how to run a calibration procedure so that stimuli with the correct levels can be generated. Each of the remaining chapters describes a group of related psychoacoustic experiments, explains the stimulus and procedural parameters that must be specified, and gives some background to the experiments, together with some key references. The software referred to in each chapter is described as a "module". Chapters 3–21 are intended to be reasonably self-contained; each chapter can be largely understood without reference to the other chapters. For this reason, there is quite a lot of repetition across chapters. An exception to chapters being self-contained is that Chapter 6 describes a method for analysing the results obtained using the module described in Chapter 5. Also, to perform the experiment described in Chapter 17, you would usually first have to run the experiments described in Chapters 15 and 16.

We want the software to be used by as many people as possible, so it is being made available free of charge, despite the fact that many hundreds of hours have been spent developing it and writing this guide. If you would like to make a donation towards the development costs, including future updates, please send an email to: *oleksek@amu.edu.pl* indicating how much you wish to donate. You will then receive a Paypal request for this amount.

The software can be downloaded from: <http://ia.amu.edu.pl/psycho-acoustics> or <https://www.psychol.cam.ac.uk/hearing>.