PsychoPysics: a suite of tools for teaching Psychophysics using PsychoPy

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Teaching psychophysics is challenging, because while hands-on experience is the best teacher, easy-to-use platforms for developing and running experiments are not readily available. To address this problem, (Ferwerda (2015) J. Vision, 15(12):476), introduced the FechDeck, a literal hands-on platform for teaching psychophysics based on a deck of playing cards. While the FechDeck provided direct experience with psychophysical methods, for good or ill, it did not introduce them in the computer-based milieu commonly used in practice. PsychoPy (Pierce (2007), J. Neuro. Meth., 162(1-2):8-13), is an open-source, multi-system, computer-based platform for experimental psychology, that facilitates experimentation with both graphical and code-based interfaces. The focus of this project, PsychoPysics, is a suite of PsychoPy experiments and related analysis tools for teaching computer-based psychophysics. The current suite includes PsychoPy experiments that implement standard threshold methods (adjustment, limits, constant stimuli), scaling methods (rating, pair comparison, magnitude estimation), and concepts in signal detection theory. The data produced by the experiments (stored in .csv files) can be analyzed and visualized using the provided Excel spreadsheets, or processed by other tools. Students with or without coding experience, can explore the PsychoPy/PsychoPysics environment, run the experiments and analyze the data, modify the experiments to develop their own, and gain further understanding of the methods of psychophysics.