



Figure S1. Example psychometric functions in the qVA method. (a) The single-prototype  $d'$  psychometric function for an observer with VA threshold = 0.25 logMAR and VA range = 0.3 logMAR. (b) The single-prototype psychometric function of percent correct, i.e., the probability of correct identification of a single optotype as a function of the optotype size in a 10-AFC task, for the observer in (a). Stimulus selections and responses for the observer in one qVA simulation are shown as colored dots, with different colors indicating different number of correctly identified optotypes. (c) The multi-prototype psychometric functions of the observer, i.e., the probabilities of correctly identifying 0, 1, 2, or 3 of the three same-size optotypes presented in each line as functions of optotype size.