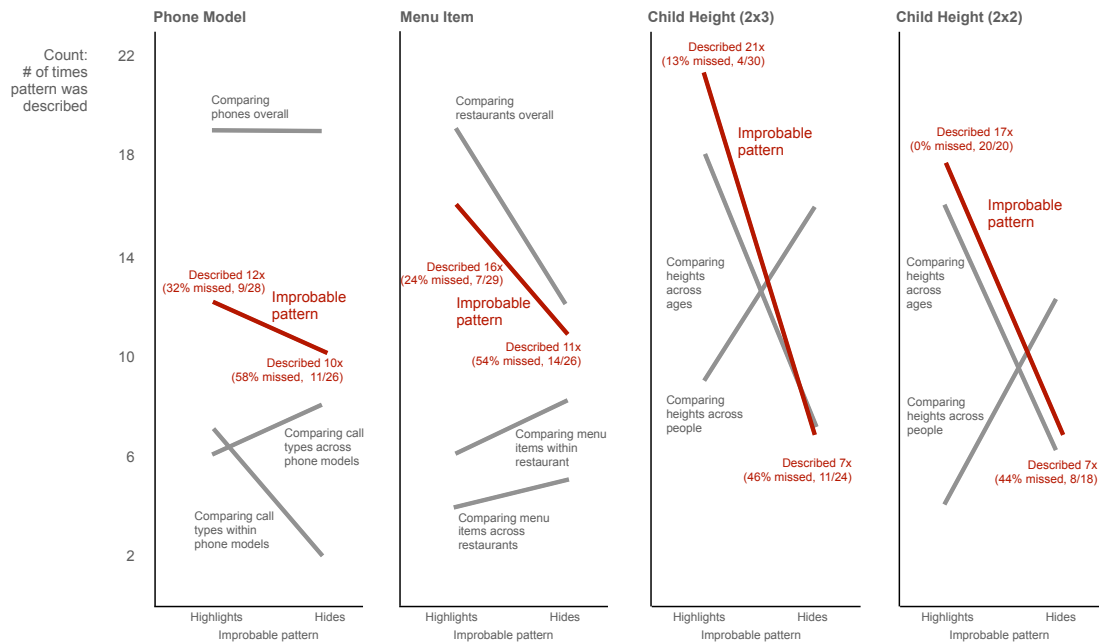


190 Supplementary figure (Fig. S1) :



191 Along with a binary response to whether they saw the improbable relationship
 192 (shown in Fig. 2), participants typed descriptions of what they saw in the plot. We
 193 conducted an exploratory analysis of these descriptions by coding them as categories
 194 of comparisons for each combination of vignette and graph design. Note that, because
 195 participants were asked to describe multiple patterns, there are differences between
 196 the number of times a comparison is described and the number of times it is seen or
 197 missed in the binary responses. The left end of each line shows results from graphs
 198 with a spatial arrangement of values predicted to highlight that relationship, while
 199 the right end of each line shows an arrangement that should hide it.

200 While we do not conduct formal statistics on these post-hoc exploratory analyses,
 201 the slopes of the lines are consistent with the grouping effect that causes difference

202 in binary responses reported in the manuscript. For each red line, the direction
203 of the difference for the comparison coding (the slope of the lines) is the same as
204 the difference for the binary responses (lower noticing rates in the ‘hides’ condition)
205 — the spatial grouping designed to highlight or hide the improbably pattern had
206 a similar effect on rate of describing that pattern. The coded descriptions shown
207 in the grey lines also appear to have been influenced by the same spatial grouping
208 effect that highlighted or hid the improbably pattern, such that people are more
209 prone to make comparisons of nearby values, and less likely to compare values that
210 are spatially distant and have other values interleaved between them. The directions
211 of the differences are all congruent with that bias, except for the equal rates for
212 ‘Comparing phones overall’ in the ‘Phone Model’ condition and the ‘Comparing
213 menu items within restaurant’ in the ‘Menu Item’ condition.