**Supplementary figure**



**Figure 14 Qualitatively different relationships that look similar over a given data range**

The four relationships shown are fundamentally different: one is linear (top left), two are curvilinear but of very different form (top right and bottom left) and the other involves a threshold (bottom right). However, all four relationships look very similar indeed over the range between the dotted lines. If the data were only collected over this range of the x-variable, it would be almost impossible to distinguish between these relationships (and many others not shown). In practice in this situation, we would use Occam’s Razor and accept the linear relationship because this is the simplest explanation out of competing ones that account for the facts equally well, but if the true underlying relationship were not linear, we would be wrong. This highlights how dangerous it can be to extrapolate beyond the range of the data.