## No main effect of Factor I, no main effect of Factor 2 but an interaction

The difference Level I of factor I between levels I & 2 of Factor I at Level I of Factor 2 is different from the same difference at Levels 2 and 3 of Factor 2. This is a Level 2 of factor 1 crossover interaction as the polarity of the difference flips. Level I Level 2 Level 3

Level 1 Level 2 Level 3 of factor 2 of factor 2

## 2 x 2 Example

• Imagine the case where we're interested in the effect of positive vs. negative contexts on how quickly (in milliseconds) people respond to positive vs negative sentences. We think there might be a priming effect (i.e., people are quicker to respond to positive sentences after positive contexts vs. after negative contexts - and vice versa).

 So, we have two factors, each with two levels. This is what's known as a full factorial design where every subject participates in every condition.