Interactions 10/2

Two-Way ANOVA

Three things to learn:

Independent effects of factor of A

Independent effects of factor B

The joint effect of both A and B

Logic of Two Way ANOVA

If the ANOVA table isn’t additive then there is an interaction

If you plot it and the lines are not parallel then there is an interaction

If the lines are going away from each other: ordinal

If the lines cross: disordinal (in this case you don’t have any main effects)

“Simple Effects”: what’s the effect if we control for the other things (basically doing a one way ANOVA for a single factor)

Slide: “Various combination of significant and nonsignificant effects” answers left to right

1. No effects
2. No main effects, interaction between A and B
3. Main effect of B, no effect of A, no interaction
4. Main effect of B, no effect of A, interaction (ordinal)
5. No main effect of B, Main effect of A, no interaction
6. No main effect of B (or maybe slight effect), Main effect of A, Interaction
7. Main effect of B, main effect of A, no interaction
8. Main effect of B, Main effect of A, interaction

2x3 Interaction example

main effect of difficulty level

main effect of reward

ordinal interaction

|  |  |  |  |
| --- | --- | --- | --- |
|  | Cat calling | Freaky Friday: they have to be a woman | Workplace harassment |
| Slap across face | 0.5 | 2 | 3 |
| Electrocute balls | 2 | 4 | 6.5 |
| castration | 7 | 7 | 7 |