**Treatment Design:** Target Panel gets model A and Null Panels get model B

3!⋅2!=63!⋅2!=6 panel comboinations of curvature ×2×2 levels of variability =12=12

2!⋅1!=22!⋅1!=2 panel combinations of variability ×3×3 levels of curvature =6=6

=18=18 test parameter combinations

3×2=63×2=6 rorschach parameter combinations

=24=24 parameter combinations

×2×2 lineup datasets per parameter combination == **48 datasets**

×2×2 scales (log & linear) == **96 different lineups.**

**Experimental Design:** Split plot with an IBD for the whole plot factor

99 test parameter combinations per participant ×2×2 scales =18=18 test lineups

11 rorschach parameter combination per participant ×2×2 scales =2=2 rorschach lineups

== **20 lineup plots per participant**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Test****Param** **Combo 1** | **Test****Param** **Combo 2** | $$…$$ | **Test** **Param** **Combo 17** | **Test** **Param** **Combo 18** |
|  | **Dataset 1** | **Dataset 2** | **Dataset 3** | **Dataset 4** | $$…$$ | **Dataset 33** | **Dataset 34** | **Dataset 35** | **Dataset 36** |
| **Participant 1** | Linear | Log | Linear | Log | Linear | Log | Linear | Log |  | Linear | Log | Linear | Log | Linear | Log | Linear | Log |
| **Participant 2** | Linear | Log | Linear | Log | Linear | Log | Linear | Log |  | Linear | Log | Linear | Log | Linear | Log | Linear | Log |
| $$\vdots $$ |  |  |  |  |  |  |  |  |  |
| **Participant n** | Linear | Log | Linear | Log | Linear | Log | Linear | Log |  | Linear | Log | Linear | Log | Linear | Log | Linear | Log |

|  |  |
| --- | --- |
| Source of Variation | DF = (9 x 2 x n) - 1 |
| Participant – *random row blocking*Dataset – *random column blocking*Param\_Combo - target\_curvature x target\_variability x null\_curvature x null\_variabilityParam\_Combo x Participant x Dataset – *random error 1* | (n – 1)(36 – 1) = 35(18 – 1) = 17(18 – 1)(n – 1)(9 – 1)??? |
| Scale – log / linearScale x Param\_ComboScale x Param\_Combo x Participant x Dataset – *random error 2 - overdispersion?* | (2 – 1) = 1(2 – 1)(18 – 1) = 17 |

Response is binary (correct / incorrect) for each plot $\~Bin(1,p\_{ijklm})$

Or… do we aggregate across dataset to say 7/13 people got this correct?

If we knock out the within curvature treatments and assign a variability level to each participant:

Within Variability: 6 treatment combos. $\rightarrow 12$ test param combos $×$ 2 reps = 24 datasets?

* Easy/Medium
* Easy/Hard
* Medium/Easy
* Medium/Hard
* Hard/Easy
* Hard/Medium

Each participant would get either low or high variability and all 6 treatment combos on both the log/linear scale (12 test lineups + 2 rorschach lineups)?

How does this affect the design?

|  |  |  |
| --- | --- | --- |
|  | **Low Variability** | **High Variability** |
|  | **Easy/Medium** | $$…$$ | **Hard/Medium** | **Easy/Medium** | $$…$$ |
|  | **Dataset 1** | **Dataset 2** | $$…$$ | **Dataset 11** | **Dataset 12** | **Dataset 13** | **Dataset 14** | $$…$$ |
| **Participant 1** | Linear | Log | Liner | Log | $$…$$ | Linear | Log | Linear | Log | Linear | Log | Linear | Log | $$…$$ |
| **Participant 2** | Linear | Log | Liner | Log | $$…$$ | Linear | Log | Linear | Log | Linear | Log | Linear | Log | $$…$$ |
| $$\vdots $$ | Linear | Log | Liner | Log | $$…$$ | Linear | Log | Linear | Log | Linear | Log | Linear | Log | $$…$$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Participant n** | Linear | Log | Liner | Log | $$…$$ | Linear | Log | Linear | Log | Linear | Log | Linear | Log | $$…$$ |

|  |  |
| --- | --- |
| Source of Variation | DF = (9 x 2 x n) - 1 |
| Participant – *random row blocking*Dataset *– random column blocking???*VariabilityVariability x Participant x Dataset??? – *random error 1* | (n – 1)(24 – 1) = 23(2 – 1) = 1 |
| Curvature Combo – *Target Curvature x Null Curvature*Curvature Combo x VariabilityCurvature Combo x Variability x Participant x Dataset *– random error 2* |  |
| ScaleScale x VariabilityScale x Curvature ComboScale x Variability x Curvature ComboScale x Variability x Curvature Combo x Participant x Dataset *– random error 3 (overdispersion?)* |  |