**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 |
|  |  | |  | |  | |  | |  |  | |  | |  | |  | |
| **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\_variability  Param\_Combo x Participant x Dataset – *random error 1* | (n – 1)  (36 – 1) = 35  (18 – 1) = 17  (18 – 1)(n – 1)(9 – 1)??? |
| Scale – log / linear  Scale x Param\_Combo  Scale 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

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. 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 |  |
|  | 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???*  Variability  Variability 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 Variability  Curvature Combo x Variability x Participant x Dataset *– random error 2* |  |
| Scale  Scale x Variability  Scale x Curvature Combo  Scale x Variability x Curvature Combo  Scale x Variability x Curvature Combo x Participant x Dataset *– random error 3 (overdispersion?)* |  |