‏09/12/2021

Mixed linear model for each age-group separately

Where the participant is defined as a random factor  
and only three Cue-Types defined by their size:  
**Torso (large) / Head (middle) / Face (small)**

Age group = **OLD**

|  |  |
| --- | --- |
| Response Variable | Log (#cues + 1) |

| Class Level Information | | |
| --- | --- | --- |
| Class | Levels | Values |
| Level | 3 | Low Middle High |
| Cue Type | 3 | Head Torso Face |

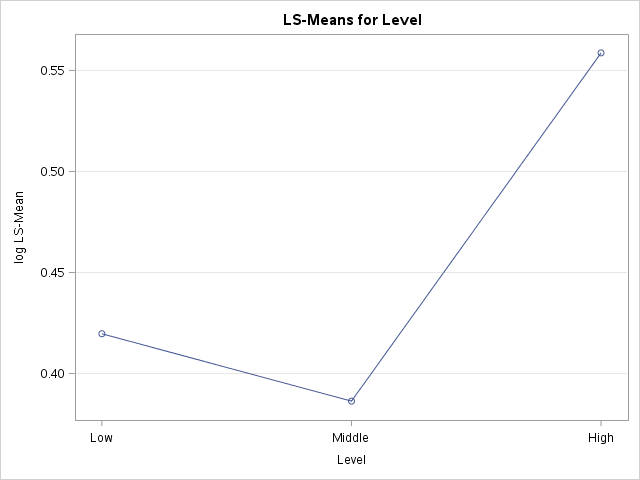
|  |  |
| --- | --- |
| Number of Observations | 549 |

| Covariance Parameter Estimates | | | |
| --- | --- | --- | --- |
| Cov Parm | Subject | Estimate | Standard Error |
| Intercept | Participant | 0.01264 | 0.009958 |
| Residual |  | 0.1441 | 0.008802 |

| Type III Tests of Fixed Effects | | | | |
| --- | --- | --- | --- | --- |
| Effect | Num DF | Den DF | F Value | Pr > F |
| Level | 2 | 536 | 4.86 | 0.0081 |
| Cue-Type | 2 | 536 | 17.03 | <.0001 |
| Level\*Cue-Type | 4 | 536 | 0.31 | 0.8702 |

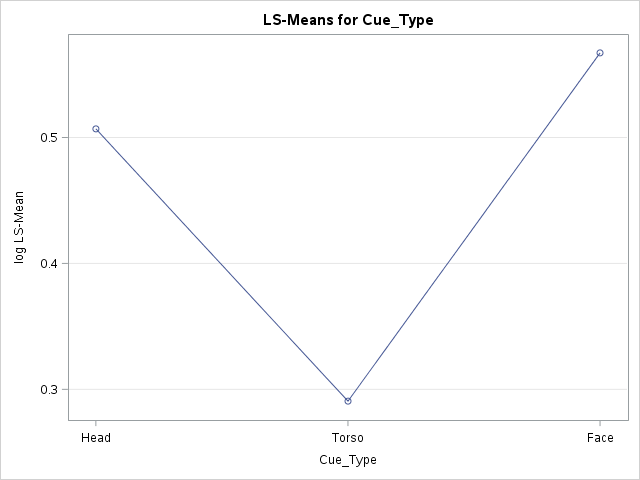
**Solutions for Fixed Effects**

| Effect |  |  | Estimate | Standard Error | DF | t Value | Pr > |t| |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Intercept |  |  | 0.6470 | 0.1007 | 4 | 6.42 | 0.0030 |
| Level | Low vs. High |  | -0.0917 | 0.0986 | 536 | -0.93 | 0.3529 |
| Middle vs. High |  | -0.1478 | 0.0956 | 536 | -1.55 | 0.1227 |
| Cue Type | Head vs. Face |  | -0.0612 | 0.1232 | 536 | -0.50 | 0.6194 |
| Torso vs. Face |  | -0.2037 | 0.1232 | 536 | -1.65 | 0.0987 |
| Level\*Cue-Type | Head vs. Face | Low vs. High | -0.0081 | 0.1389 | 536 | -0.06 | 0.9535 |
| Torso vs. Face | Low vs. High | -0.1339 | 0.1389 | 536 | -0.96 | 0.3355 |
| Level\*Cue-Type | Head vs. Face | Middle vs. High | 0.01085 | 0.1350 | 536 | 0.08 | 0.9360 |
| Torso vs. Face | Middle vs. High | -0.0845 | 0.1350 | 536 | -0.63 | 0.5316 |



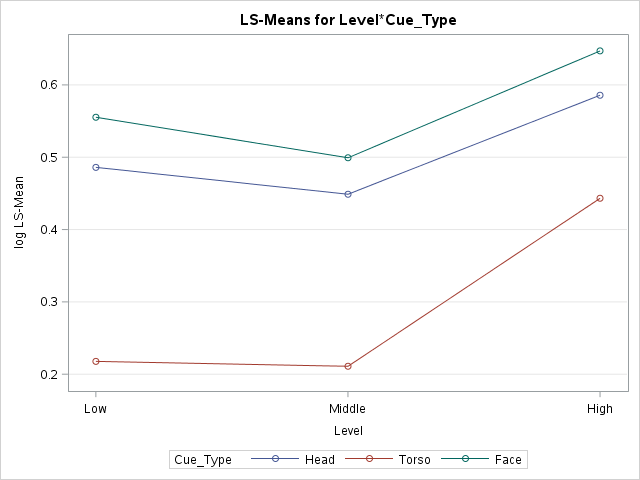
| **Differences of Level Least Squares Means** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Level 1 | Level 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| Low | Middle | 0.0334 | 0.03556 | 536 | 0.94 | 0.3488 | 0.6166 |
| Low | High | -0.1390 | 0.05739 | 536 | -2.42 | 0.0158 | 0.0416 |
| Middle | High | -0.1723 | 0.05532 | 536 | -3.12 | 0.0019 | 0.0055 |

(\*) Adjustment for Multiple Comparisons: Tukey-Kramer



| **Differences of Cue Type Least Squares Means** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cue Type 1 | Cue Type 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| Head | Torso | 0.2162 | 0.04984 | 536 | 4.34 | <.0001 | <.0001 |
| Head | Face | -0.0603 | 0.04984 | 536 | -1.21 | 0.2268 | 0.4478 |
| Torso | Face | -0.2765 | 0.04984 | 536 | -5.55 | <.0001 | <.0001 |

(\*) Adjustment for Multiple Comparisons: Tukey-Kramer



| **Simple Effect Comparisons of Level\*Cue-Type Least Squares Means By Cue-Type** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cue Type | Level 1 | Level 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| Head | Low | Middle | 0.0372 | 0.06049 | 536 | 0.61 | 0.5393 | 0.8124 |
|  | Low | High | -0.0998 | 0.09860 | 536 | -1.01 | 0.3120 | 0.5697 |
|  | Middle | High | -0.1369 | 0.09560 | 536 | -1.43 | 0.1526 | 0.3250 |
| Torso | Low | Middle | 0.0068 | 0.06049 | 536 | 0.11 | 0.9108 | 0.9931 |
|  | Low | High | -0.2255 | 0.09860 | 536 | -2.29 | 0.0226 | 0.0584 |
|  | Middle | High | -0.2323 | 0.09560 | 536 | -2.43 | 0.0154 | 0.0408 |
| Face | Low | Middle | 0.0561 | 0.06049 | 536 | 0.93 | 0.3540 | 0.6231 |
|  | Low | High | -0.0917 | 0.09860 | 536 | -0.93 | 0.3529 | 0.6217 |
|  | Middle | High | -0.1478 | 0.09560 | 536 | -1.55 | 0.1227 | 0.2704 |

Age-group = **YOUNG**

|  |  |
| --- | --- |
| Response Variable | Log (#cues + 1) |

| Class Level Information | | |
| --- | --- | --- |
| Class | Levels | Values |
| Level | 3 | Low Middle High |
| Cue Type | 3 | Head Torso Face |

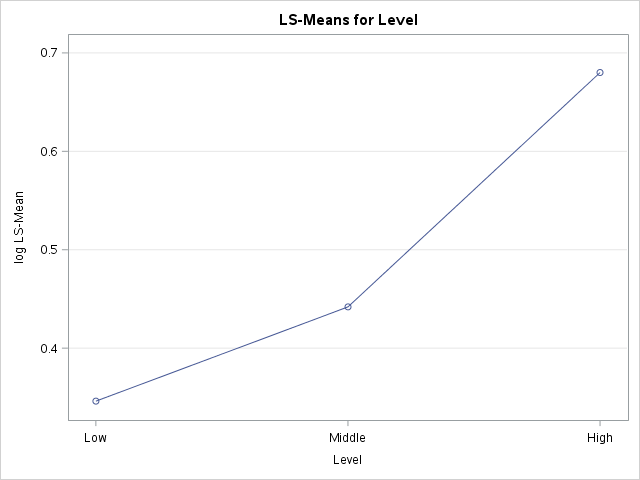
|  |  |
| --- | --- |
| Number of Observations | 612 |

| Covariance Parameter Estimates | | | |
| --- | --- | --- | --- |
| Cov Parm | Subject | Estimate | Standard Error |
| Intercept | Participant | 0.0106 | 0.008671 |
| Residual |  | 0.1126 | 0.006506 |

| Type III Tests of Fixed Effects | | | | |
| --- | --- | --- | --- | --- |
| Effect | Num DF | Den DF | F Value | Pr > F |
| Level | 2 | 599 | 21.30 | <.0001 |
| Cue-Type | 2 | 599 | 59.30 | <.0001 |
| Level\*Cue-Type | 4 | 599 | 2.54 | 0.0390 |

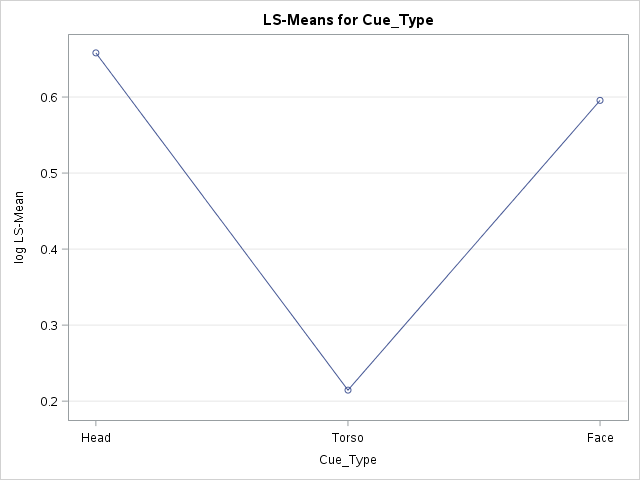
**Solutions for Fixed Effects**

| Effect |  |  | Estimate | Standard Error | DF | t Value | Pr > |t| |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Intercept |  |  | 0.6834 | 0.0916 | 4 | 7.46 | 0.0017 |
| Level | Low vs. High |  | -0.2158 | 0.0884 | 599 | -2.44 | 0.0150 |
| Middle vs. High |  | -0.0478 | 0.0855 | 599 | -0.56 | 0.5761 |
| Cue Type | Head vs. Face |  | 0.1730 | 0.1118 | 599 | 1.55 | 0.1225 |
| Torso vs. Face |  | -0.1831 | 0.1118 | 599 | -1.64 | 0.1021 |
| Level\*Cue-Type | Head vs. Face | Low vs. High | -0.1038 | 0.1242 | 599 | -0.84 | 0.4035 |
| Torso vs. Face | Low vs. High | -0.2505 | 0.1242 | 599 | -2.02 | 0.0442 |
| Level\*Cue-Type | Head vs. Face | Middle vs. High | -0.2276 | 0.1207 | 599 | -1.89 | 0.0599 |
| Torso vs. Face | Middle vs. High | -0.3433 | 0.1207 | 599 | -2.84 | 0.0046 |



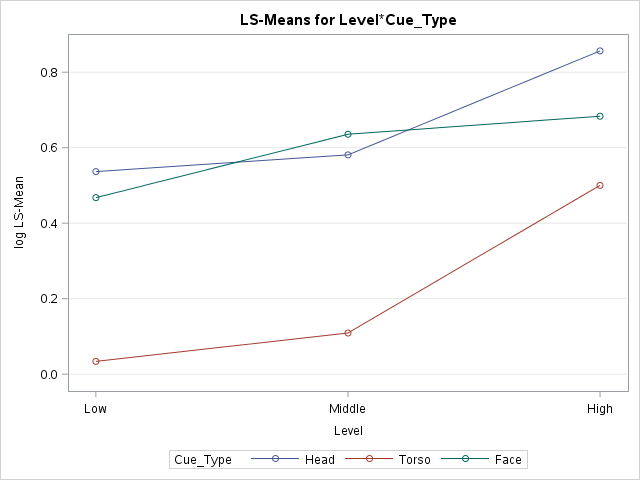
| **Differences of Level Least Squares Means** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Level 1 | Level 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| Low | Middle | -0.0958 | 0.02964 | 599 | -3.23 | 0.0013 | 0.0037 |
| Low | High | -0.3339 | 0.05174 | 599 | -6.45 | <.0001 | <.0001 |
| Middle | High | -0.2381 | 0.04955 | 599 | -4.81 | <.0001 | <.0001 |

(\*) Adjustment for Multiple Comparisons: Tukey-Kramer



| **Differences of Cue Type Least Squares Means** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cue Type 1 | Cue Type 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| **Head** | **Torso** | 0.4435 | 0.04409 | 599 | 10.06 | <.0001 | <.0001 |
| **Head** | **Face** | 0.0625 | 0.04409 | 599 | 1.42 | 0.1568 | 0.3324 |
| **Torso** | **Face** | -0.3810 | 0.04409 | 599 | -8.64 | <.0001 | <.0001 |

(\*) Adjustment for Multiple Comparisons: Tukey-Kramer



| **Simple Effect Comparisons of Level\*Cue-Type Least Squares Means By Cue-Type** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cue Type | Level 1 | Level 2 | Difference Estimate | Standard Error | DF | t Value | Pr > |t| | Adjusted  P-value(\*) |
| Head | Low | Middle | -0.0442 | 0.05041 | 599 | -0.88 | 0.3810 | 0.6552 |
|  | Low | High | -0.3196 | 0.08844 | 599 | -3.61 | 0.0003 | 0.0010 |
|  | Middle | High | -0.2754 | 0.08551 | 599 | -3.22 | 0.0013 | 0.0039 |
| Torso | Low | Middle | -0.0752 | 0.05041 | 599 | -1.49 | 0.1365 | 0.2959 |
|  | Low | High | -0.4663 | 0.08844 | 599 | -5.27 | <.0001 | <.0001 |
|  | Middle | High | -0.3911 | 0.08551 | 599 | -4.57 | <.0001 | <.0001 |
| Face | Low | Middle | -0.1679 | 0.05041 | 599 | -3.33 | 0.0009 | 0.0026 |
|  | Low | High | -0.2158 | 0.08844 | 599 | -2.44 | 0.0150 | 0.0397 |
|  | Middle | High | -0.0478 | 0.08551 | 599 | -0.56 | 0.5761 | 0.8416 |