**Supplementary Materials**

|  |  |  |  |
| --- | --- | --- | --- |
| **Appendix A** | | | |
| Table S1. *Prompts used in SA Task* | | | |
| **Trial Number** | **Referent** | **Prompt** | **Data** |
| Training 1 |  | Put the ball in the basket |  |
| Training 2 |  | Put the candy in the basket |  |
| Training 3 |  | Put the fish in the pond |  |
| Training 4 |  | Put the dog on the towel |  |
| **Test Trials** | | | |
| 1 | 1 | Put the fish on the sponge on the plate |  |
| 2 | 1 | Put the frog on the napkin in the box |  |
| 3 | 2 | Put the donkey on the plate in the wagon |  |
| 4 | 2 | Put the bird in the bowl on the towel |  |
| 5 | 1 | Put the dog with the stick on the tray |  |
| 6 | 2 | Put the frog on the napkin in the box |  |
| 7 | 1 | Put the rabbit on the towel in the cage |  |
| 8 | 2 | Put the bird in the yellow mug on the napkin |  |
| 9 | 2 | Put the dog with the stick on the tray |  |
| 10 | 1 | Put the cat on the sponge in the truck |  |
| 11 | 1 | Put the bird in the bowl on the towel |  |
| 12 | 2 | Put the fish on the sponge on the plate |  |
| 13 | 1 | Put the lamb with the pink napkin in the tent |  |
| 14 | 2 | Put the lamb on the soap in the field |  |
| 15 | 1 | Put the lamb on the soap in the field |  |
| 16 | 2 | Put the lamb with the pink napkin in the tent |  |
| 17 | 1 | Put the donkey on the plate in the wagon |  |
| 18 | 2 | Put the rabbit on the small plate in the cage |  |
| 19 | 2 | Put the cat on the sponge in the truck |  |
| 20 | 1 | Put the bird in the yellow mug on the napkin |  |
| 21 | 1 | Put the fish with the blue towel in the pond |  |
| 22 | 2 | Put the sheep on the white saucer with the flag |  |
| 23 | 2 | Put the cat on the napkin in the basket |  |
| 24 | 1 | Put the cat on the napkin in the basket |  |
| 25 | 1 | Put the rabbit on the small plate in the cage |  |
| 26 | 2 | Put the fish with the blue towel in the pond |  |
| 27 | 2 | Put the rabbit on the towel in the cage |  |
| 28 | 1 | Put the sheep on the white saucer with the flag |  |

**Appendix B: Inhibitory Control Rasch Analysis**

TableS2. IC Dichotomous Rasch Model Item Calibration

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Task ID | Proportion Correct | Item Location | Item SE | Outfit MSE | Std. Outfit | Infit MSE | Std. Infit |
| DNS\_Score.1 | 0.81 | -1.69 | 0.32 | 1.11 | 0.61 | 1.01 | 0.13 |
| DNS\_Score.10 | 0.81 | -1.69 | 0.32 | 0.87 | -0.71 | 0.9 | -0.49 |
| DNS\_Score.11 | 0.81 | -1.69 | 0.32 | 0.91 | -0.46 | 0.9 | -0.5 |
| DNS\_Score.12 | 0.84 | -1.9 | 0.33 | 0.92 | -0.33 | 1.03 | 0.21 |
| DNS\_Score.13 | 0.84 | -1.9 | 0.33 | 1.23 | 1.02 | 0.99 | 0 |
| DNS\_Score.14 | 0.84 | -1.9 | 0.33 | 0.72 | -1.4 | 0.94 | -0.24 |
| DNS\_Score.15 | 0.79 | -1.5 | 0.3 | 0.86 | -0.84 | 0.86 | -0.83 |
| DNS\_Score.16 | 0.81 | -1.69 | 0.32 | 0.92 | -0.4 | 0.92 | -0.38 |
| DNS\_Score.17 | 0.8 | -1.59 | 0.31 | 1.38 | 1.97 | 1.22 | 1.19 |
| DNS\_Score.18 | 0.85 | -2.01 | 0.35 | 1.31 | 1.28 | 1.1 | 0.52 |
| DNS\_Score.19 | 0.8 | -1.59 | 0.31 | 1.2 | 1.05 | 1.07 | 0.46 |
| DNS\_Score.2 | 0.84 | -1.9 | 0.33 | 1.05 | 0.29 | 0.94 | -0.23 |
| DNS\_Score.20 | 0.8 | -1.59 | 0.31 | 0.9 | -0.52 | 0.99 | -0.02 |
| DNS\_Score.21 | 0.72 | -1.08 | 0.28 | 1.04 | 0.31 | 1.04 | 0.33 |
| DNS\_Score.22 | 0.75 | -1.24 | 0.28 | 0.9 | -0.67 | 0.89 | -0.75 |
| DNS\_Score.23 | 0.85 | -2.01 | 0.35 | 1.07 | 0.35 | 0.97 | -0.05 |
| DNS\_Score.24 | 0.84 | -1.9 | 0.33 | 1.24 | 1.11 | 1.04 | 0.26 |
| DNS\_Score.25 | 0.83 | -1.79 | 0.32 | 1.03 | 0.2 | 1.01 | 0.12 |
| DNS\_Score.26 | 0.87 | -2.14 | 0.36 | 1.74 | 2.55 | 1.07 | 0.38 |
| DNS\_Score.27 | 0.87 | -2.14 | 0.36 | 0.85 | -0.59 | 0.93 | -0.2 |
| DNS\_Score.28 | 0.8 | -1.59 | 0.31 | 1.12 | 0.67 | 1.06 | 0.4 |
| DNS\_Score.29 | 0.88 | -2.27 | 0.37 | 0.86 | -0.51 | 1.01 | 0.11 |
| DNS\_Score.3 | 0.88 | -2.27 | 0.37 | 1.03 | 0.18 | 0.94 | -0.16 |
| DNS\_Score.30 | 0.81 | -1.69 | 0.32 | 0.97 | -0.1 | 0.88 | -0.6 |
| DNS\_Score.31 | 0.88 | -2.27 | 0.37 | 1.38 | 1.37 | 1 | 0.07 |
| DNS\_Score.4 | 0.77 | -1.41 | 0.29 | 0.86 | -0.87 | 0.95 | -0.24 |
| DNS\_Score.5 | 0.81 | -1.69 | 0.32 | 1.48 | 2.25 | 1.12 | 0.65 |
| DNS\_Score.6 | 0.84 | -1.9 | 0.33 | 0.91 | -0.4 | 0.96 | -0.14 |
| DNS\_Score.7 | 0.83 | -1.79 | 0.32 | 0.89 | -0.54 | 0.95 | -0.2 |
| DNS\_Score.8 | 0.75 | -1.24 | 0.28 | 1.19 | 1.22 | 1.03 | 0.28 |
| DNS\_Score.9 | 0.84 | -1.9 | 0.33 | 0.99 | 0 | 0.96 | -0.15 |
| Flanker\_Score.1.1 | 0.68 | -0.86 | 0.27 | 0.96 | -0.37 | 0.96 | -0.3 |
| Flanker\_Score.1.10 | 0.73 | -1.16 | 0.28 | 1.02 | 0.18 | 1.04 | 0.36 |
| Flanker\_Score.1.11 | 0.59 | -0.39 | 0.25 | 0.99 | -0.14 | 1 | -0.02 |
| Flanker\_Score.1.12 | 0.64 | -0.66 | 0.26 | 1 | 0.05 | 1 | 0.01 |
| Flanker\_Score.1.13 | 0.67 | -0.79 | 0.26 | 0.91 | -0.79 | 0.92 | -0.74 |
| Flanker\_Score.1.14 | 0.67 | -0.79 | 0.26 | 1.03 | 0.26 | 1.03 | 0.33 |
| Flanker\_Score.1.15 | 0.64 | -0.66 | 0.26 | 1.1 | 0.98 | 1.09 | 0.86 |
| Flanker\_Score.1.16 | 0.68 | -0.86 | 0.27 | 0.86 | -1.22 | 0.91 | -0.77 |
| Flanker\_Score.1.17 | 0.69 | -0.93 | 0.27 | 0.88 | -1.02 | 0.89 | -0.93 |
| Flanker\_Score.1.18 | 0.81 | -1.69 | 0.32 | 0.93 | -0.34 | 1 | 0.07 |
| Flanker\_Score.1.19 | 0.67 | -0.79 | 0.26 | 0.88 | -1.07 | 0.9 | -0.93 |
| Flanker\_Score.1.2 | 0.71 | -1.01 | 0.27 | 0.96 | -0.28 | 0.96 | -0.26 |
| Flanker\_Score.1.20 | 0.64 | -0.66 | 0.26 | 1.05 | 0.47 | 1.03 | 0.3 |
| Flanker\_Score.1.3 | 0.68 | -0.86 | 0.27 | 1.1 | 0.83 | 1.05 | 0.46 |
| Flanker\_Score.1.4 | 0.67 | -0.79 | 0.26 | 0.9 | -0.89 | 0.93 | -0.61 |
| Flanker\_Score.1.5 | 0.76 | -1.32 | 0.29 | 1 | 0.04 | 1.05 | 0.34 |
| Flanker\_Score.1.6 | 0.69 | -0.93 | 0.27 | 1.1 | 0.8 | 1.05 | 0.4 |
| Flanker\_Score.1.7 | 0.8 | -1.59 | 0.31 | 1.03 | 0.2 | 1.16 | 0.89 |
| Flanker\_Score.1.8 | 0.76 | -1.32 | 0.29 | 1.01 | 0.09 | 0.99 | -0.01 |
| Flanker\_Score.1.9 | 0.79 | -1.5 | 0.3 | 1.02 | 0.17 | 1.06 | 0.4 |

TableS3. IC Dichotomous Rasch Model Person Calibration

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Person ID |  | Proportion Correct | Person Location | Person SE | Outfit MSE | Std. Outfit | Infit MSE | Std. Infit |
| 1 |  | 0.84 | 0.26 | 0.39 | 0.98 | 0.05 | 0.98 | -0.02 |
| 2 |  | 0.88 | 0.58 | 0.43 | 1.07 | 0.3 | 0.97 | 0.02 |
| 3 |  | 0.9 | 0.78 | 0.46 | 1.11 | 0.39 | 0.98 | 0.07 |
| 4 |  | 0.9 | 0.78 | 0.46 | 0.76 | -0.52 | 0.91 | -0.15 |
| 5 |  | 0.92 | 1 | 0.5 | 1.17 | 0.5 | 0.94 | -0.02 |
| 6 |  | 0.59 | -1.09 | 0.29 | 0.9 | -1.12 | 0.9 | -1.22 |
| 7 |  | 0.84 | 0.26 | 0.39 | 0.9 | -0.26 | 0.97 | -0.06 |
| 8 |  | 0.94 | 1.28 | 0.56 | 1.01 | 0.2 | 0.91 | -0.05 |
| 9 |  | 0.88 | 0.58 | 0.43 | 1.12 | 0.44 | 1 | 0.11 |
| 10 |  | 0.84 | 0.26 | 0.39 | 1.16 | 0.6 | 1.05 | 0.28 |
| 11 |  | 0.92 | 1 | 0.5 | 1.2 | 0.55 | 0.99 | 0.12 |
| 12 |  | 0.84 | 0.26 | 0.39 | 0.94 | -0.09 | 0.94 | -0.17 |
| 13 |  | 0.92 | 1 | 0.5 | 0.89 | -0.08 | 0.9 | -0.13 |
| 14 |  | 0.65 | -0.83 | 0.3 | 0.95 | -0.38 | 0.96 | -0.37 |
| 15 |  | 0.86 | 0.41 | 0.41 | 0.59 | -1.36 | 0.81 | -0.64 |
| 16 |  | 0.71 | -0.55 | 0.31 | 1.2 | 1.25 | 1.16 | 1.17 |
| 17 |  | 0.8 | -0.01 | 0.36 | 1.31 | 1.24 | 1.13 | 0.68 |
| 18 |  | 0.76 | -0.24 | 0.34 | 0.9 | -0.43 | 0.94 | -0.28 |
| 19 |  | 0.82 | 0.12 | 0.37 | 1.04 | 0.25 | 1.01 | 0.11 |
| 20 |  | 0.78 | -0.13 | 0.35 | 0.74 | -1.23 | 0.84 | -0.83 |
| 21 |  | 0.96 | 1.64 | 0.66 | 0.86 | 0.01 | 0.86 | -0.05 |
| 22 |  | 0.92 | 1 | 0.5 | 0.73 | -0.47 | 0.9 | -0.13 |
| 23 |  | 0.96 | 1.64 | 0.66 | 0.86 | 0 | 0.86 | -0.07 |
| 24 |  | 0.9 | 0.78 | 0.46 | 0.69 | -0.71 | 0.87 | -0.27 |
| 25 |  | 0.75 | -0.35 | 0.33 | 1.13 | 0.72 | 1.12 | 0.77 |
| 26 |  | 0.8 | -0.01 | 0.36 | 1.07 | 0.36 | 1.06 | 0.36 |
| 27 |  | 0.9 | 0.78 | 0.46 | 1.19 | 0.58 | 1.02 | 0.16 |
| 28 |  | 0.53 | -1.34 | 0.29 | 0.94 | -0.75 | 0.94 | -0.8 |
| 29 |  | 0.92 | 1 | 0.5 | 1.26 | 0.66 | 0.99 | 0.11 |
| 30 |  | 0.8 | -0.01 | 0.36 | 1.03 | 0.18 | 1.04 | 0.27 |
| 31 |  | 0.78 | -0.13 | 0.35 | 0.89 | -0.43 | 0.93 | -0.29 |
| 32 |  | 0.9 | 0.78 | 0.46 | 1.17 | 0.53 | 0.99 | 0.08 |
| 33 |  | 0.9 | 0.78 | 0.46 | 0.58 | -1.07 | 0.83 | -0.41 |
| 34 |  | 0.76 | -0.24 | 0.34 | 0.85 | -0.68 | 0.92 | -0.41 |
| 35 |  | 0.88 | 0.58 | 0.43 | 1.25 | 0.75 | 1.01 | 0.14 |
| 36 |  | 0.82 | 0.12 | 0.37 | 0.91 | -0.24 | 0.93 | -0.27 |
| 37 |  | 0.65 | -0.83 | 0.3 | 0.89 | -0.95 | 0.91 | -0.9 |
| 38 |  | 0.73 | -0.46 | 0.32 | 0.94 | -0.28 | 0.95 | -0.3 |
| 39 |  | 0.75 | -0.35 | 0.33 | 0.95 | -0.19 | 0.98 | -0.06 |
| 40 |  | 0.71 | -0.55 | 0.31 | 0.84 | -1.07 | 0.87 | -1 |
| 41 |  | 0.65 | -0.83 | 0.3 | 0.96 | -0.32 | 0.98 | -0.11 |
| 42 |  | 0.69 | -0.65 | 0.31 | 1.27 | 1.79 | 1.22 | 1.74 |
| 43 |  | 0.86 | 0.41 | 0.41 | 1.16 | 0.57 | 1.03 | 0.21 |
| 44 |  | 0.76 | -0.24 | 0.34 | 0.74 | -1.33 | 0.85 | -0.88 |
| 45 |  | 0.88 | 0.58 | 0.43 | 0.68 | -0.88 | 0.87 | -0.32 |
| 46 |  | 0.22 | -2.79 | 0.34 | 0.89 | -0.43 | 0.97 | -0.12 |
| 47 |  | 0.76 | -0.24 | 0.34 | 1.34 | 1.58 | 1.14 | 0.84 |
| 48 |  | 0.94 | 1.28 | 0.56 | 0.88 | -0.05 | 0.9 | -0.07 |
| 49 |  | 0.78 | -0.13 | 0.35 | 1.09 | 0.46 | 1.09 | 0.55 |
| 50 |  | 0.78 | -0.13 | 0.35 | 0.88 | -0.51 | 0.94 | -0.25 |
| 51 |  | 0.76 | -0.24 | 0.34 | 1.24 | 1.17 | 1.11 | 0.69 |
| 52 |  | 0.61 | -1.01 | 0.29 | 0.82 | -1.99 | 0.83 | -2 |
| 53 |  | 0.73 | -0.46 | 0.32 | 1.11 | 0.68 | 1.06 | 0.48 |
| 54 |  | 0.73 | -0.46 | 0.32 | 1.05 | 0.36 | 1.07 | 0.52 |
| 55 |  | 0.57 | -1.17 | 0.29 | 0.89 | -1.3 | 0.9 | -1.37 |
| 56 |  | 0.35 | -2.09 | 0.3 | 1.09 | 0.77 | 1.06 | 0.61 |
| 57 |  | 0.41 | -1.83 | 0.29 | 0.87 | -1.52 | 0.89 | -1.5 |
| 58 |  | 0.94 | 1.28 | 0.56 | 0.96 | 0.12 | 0.91 | -0.03 |
| 59 |  | 0.67 | -0.74 | 0.3 | 0.93 | -0.47 | 0.93 | -0.62 |
| 60 |  | 0.9 | 0.78 | 0.46 | 1.27 | 0.75 | 1.02 | 0.18 |
| 61 |  | 0.78 | -0.13 | 0.35 | 0.83 | -0.71 | 0.86 | -0.72 |
| 62 |  | 0.65 | -0.83 | 0.3 | 0.99 | -0.01 | 1.01 | 0.11 |
| 63 |  | 0.69 | -0.65 | 0.31 | 0.8 | -1.44 | 0.82 | -1.5 |
| 64 |  | 0.59 | -1.09 | 0.29 | 0.99 | -0.11 | 1 | 0.01 |
| 65 |  | 0.8 | -0.01 | 0.36 | 0.88 | -0.42 | 0.91 | -0.37 |
| 66 |  | 0.57 | -1.17 | 0.29 | 0.89 | -1.34 | 0.9 | -1.3 |
| 67 |  | 0.31 | -2.27 | 0.31 | 1.43 | 2.67 | 1.27 | 2.14 |
| 68 |  | 0.86 | 0.41 | 0.41 | 0.69 | -0.96 | 0.85 | -0.5 |
| 69 |  | 0.86 | 0.41 | 0.41 | 1.02 | 0.17 | 0.98 | 0.01 |
| 70 |  | 0.94 | 1.28 | 0.56 | 1.09 | 0.34 | 0.93 | 0.01 |
| 71 |  | 0.94 | 1.28 | 0.56 | 0.94 | 0.08 | 0.91 | -0.03 |
| 72 |  | 0.82 | 0.12 | 0.37 | 0.72 | -1.06 | 0.85 | -0.62 |
| 73 |  | 0.82 | 0.12 | 0.37 | 0.98 | 0.01 | 0.98 | 0 |
| 74 |  | 0.57 | -1.17 | 0.29 | 0.95 | -0.62 | 0.95 | -0.7 |
| 75 |  | 0.8 | -0.01 | 0.36 | 0.93 | -0.21 | 0.98 | -0.04 |

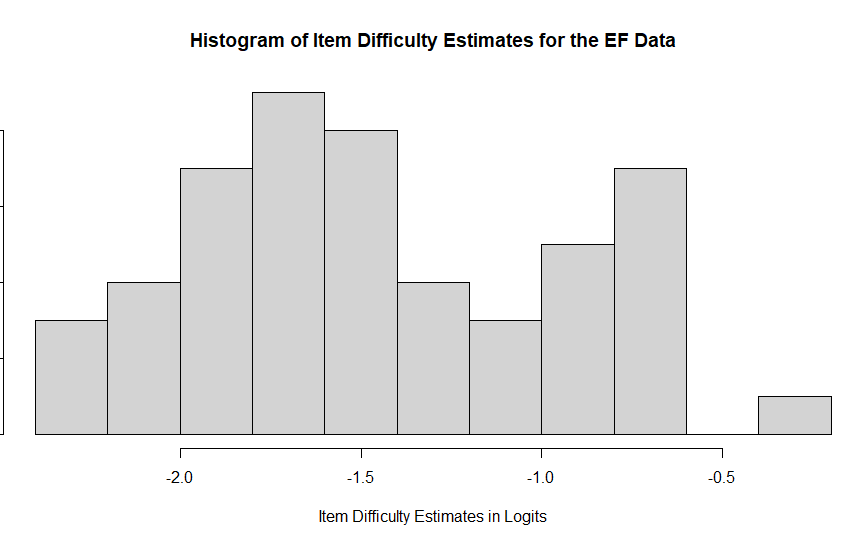


Figure S1. *Histogram of Item Difficulty Estimates for the IC Data*



Figure S2. *Histogram of Person Achievement Estimates for the IC Data*