# Lab10 Re-Analysis

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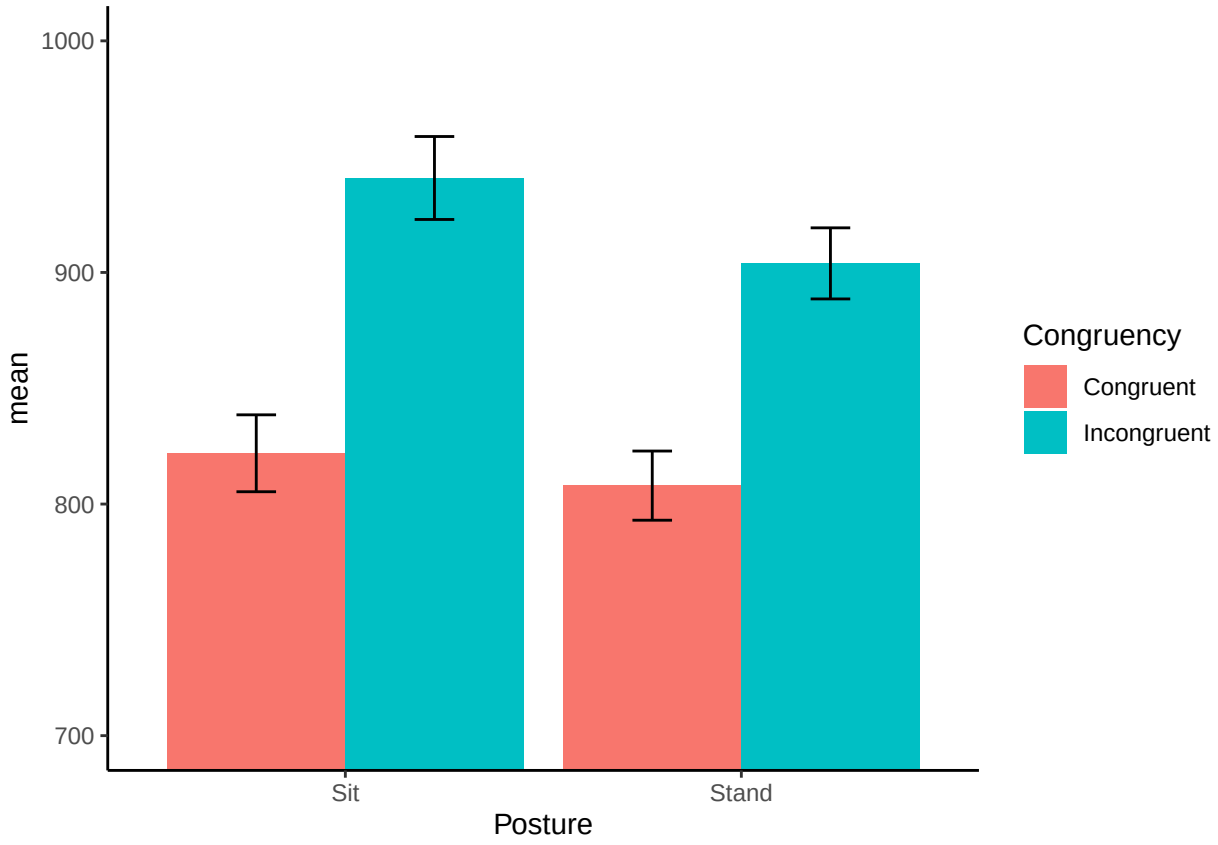
## Data analysis

We used R [Version 4.1.1; (**R-base?**)] and the R-packages *dplyr* [Version 1.0.7; (**R-dplyr?**)], *forcats* [Version 0.5.1; (**R-forcats?**)], *ggplot2* [Version 3.3.5; (**R-ggplot2?**)], *papaja* [Version 0.1.0.9997; (**R-papaja?**)], *purrr* [Version 0.3.4; (**R-purrr?**)], *readr* [Version 2.0.2; (**R-readr?**)], *stringr* [Version 1.4.0; (**R-stringr?**)], *tibble* [Version 3.1.5; (**R-tibble?**)], *tidyr* [Version 1.1.4; (**R-tidyr?**)], and *tidyverse* [Version 1.3.1; (**R-tidyverse?**)] for all our analyses.

First, I was able to replicate the Fig. 1 from the original paper:

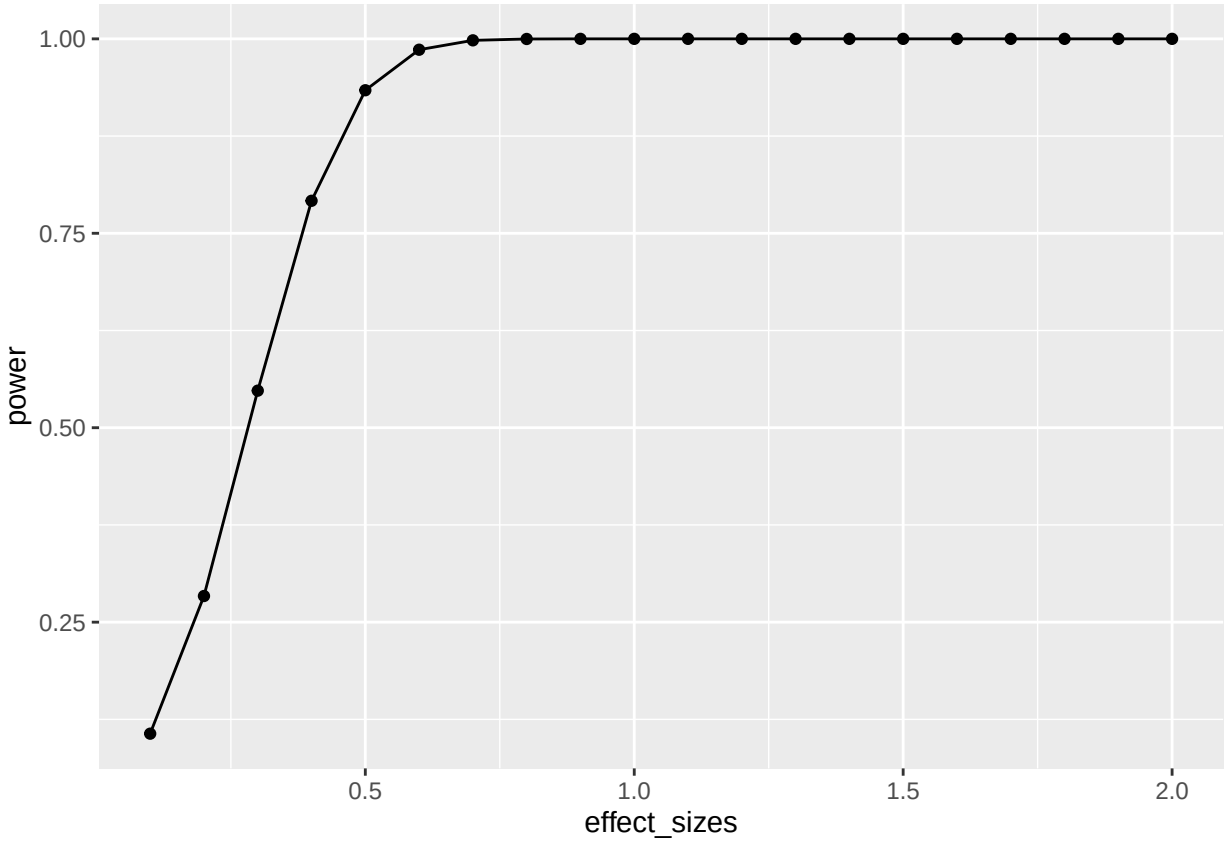
| Congruency | Posture | mean | SEM |
|---|---|---|---|
| Congruent | Sit | 821.9232 | 16.60384 |
| Congruent | Stand | 807.9599 | 14.93521 |
| Incongruent | Sit | 940.7855 | 17.91041 |
| Incongruent | Stand | 903.9131 | 15.34939 |




Second, I was able to replicate the Stroop effects in both the sitting ($M_d = -118.86$, 95% CI [−133.33, −104.40], $t(49) = -16.52$, $p < .001$) and standing ($M_d = -95.95$, 95% CI [−109.41, −82.49], $t(49) = -14.33$, $p < .001$) conditions.

The authors found that the Stroop effect shrunk when participants were standing compared to when they were sitting, F(1, 49) = 8.964, p = .004, np2 = .155. I was able to replicate that results using a paired sample t-test, $M_d = 22.91$, 95% CI [7.53, 38.29], $t(49) = 2.99$, $p = .004$.

Third, I was able to create a power curve analysis for the design:


1.00
0.75
0.50
0.25
power
0.5
1.0
1.5
2.0
effect_sizes

## References

Rosenbaum, D., Mama, Y., & Algom, D. (2017). Stand by Your Stroop: Standing Up Enhances Selective Attention and Cognitive Control. Psychological science, 28(12), 1864-1867.