# The Value of Accepting the Null Hypothesis

*Andy Grogan-Kaylor*

*2020-01-07*

## Important Substantive Cases

The Value of Accepting the Null Hypothesis $H_0$

| case | description | H0 | example |
|---|---|---|---|
| Equivalence Testing | Equivalence Of 2 Treatments Or Interventions | $\beta_1 = \beta_2$ | The effect of Treatment 1 is indistinguishable from the effect of Treatment 2 (especially important if one treatment is much more expensive, or time consuming than another). |
| Equivalence Testing | Equivalence Of 2 Groups On An Outcome | $\bar{x_1} = \bar{x_2}$ | Men and women are more similar than different *wrt* psychological processes (Hyde 2005). |
| Retiring Interventions | There Is No Evidence That Intervention X Is Effective | $\beta_{intervention} = 0$ | Evidence consistently suggests that a particular treatment has near zero effect. |
| Contextual Equivalence | Equivalence of a Predictor Across Contexts (Moderation) | $\beta_{interaction} = 0$ | Warm and supportive parenting is equally beneficial across different contexts or countries. |
| Family Member Equivalence | Equivalence of a Predictor Across Family Members | $\beta_{parent1} = \beta_{parent2}$ | Parenting from one parent is equivalent to parenting from another parent |
| Full Mediation | $x \rightarrow y$ Association Is Completely Mediated; No Direct Effect | $\beta_{xmy} \neq 0$; $\beta_{xy} = 0$ | The relationship of the treatment and the outcome is completely mediated by mechanism $m$. |
| Theory Simplification | Removing An Association From A Theory | $\beta_x = 0$ | There is no evidence that x is associated with y. |

## References

Hyde, Janet Shibley. 2005. "The gender similarities hypothesis." *American Psychologist* 60 (6): 581–92. https://doi.org/10.1037/0003-066X.60.6.581.