Are Brad Pitt and Edward Norton Equally Good Actors (#124080)

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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
At a conceptual level my hypothesis is that Brad Pitt and Edward Norton are both great actors, and because they are both great actors, the movies they play in are equally good.

3) Describe the key dependent variable(s) specifying how they will be measured.
At an operationalized level my hypothesis is that on average movies that star Brad Pitt and Edward Norton will receive the same rating in the Internet Movie Database. I will operationalize movie ratings as the IMDB scores, and movies that star Brad Pitt or Edward Norton as all movies they have appeared in, according to the following two search commands on IMDB:

For Brad Pitt
http://www.imdb.com/filmosearch?role=nm0000093&explore=title_type&mode=detail&page=1&title_type=movie&ref_=filmo_ref_job_typ&sort=release_date,desc&job_type=actor

For Edward Norton:
http://www.imdb.com/filmosearch?role=nm0001570&explore=title_type&mode=detail&page=1&title_type=movie&ref_=filmo_ref_job_typ&sort=release_date,desc&job_type=actor

4) How many and which conditions will participants be assigned to?
Two groups of movies that will be compared.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
We do not expect any missing data or outliers, and will analyze all movie ratings in an equivalence test with equivalence bounds of -0.5 and 0.5, and alpha level of 0.15, and as group sizes are unequal Welch's t-test (which does not assume equal variances) will be performed. The following analysis code (which I will run in R version 4.2.0, and TOSTER package version 0.4.1) assumes the data will be stored in the imdb_ratings dataframe with a column for the movie ratings for Brad Pitt (with the column name brad_pitt_score) and a column for the movie ratings for Edward Norton (with the column name edward_norton_score)

```
TOSTER::t_TOST(
  x = imdb_ratings$brad_pitt_score,
  y = imdb_ratings$edward_norton_score,
  low_eqbound = -0.5,
  high_eqbound = 0.5,
  eqbound_type = "raw",
  alpha = 0.15,
  var.equal = FALSE
)
```

I will consider my hypothesis that Brad Pitt and Edward Norton are equally good actors corroborated when the equivalence test is significant at $p < 0.15$ (or equivalently, when the 70% confidence interval falls around the mean difference falls completely within the equivalence bounds of -0.5 and 0.5). I will consider my hypothesis falsified if the null hypothesis significance test is significant at $p < 0.15$. If neither of the two tests is significant, our results are inconclusive. If both tests are significant, our hypothesis is also falsified, as there is an effect, but it is too small to matter.
So more formally, my hypothesis is corroborated if the TOST $p < 0.015$ & NHST $p > 0.015$, it is falsified if NHST $p < 0.015$, and inconclusive otherwise.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
We do not expect any missing data or outliers.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
The population consists of all movies that Brad Pitt and Edward Norton starred in (up to March 2023) since the start of their career, as indexed by the

internet movie database (www.imdb.com). The total number of observations is limited by the movies Brad Pitt and Edward Norton have appeared in too date, which is 62 and 39, respectively.

the sample size in the planned study will consist a total of 101 participants, each contributing 1 observations.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
Nothing else to pre-register.