At the Crossroads of Psychometrics and Ethics

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When does a methodological choice go from ill-advised to unethical?
What is ethical?

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Since I’m not an expert on ethics, this presented something of a problem.
A different direction

I tried a number of different definitions, but I couldn’t really settle on one that I was completely comfortable with.

Then I realized that this may well be part of the problem and might be worth exploring.
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So let’s explore, shall we?
In the following slides I’ll present a few situations which came to mind as I grappled with the idea of ethics as it applies to methodology. I don’t have answers, but hopefully this will be a place for all of us to start a longer discussion.
I remove three observations from a study that appear to be outliers. The desired result is still not statistically significant. I remove three more observations and the desired results becomes statistically significant. I report those results with a footnote that six observations were removed as outliers.
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I plan on collecting 200 participants for a study I am conducting. With 180 participants collected, I run the analyses and the desired result is statistically significant. I do not collect the additional 20 subjects and publish the study as having N=180.
I plan on collecting 200 participants for a study I am conducting. When all the data are collected, I run the analyses and the desired result is not statistically significant. An additional 20 subjects become available and when I add their data the desired result becomes significant. I publish the study as having N=220.
I run a random effects model and the desired result is not statistically significant. Knowing the usual method in the area is ANOVA, I run an ANOVA and the result is significant. I publish the ANOVA results.
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Cut scores

I develop a scale using classical test theory and determine that a summed score of four is a meaningful cut point between patients with a disorder and those who do not have the disorder.
Comparing IRT and summed scores

![Graph comparing IRT Scale Score and Summed Score](image)
Reliability

I use a widely known scale with a coefficient alpha of 0.9 to track a patient’s progress in treatment.
<table>
<thead>
<tr>
<th>$\rho$</th>
<th>Standard Error</th>
<th>95% CI</th>
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<tr>
<td>0.7</td>
<td>0.55</td>
<td>Lower Bound: -1.10, Upper Bound: 1.10</td>
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<tr>
<td>0.99</td>
<td>0.1</td>
<td>Lower Bound: -0.2, Upper Bound: 0.2</td>
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Some observations from the trenches

It has been my experience that most researchers enter into any particular analysis already “knowing” what the data are going to tell them.

A great number of travesties are committed in the name of “ease of presentation” or “clarity”.

There are lots of exploratory analyses done without validation on a separate sample.
What can be done?

Everyone seems to agree that making up data and pretending it is real is a bad thing (a.k.a. unethical) because it suggests there is scientific evidence for something when in fact there is not.
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Decisions made in the course of analyzing data can result in exactly the same outcome.
I suspect that sometimes researchers engage in dubious activities not out of malice, but out of lack of understanding. As such, the research community could benefit from some broader discussion about the ethics of data analysis.
Thank you.
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