Sample Size Re-estimation: Exploding the Myths

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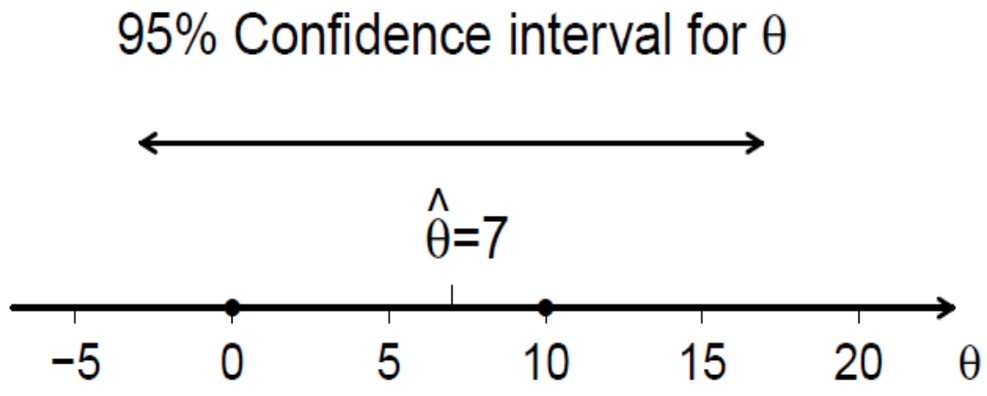
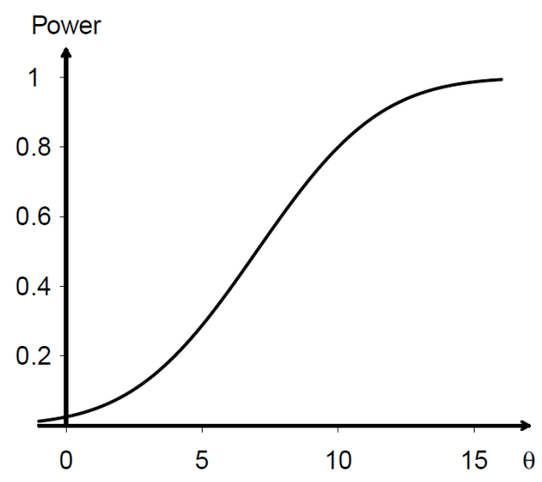
I can't choose my sample size properly as I don't know the treatment effect.

You will not know the treatment effect very accurately, even at the end of your trial.

If a trial has power 0.8 to detect a treatment effect of **10**, a 95% confidence interval at the half way point will have width **19.8**.



Consider setting power as a "what if" exercise.



In a group sequential design, sample size savings don't come from learning the true treatment effect – they come from learning what the *data* are.

What about a group sequential test where group sizes are *data-dependent* ?

OK, but the efficiency gain will be tiny; see J & T, Bmka, 2006.

With sample size re-estimation, I can reduce my upfront commitment. I shall

"start small and ask for more".

You will still have to commit to increasing sample size when your design requires it.

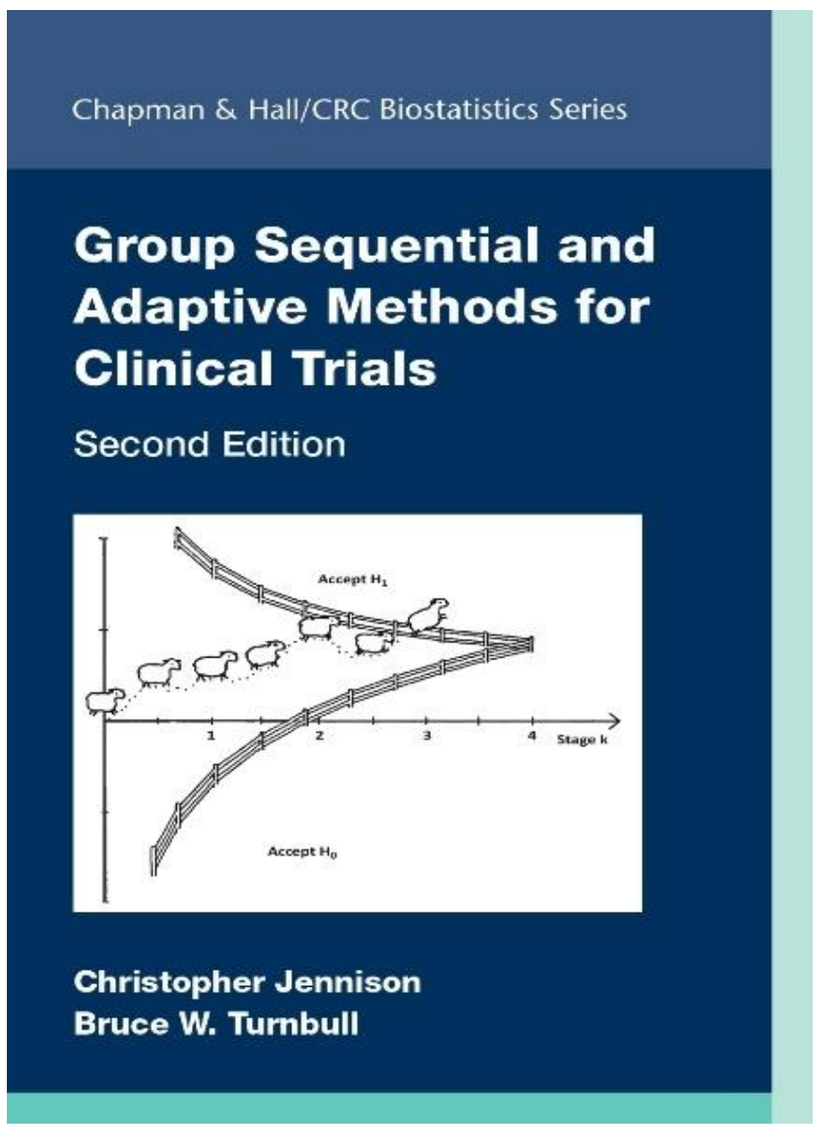
The result is no different from a group sequential design that starts large but can stop early.

Is the Mehta-Pocock promising zone design a good idea?

It is OK if you use a good sample size rule; see J & T, SiM, 2015

We know how to run group sequential tests, so why not use these?

For much, much more, see



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