

## Re: logistic regression question

---

*Source:* <http://sci.tech-archive.net/Archive/sci.stat.edu/2008-02/msg00008.html>

---

- *From:* Ray Koopman <[koopman@xxxxxx](mailto:koopman@xxxxxx)>
  - *Date:* Fri, 1 Feb 2008 11:14:58 -0800 (PST)
- 

On Feb 1, 8:03 am, amorphia <[spam.onto...@xxxxxxxxxx](mailto:spam.onto...@xxxxxxxxxx)> wrote:

I have an experimental design where subjects make a sequence of simple binary choices A or B. I would like to test the hypothesis that initially in the sequence subjects tend to choose A, but this bias degrades to random (or perhaps a bias to B) as the sequence progresses.

Initially I thought that maybe I could do a simple binary logistic regression, with sequence position as the only covariate. But now I think that this is probably invalid, because this would assume that choices at sequence position  $t+1$  are independent of choices at sequence  $t$ . This assumption is plainly false because the choices are made by the same individuals who may make runs of the same choice.

Can I solve this problem by including individual as a factor in the model perhaps? Or is a more complicated solution necessary?

Yes, making the additive constant in the logistic equation person-specific, so that it becomes 'a<sub>i</sub>' instead of just 'a', would be one way to attack the problem.

Another approach would be to use Cochran's Q test -- don't omit the df-adjustment for non-sphericity -- with pairwise McNemar tests on the positions.

.