



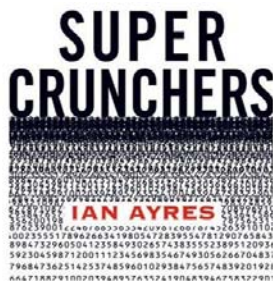
## Crunching Numbers

We heartily recommend a new book by Yale law professor and economist, Ian Ayres, called Super Crunchers. It is a very readable yet sound tour through contemporary statistical applications in business, public policy, education and other fields. There is not a single letter of Greek, and anyone with a little exposure to research methods or statistics will easily follow everything.

The author is a strong advocate for what we would call 1) modeling and 2) controlled experiments. If they are available (a big IF), historical datasets have been proven time after time to do a better job of predicting outcomes than even leading experts using judgment. Getting enough of the right data is always the hardest part of modeling, though even then there are many choices to be made.

In our view, marketing research does not make enough use of controlled experiments. The advanced methods books on our bookshelf rarely cover experimental design and the "analysis of variance" family of statistics, which may be part of the problem. Full test markets are complicated and expensive, but there are many other ways available to us to apply these venerable scientific methods.

We know this stuff.



## Prepare to Duck

We are only a few months (weeks?) away from another season of mostly obnoxious campaign advertising. There is a lot to dislike as citizens, but we as marketing professionals have reasons to be dismayed as well.

Our friend Chuck Kelly, President of Kerker (advertising), hit the nail on the head with an opinion piece in the Star-Tribune newspaper in late October. If you didn't see it then, we encourage you to take a peak at: [www.startribune.com/562/story/1496178.html](http://www.startribune.com/562/story/1496178.html)

## Today's Stat Lesson

It is not unusual to need to predict a binary variable (e.g. did the consumer make a purchase or not?). Some form of regression analysis is obviously called for, but the best choice is not one normally taught in introductory statistics classes.

The assumptions of standard regression are not met with a binary dependent variable, and there is the awkward fact that it can predict values less than 0 and more than 1.

What is appropriate is something called binary logistic regression. It models the probability of a "1" (e.g. a purchase, success) on the dependent variable given the predictors. While this procedure is usually only available in more-advanced statistical software, it is out there.

We routinely use logistic regression whenever called for, as should you (and your other suppliers, if any).

## The Experiment

We think it is a stretch to call marketing research a science, but scientific methods are nevertheless vital—particularly properly designed and executed experiments.

Experiments apply when looking forward and trying to decide between different courses of action. Experiments do not apply to a wide range of research such as tracking, awareness/usage, or segmentation. But evaluating options for product design or formulation, advertising creative, pricing, and positioning is best done with controlled tests.

Some experiments are intended only to identify winners and loser. This usually requires analysis of variance applied to one or more criterion measures. Other experiments are intended to create predictive models. They usually employ some version of regression.

Broadly speaking, either type of experiment involves exposing respondents to a stimulus and measuring their response to it. A given person might be repeatedly exposed and measured (as in most conjoint studies), or independent samples may be exposed to different stimuli.

The goal is to be able to infer cause-and-effect. Nothing matches the power of an experiment to do so (regressing a bunch of brands' ad spending on their next quarter sales may produce a "predictive" model, but this is not an experiment and is scientifically dubious).

A good experiment requires that we minimize the chance of external factors confounding our cause-and-effect observations. If independent cells are exposed to, say, three creative approaches, it is essential that they be attitudinally and demographically matched. The quality of the stimuli must be comparable; for instance, you would never test a rough story board against a finished spot.

The idea of rotating concepts in a test is familiar, and for good reason. So-called order

effects are often present. Rotating or randomizing order does not eliminate order effects—that noise is still there—but doing so spreads any bias out equally across the stimuli being tested. Because of this perennial problem, the strongest form of experiment between two or more stimuli (e.g. concepts, pricing levels) uses independent matched cells. If we have each consumer respond to multiple stimuli, then we will still look at the differences between first exposures.

As powerful as experiments are as scientific tools, it is critical that their design and analysis be entrusted to those who understand them. Say, Action Marketing Research.

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## Belaboring the Obvious

There may be more to the issue than meets the eye, a recent *Journal Of Advertising Research* article draws an unsurprising conclusion from a huge body of data: the more engaged consumers are with the media within which an advertisement appears, the more receptive they are to products advertised there. If you doubt us, check the September 2007 issue!

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## Baby Boomers

Are these the Baby Boomers you know? Probably yes—they just aren't the ones stereotyped in far too much of the advertising aimed at them. The source is our proprietary survey of 2,000 members of this generation.

- 25% own a Grateful Dead recording but 40% own a Willie Nelson recording.
- 44% cannot name a single Bob Dylan song beyond "Blowing in the Wind."
- 96% never read "The Medium is the Message" and 85% never read "The Whole Earth Catalog."
- 30% admire Rev. Billy Graham very much, while 6% admire Jane Fonda very much.
- 4% practice yoga, but 24% consider themselves to be born again.