

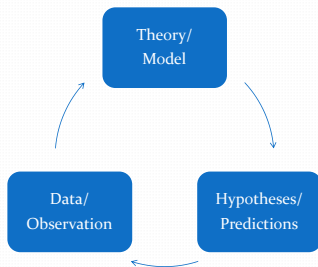
MAR 7588: Consumer Information Processing and Decision Making

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- Introduction to the class, and each other
- Models, Hypotheses, and Data
- *Statistics as Principled Argument* (Abelson, 1995)
- “Spoilers” paper as an example

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What are models?

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Models



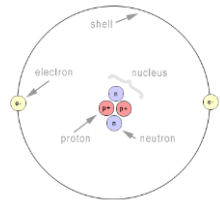
- Models are simply representations of some key aspects of some object/system of interest.
- May be verbal, pictorial, mathematical, computer program, etc.
- Allow for empirical predictions (or postdictions) of some sort

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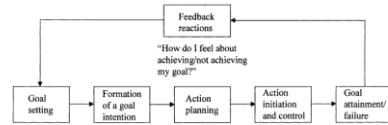
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The Atom



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FIGURE 1
Goal Setting and Goal Pursuit in Consumer Behavior



Ragozzi & Dholakia, 1999

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Simple mathematical models

- Linear regression model:

$$Y_i = \alpha + \beta X_i + \varepsilon_i$$

- Measurement model:

$$X = T + E$$

Observed score = true score + error

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Metaphors / Analogies as Simple Models

- “Romney and Perry Start Swinging Freely”
 - “During the debate, the gloves came off”
- “Wolverines Annihilate Gators”
- “Our cupboard is bare, and the only thing we have in surplus is political venom. Indeed, if political venom could be turned into a transportation fuel, we’d be energy independent today.” (T. Friedman 9/10/11)

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In the news

- 2016 election maps

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Some Comments

- Models are pragmatic tools for prediction, control, and understanding/explanation
- No model is intended to be a perfect replica
 - “All models are wrong, but some are useful” – George Box
- Models necessarily simplify
- Multiple models may be useful
 - Although some may be better/more suitable for some tasks than others
 - Avoid the urge to seek the “one true model”
 - Toolbox analogy

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Abelson: *Statistics as Principled Argument*

On null hypothesis tests:

- “A null hypothesis test is a ritualized exercise of devil’s advocacy.” (p.9)
 - Suppose that there is no effect in the population; what results in the sample are plausible?
- “...the standard terms, ‘accept’ or ‘reject’ the null hypothesis, are semantically too strong”
 - Better than accept the null: “retain” the null, treat null as “viable”
- “Significance Tests Provide Very Little Information”
- “Single Studies Are Not Definitive”

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MAGIC criteria

- Magnitude: the size of the effect
- Articulation: the degree of detail in which the conclusions are specified
- Generality: the breadth of applicability of the conclusions
- Interestingness: does it change your belief in a meaningful way? Is it important?
- Credibility: is the conclusion believable?

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“In making his or her best case, the investigator must combine the skills of an honest lawyer, a good detective, and a good storyteller.” (p. 16)

Often some tension between accurately presenting the full set of data, and telling a “good story.”

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Spoilers (Leavitt & Christenfeld, 2011)

- “Subjects significantly preferred spoiled over unspoiled stories in...ironic twist stories 6.20 vs. 5.79, $p=.013$, Cohen’s $d=0.18$.” What do these numbers mean?
- “In all three story types, incorporating spoiler text into stories had no effect on how much they were liked $ps>.4$.” What does this mean?
- Using Figure 1:
 - estimate approximate 95% confidence intervals for the spoiled and unspoiled population means for “A Dark Brown Dog”
 - estimate approximate 95% confidence interval for the difference in population means (spoiled – unspoiled) for “A Dark Brown Dog”
- How does this paper do according to the MAGIC criteria?

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A few more comments...

- Norms of the field are just that, & some are more sensible than others
 - $p=.05$ is not a magic threshold!
 - “Main effects” can be fine!
 - Phenomena may be demonstrated without being fully explained!
- Explanations are (at best) only locally “ruled out”
 - An explanation “ruled out” in study 1 may still apply to study 2
 - Parsimony is only one of many nice criteria
- Be accurate and informative when naming your conditions
 - And don’t take others’ condition names at face value
- “Put on your participant hat”
 - when designing studies
 - when reading methods sections

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Papers for Next Week

- Gilbert (1991). How mental systems believe, *American Psychologist*, 46, 107-119.
- Hasher et al (1977). Frequency and the Conference of Referential Validity, *JVVB*, 107-112.
- Skurnik, I., Yoon, C., Park, D. C., & Schwarz, N. (2005). How warnings about false claims become recommendations. *Journal of Consumer Research*, 31(4), 713-724.
- Fazio, L. K., Brashier, N. M., Payne, B. K., & Marsh, E. J. (2015). Knowledge does not protect against illusory truth. *Journal of Experimental Psychology: General*, 144(5), 993-1002.

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