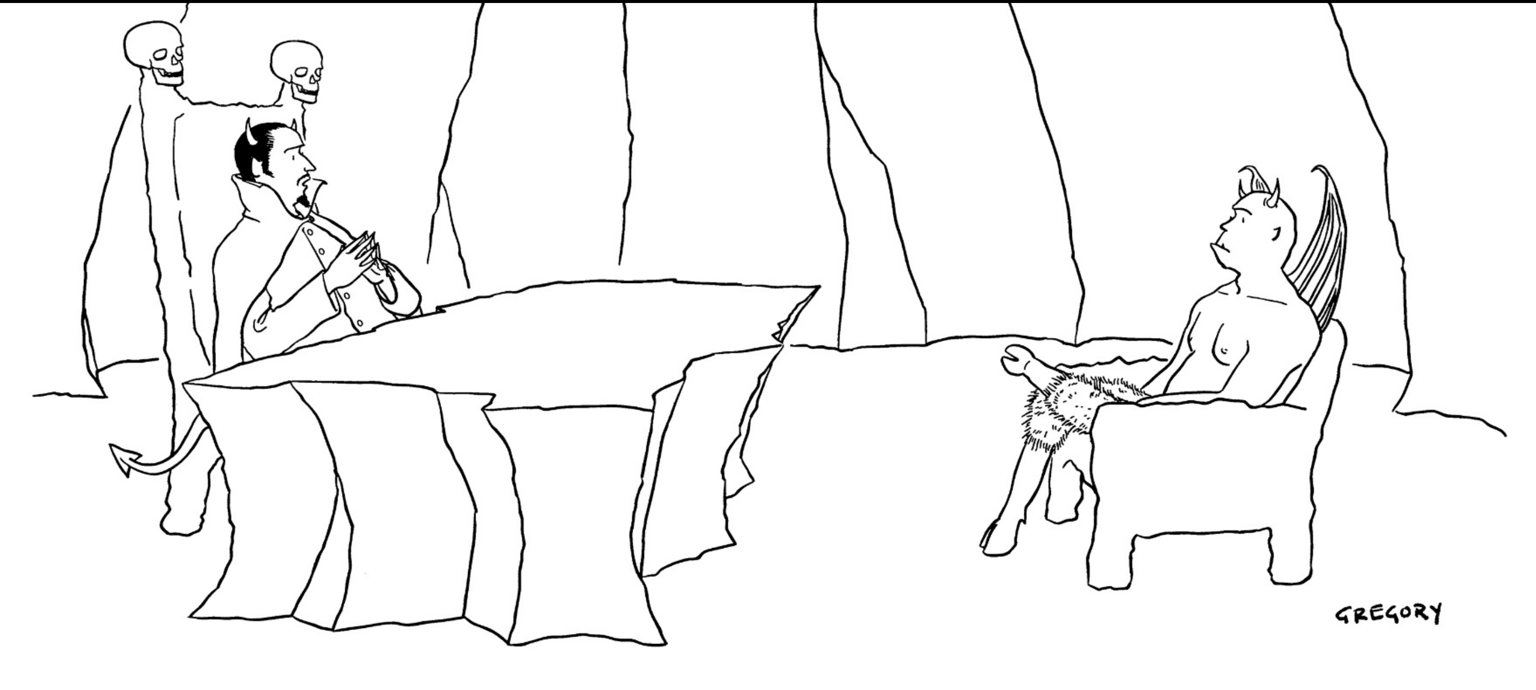
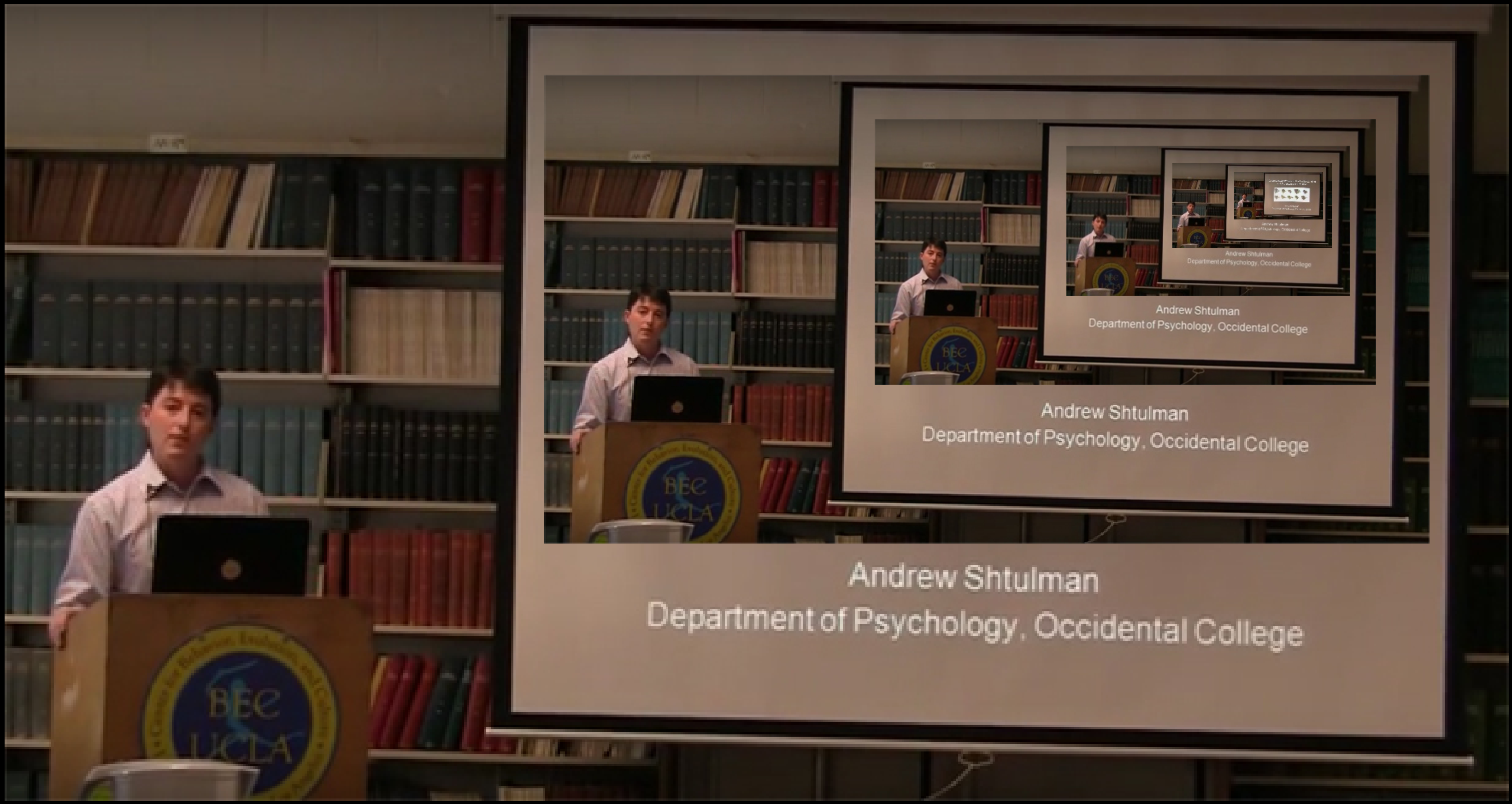
Creating an Effective Presentation



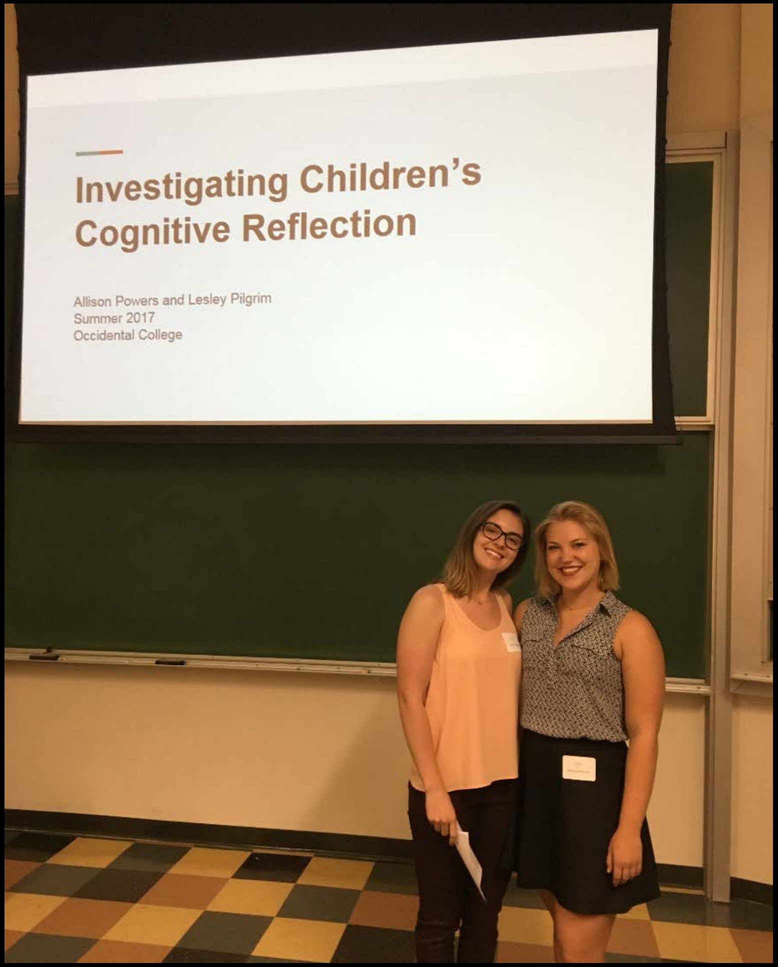
"I need someone well versed in the art of torture—do you know PowerPoint?"

Andrew Shtulman
Psychology & Cognitive Science

A Presentation on Presentations



Poster or Talk?



Poster or Talk?

Posters allow for more personal interaction, but talks reach a larger audience.

Both require careful consideration of *structure*, *format*, and *content*.

Essential Components

Introduction:	Motivate your study
Method:	Explain what you did
Results:	Highlight key findings
Discussion:	Put your findings in context

Motivate Your Study

A good introduction:

(1) Lays out the theoretical questions at hand.
(2) Reviews past research pertaining to those questions.
(3) Identifies a gap that your study addresses.

Your lit review needs to drive toward your study; do not just string together a bunch of abstracts.

Explain What You Did

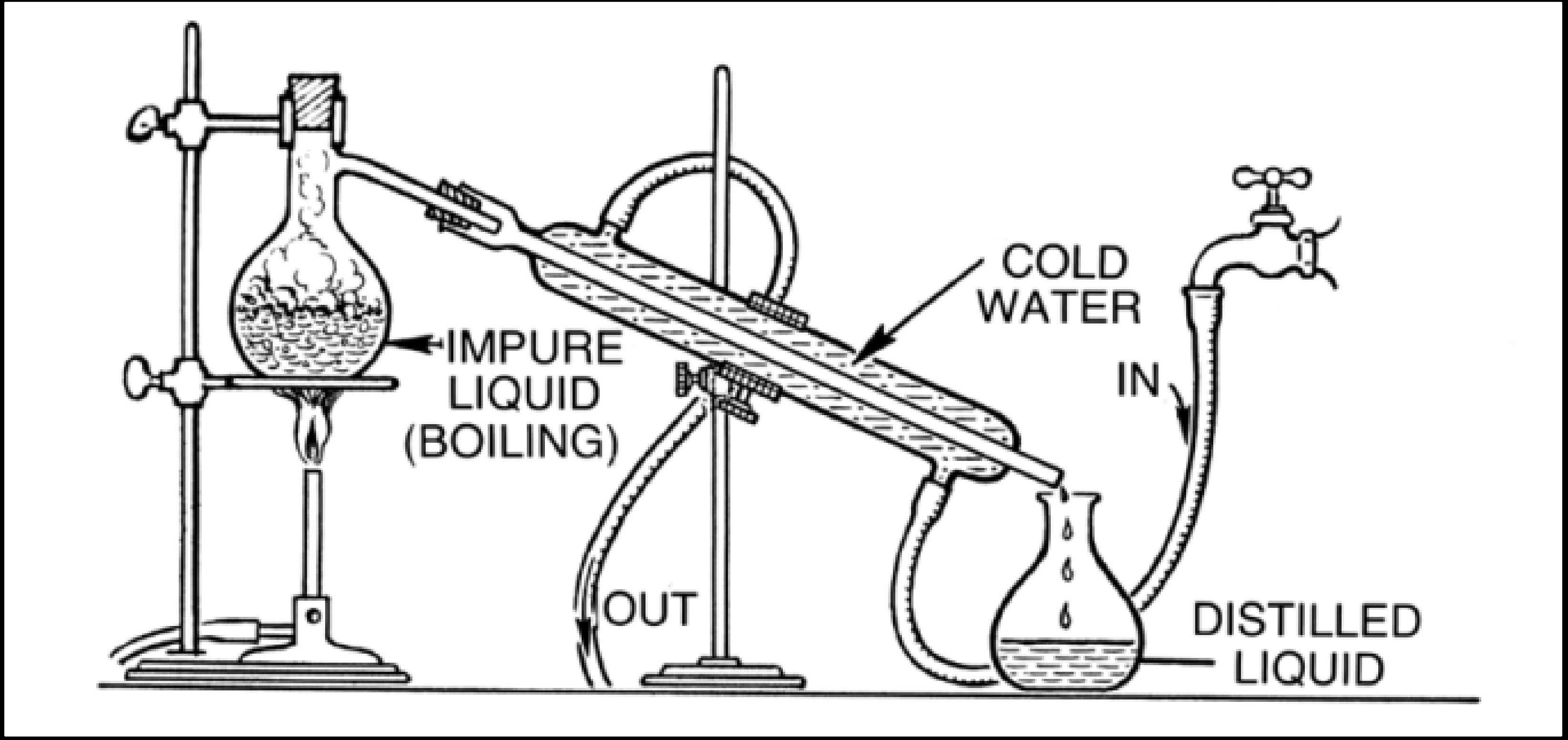
Describe your methods of investigation and analysis in specific, concrete terms.

Do not assume your audience is familiar with the conventions in your field.

Or that they cannot understand those conventions.

Highlight Key Findings

You can't present everything you found; *distill* what's most important to your question/hypothesis.

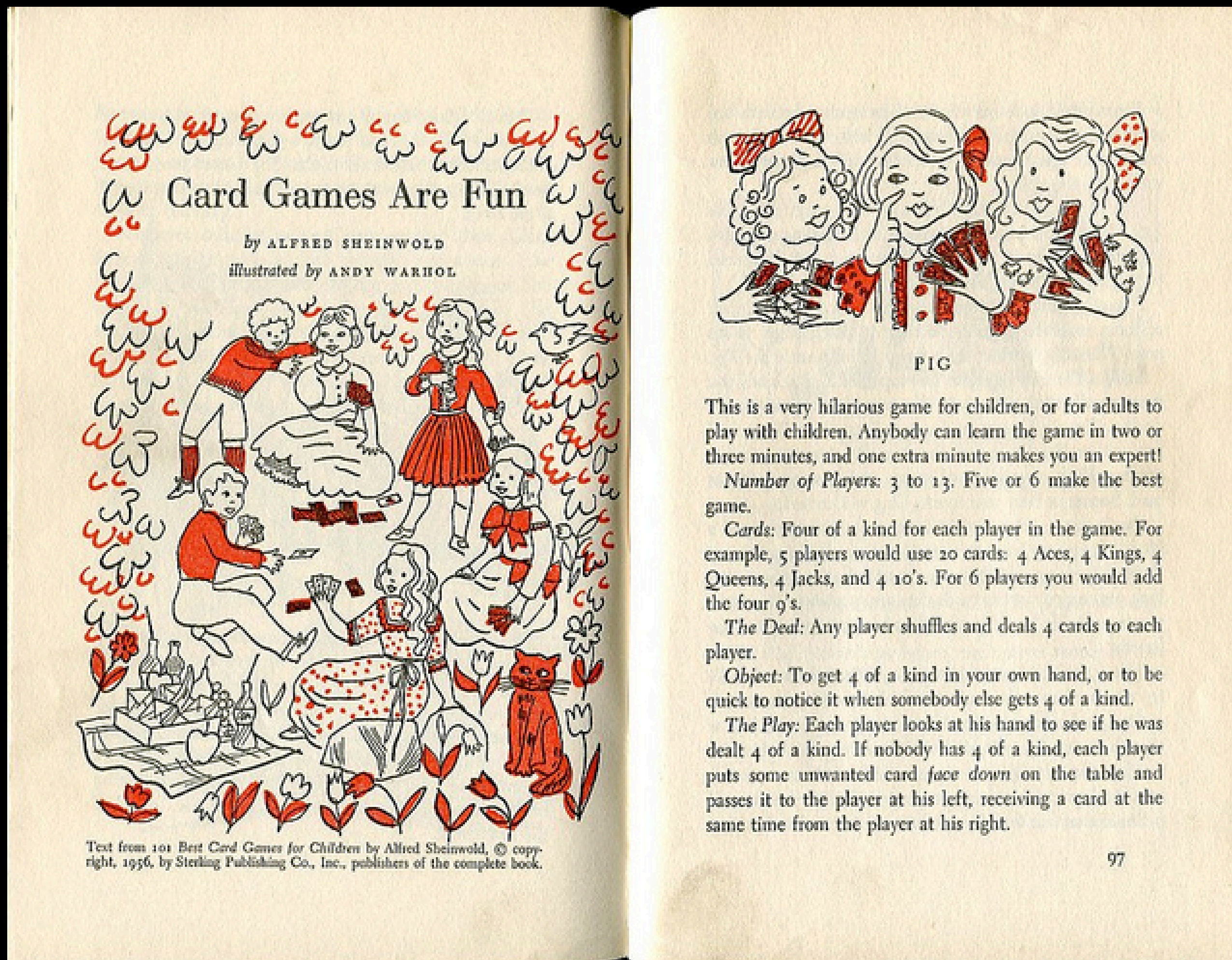


Put Your Findings in Context

Discuss your findings in the context of larger theoretical questions.

Your audience should walk away knowing what you found *and* why it matters.

Balance Text, Images, Space



Card Games Are Fun

by ALFRED SHEINWOLD

illustrated by ANDY WARHOL

Text from 101 *Best Card Games for Children* by Alfred Sheinwold, © copyright, 1956, by Sterling Publishing Co., Inc., publishers of the complete book.

PIG

This is a very hilarious game for children, or for adults to play with children. Anybody can learn the game in two or three minutes, and one extra minute makes you an expert!

Number of Players: 3 to 13. Five or 6 make the best game.

Cards: Four of a kind for each player in the game. For example, 5 players would use 20 cards: 4 Aces, 4 Kings, 4 Queens, 4 Jacks, and 4 10's. For 6 players you would add the four 9's.

The Deal: Any player shuffles and deals 4 cards to each player.

Object: To get 4 of a kind in your own hand, or to be quick to notice it when somebody else gets 4 of a kind.

The Play: Each player looks at his hand to see if he was dealt 4 of a kind. If nobody has 4 of a kind, each player puts some unwanted card *face down* on the table and passes it to the player at his left, receiving a card at the same time from the player at his right.

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Teaching Children About Evolution Through Analogical Encoding

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Department of Psychology, Occidental College

Introduction

In many educational systems, evolution is not introduced until high school on the assumption that the logic of natural selection is too complex for younger students to grasp.

Adults, after all, tend to misunderstand evolution, conflating ontogenetic (individual-level) adaptation with phylogenetic (population-level) adaptation and citing a trait's function as sufficient explanation for its origin (Shtulman, 2006).

While such misconceptions may indicate that evolution is outside of the purview of children, they may also indicate that evolution is introduced too late in a student's education, after misconceptions about biological adaptation have become deeply entrenched.

Kelemen, Emmons, Schillaci, and Ganea (2014) explored this possibility by teaching elementary-school-aged children about evolution in the context of a storybook.

Their intervention was successful, but that success is qualified by the fact that children were taught a selection-based explanation for a single type of adaptation (foraging) and their understanding of that explanation was elicited in the context of a multi-tiered interview.

Here, we sought to expand on Kelemen et al.'s findings by teaching children about multiple instances of adaptation and by assessing their understanding with a single question: "How did [animal X] come to have [trait Y]?"

We employed an instructional technique shown to facilitate the abstraction of higher-order causal principles: "analogical encoding" (Gentner, Loewenstein, & Thompson, 2003).

Method

Participants were 96 children recruited from local parks, 53 between the ages of 4 and 7 ("younger children," M = 5.5) and 43 between the ages of 8 and 12 ("older children," M = 9.0).

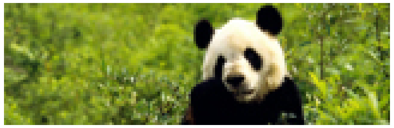
Children's explanations for adaptation were assessed before and after a brief tutorial in which natural selection was illustrated through the guided comparison of two examples of selection-based change.

Of interest was how often children mentioned each of five evolutionary principles:

1. Variation
2. Differential survival
3. Differential reproduction
4. Inheritance
5. Population change

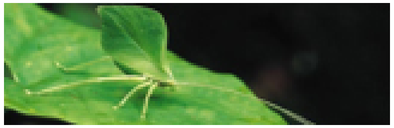
Pretest and posttest scores ranged from 0 to 10 (5 principles per 2 items); we also tracked how often children cited non-evolutionary ideas, namely, need, growth, and creation.

Sample Assessment Items



This is a panda. Pandas have thumbs so they can hold bamboo, which is the only food they eat.

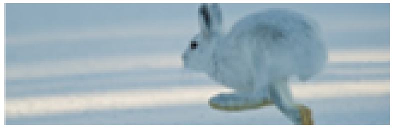
Did you know that the ancestors of pandas—who lived long, long ago—did not have thumbs? How do you think pandas came to have thumbs?



This is a katydid. Katydids have leaf-like wings so they can blend into trees and avoid being eaten by birds and lizards.

Did you know that the ancestors of katydids—who lived long, long ago—did not have leaf-like wings? How do you think katydids came to have leaf-like wings?

Sample Training Item



This is an Arctic hare. Arctic hares are white so they can blend into the snow and avoid being eaten by foxes and polar bears.

The ancestors of Arctic hares—who lived long, long ago—were not white. They were brown. Let me tell you how white hares came from brown hares.

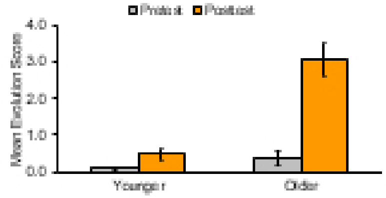
Once, by chance, some hares were born with white fur.

The white hares lived longer than the brown hares because they were better able to hide from foxes and polar bears.

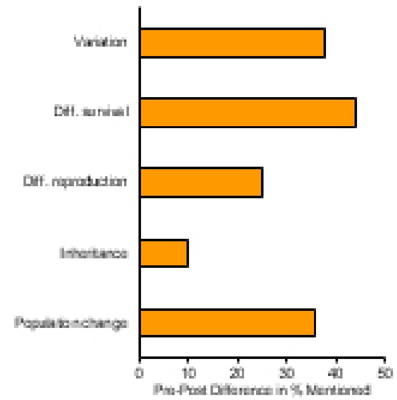
Because the white hares lived longer than the brown hares, the white hares had more babies. The babies of the white hares had white fur, just like their parents.

After many, many years, all the brown hares were replaced by white hares.

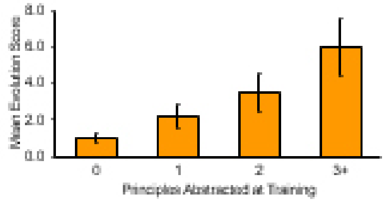
Training Effects by Age



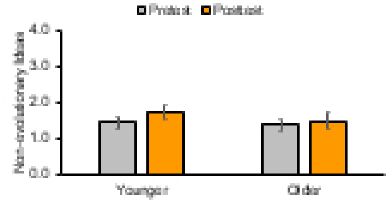
Training Effects by Principle



Schema Abstraction



Alternative Conceptions



Discussion

Analogical encoding proved effective at teaching children selection-based explanations for biological adaptation, particularly children aged eight and older.

Each evolutionary principle conveyed by the training was mentioned significantly more often at posttest than at pretest.

Children's ability to abstract a schema common to both examples in the tutorial was significantly correlated with their ability to generate schema-consistent (i.e., evolutionary) explanations at posttest.

Non-evolutionary explanations, predicated on changes to individual (not populations), were provided with equal frequency at pretest and posttest despite the concomitant increase in evolutionary explanations.

These results confirm that natural selection can be taught to elementary-school-aged children and suggest that analogical encoding may be an effective way to do so.

Learning about natural selection does not, however, lead to the replacement of non-evolutionary views of adaptation, implying that those views must be addressed separately.

References

Gentner, D., Loewenstein, J., & Thompson, L. (2003). Learning and transfer: A general role for analogical encoding. *Journal of Educational Psychology, 95*, 393-405.

Kelemen, D., Emmons, N. A., Schillaci, R. S., & Ganea, P. A. (2014). Young children can be taught basic natural selection using a picture-storybook intervention. *Psychological science, 25*, 893-902.

Shtulman, A. (2006). Qualitative differences between naïve and scientific theories of evolution. *Cognitive psychology, 52*, 170-194.

OMG GMO! Parent-Child Conversations About Genetically Modified Foods

Andrew Shtulman, Ilana Share, Rosie Silber-Marker (Department of Psychology, Occidental College)
Asheley Landrum (Annenberg Public Policy Center, University of Pennsylvania)

Introduction

Genetically Modified Organisms (GMOs) are an increasingly common food commodity in the industrialized world.

Large-scale investigations have found no health risks associated with GMO consumption (National Academy of Sciences, 2016), but many people remain skeptical and want GMO foods labeled (Lusk, 2015).

Public opposition to GMOs stems from essentialism, or the belief that members of a species share a common essence, which gives rise of species-typical traits (Gelman, 2003).

Essences are associated with genes, but the association is superficial; essences are viewed as immutable and species-specific whereas genes are neither. Essentialism causes problems for understanding genetics in general (Dar-Nimrod & Heine, 2011) and GMOs in particular (Blancke et al., 2015).

Here, we investigated lay conceptions of GMOs in the context of parent-child conversations. Parents determine, to a large extent, what children eat and whether those foods contain GMOs, but most parents are not biological experts and are thus prone to GMO-related misconceptions.

We sought to answer four questions:

1. What do parents know about GMOs, relative to other food dimensions?
2. How strongly do parents prefer non-GMO foods to those that contain GMOs?
3. How do parents talk about their GMO preferences with their children?
4. What do children learn about GMOs from those conversations?

Method

Participants were 70 parent-child dyads recruited from local parks; children ranged in age from 3.1 to 10.4, with a mean age of 6.9.

Dyads were given a book that contained nine types of food (granola bars, cereal, yogurt, bread, popcorn, tortillas, crackers, pretzels, pasta) and were asked to choose between two products for each food type.

The products were labeled as to whether they contain GMOs, whether they contain gluten, and whether they were grown organically. They differed along either one dimension, two dimensions, or all three dimensions.

Parents were instructed to choose a preferred product and to discuss that choice with their child.

At the beginning of the interview, parents were asked to define "GMO," "gluten," and "organic." Children were asked to define the same terms at the end of the interview.

Sample Materials

Non-GMO
Gluten-free
Organic

Contains GMOs
Gluten-free
Organic

Non-GMO
Contains gluten
Organic

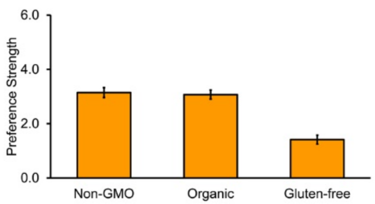
Contains GMOs
Gluten-free
Organic

Non-GMO
Contains gluten
Non-organic

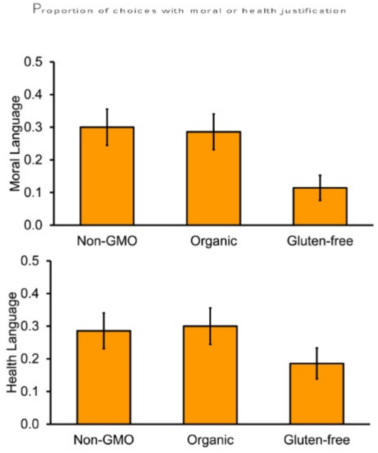
Contains GMOs
Gluten-free
Organic

Parental Preferences

Number of choices (out of 6) in which option was selected

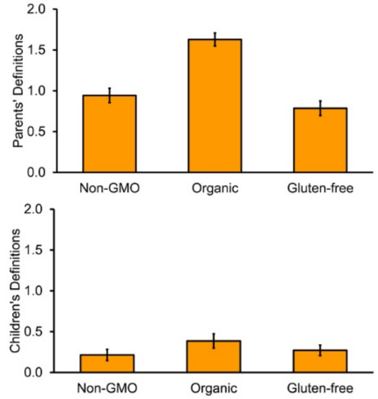


Parental Language



Definition Accuracy

0 = incorrect, 1 = partially correct, 2 = correct



Predictors of Child Knowledge

GMO	Child's age	0.43***
	Parent's definition accuracy	0.34**
	Parent's preference strength	0.00
	Parent's moral language	0.20
	Parent's health language	0.04
Organic	Child's age	0.45***
	Parent's definition accuracy	0.18
	Parent's preference strength	0.10
	Parent's moral language	-0.16
	Parent's health language	-0.13
Gluten	Child's age	0.39***
	Parent's definition accuracy	0.29**
	Parent's preference strength	0.02
	Parent's moral language	-0.10
	Parent's health language	0.03

Discussion

Are parents' attitudes and preferences towards GMOs grounded in knowledge? And do parents convey that knowledge to their children? Three findings suggest not.

First, parents' food preferences were not aligned with their knowledge of food-related dimensions. Parents preferred non-GMO foods to gluten-free foods but were no better at defining "GMO" than "gluten." In contrast, they preferred non-GMO foods equally to organic foods but were significantly better at defining "organic" than at defining "GMO."

Second, parents used more morally-valenced language (e.g., "poison," "disgusting") to describe the food dimensions for which they had stronger preferences, but they did not use more health-related language to describe those dimensions.

Third, children's ability to define the food dimensions was correlated with their age and with their parents' ability to define those dimensions but was not correlated with their parents' preferences or language patterns.

These findings indicate that parents' knowledge of GMOs influences their children's knowledge but is unrelated to their overtly-expressed preferences or attitudes.

Future research is needed to determine whether attitudes toward GMOs are better predicted by essentialist biases than by knowledge, as well as whether those attitudes affect actual consumer behavior and GMO consumption.

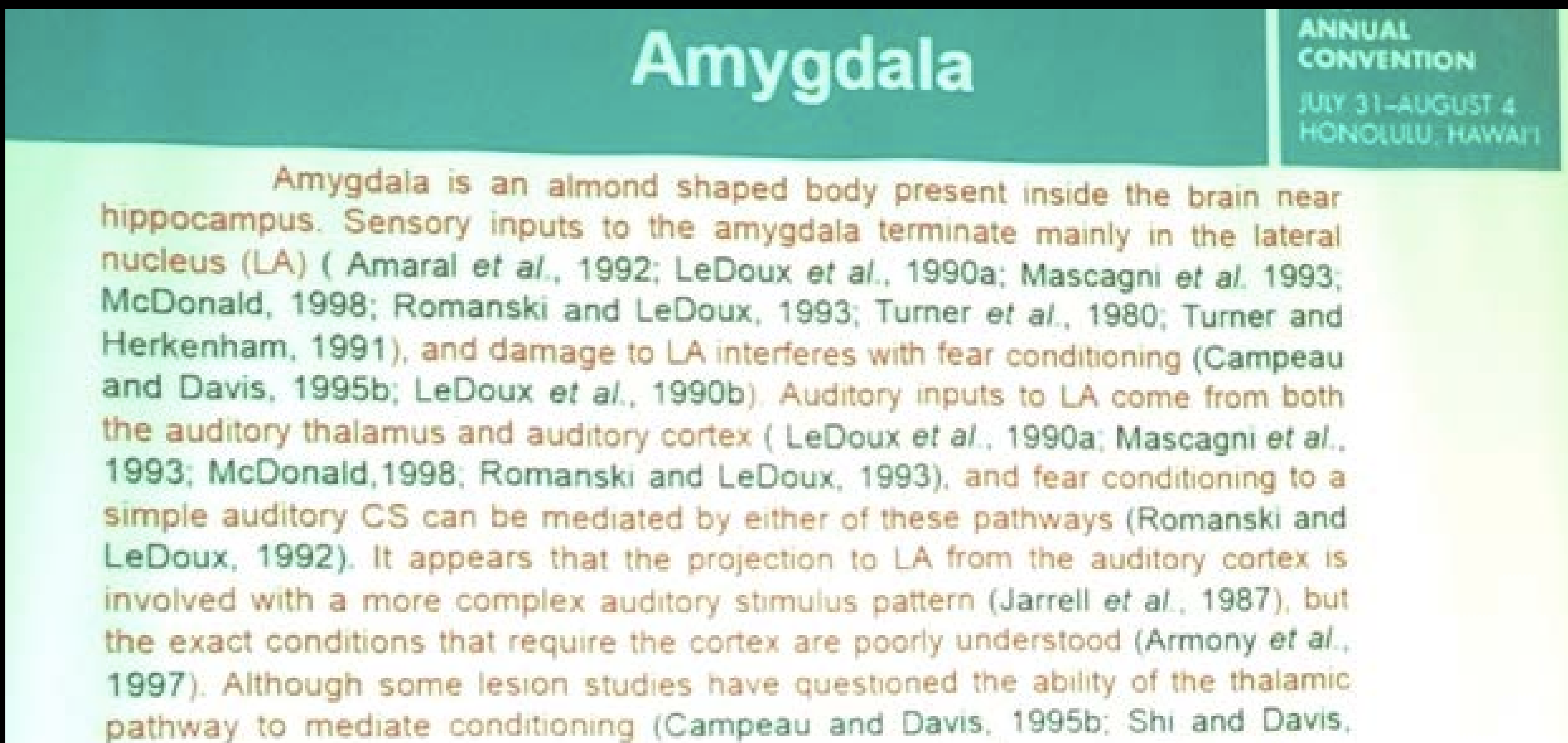
USDA ORGANIC

NON GMO Project VERIFIED

Certified GF Gluten-Free

Use Large Font

If you stick to a large font (18-24 pt), you won’t be tempted to commit this atrocity:



Use Text Sparingly

Aim for 2-3 ideas (bullet points, sentences) per slide.

If you need to say more, add another slide.

Do not shrink your font to cram in more text; you can discuss the same topic across multiple slides.

Break Up Your Ideas

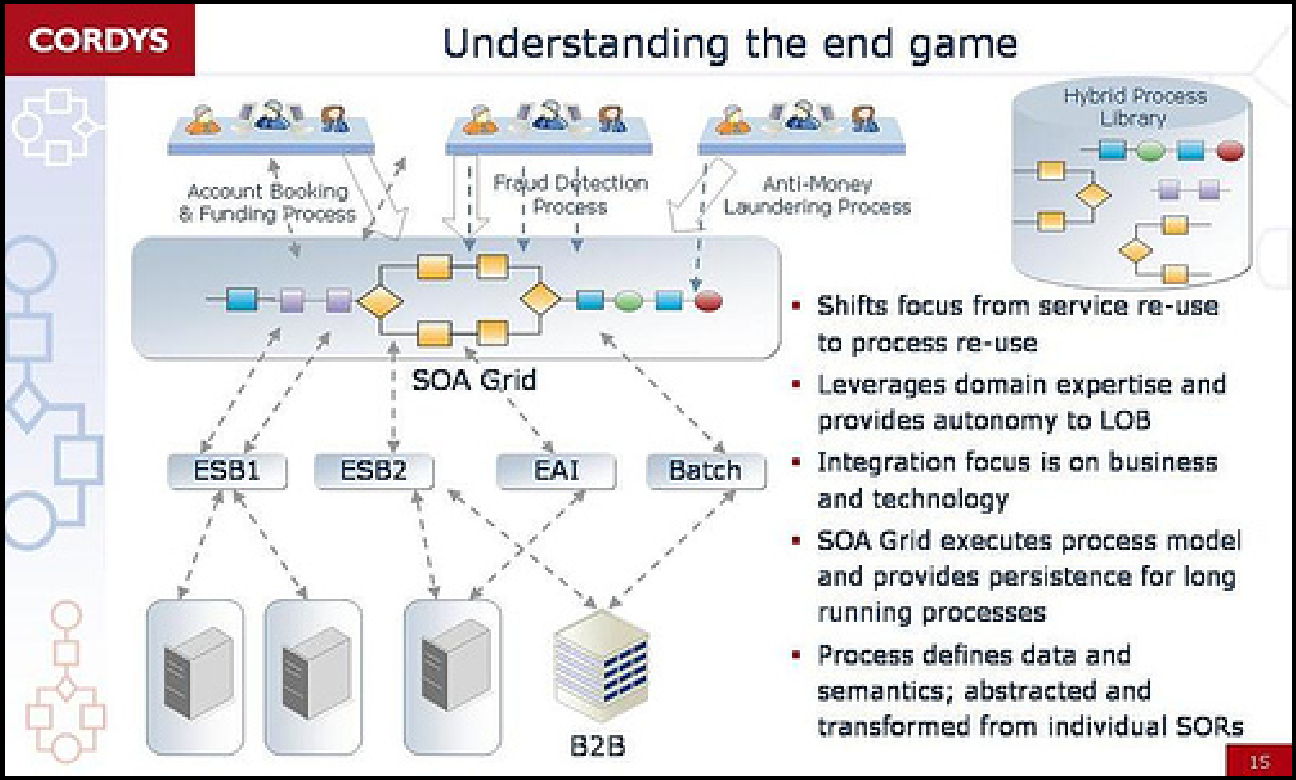
Use your slides/textboxes as ways of moving along and keeping a steady pace.

Try not to linger on the same slide/textbox for more than a minute.

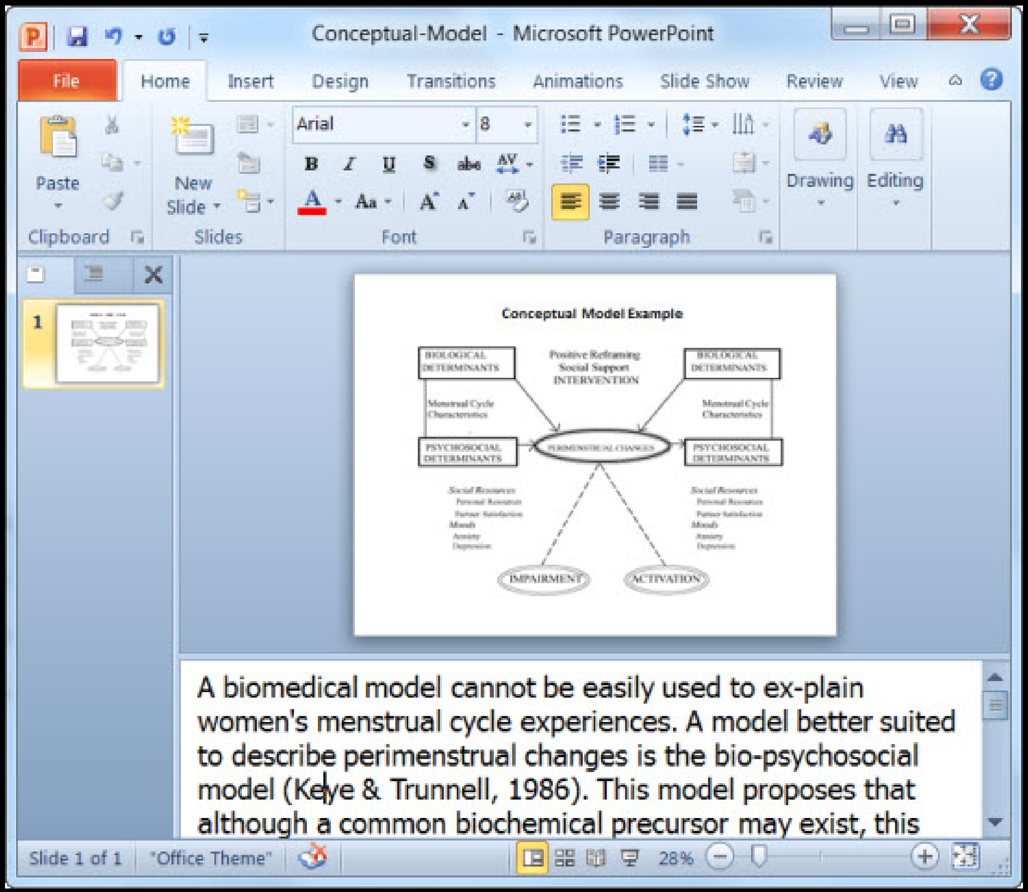
Presentations, unlike papers, unfold *in time*.

Discuss What You Show

Do not include information you do not intend to discuss; unexplained jargon, images, symbols buy you nothing.



Show What You Discuss



Beware of presenter tools.

You should be on the *same page* as your audience.

Discuss the text or image your audience is currently viewing.

Use Tables

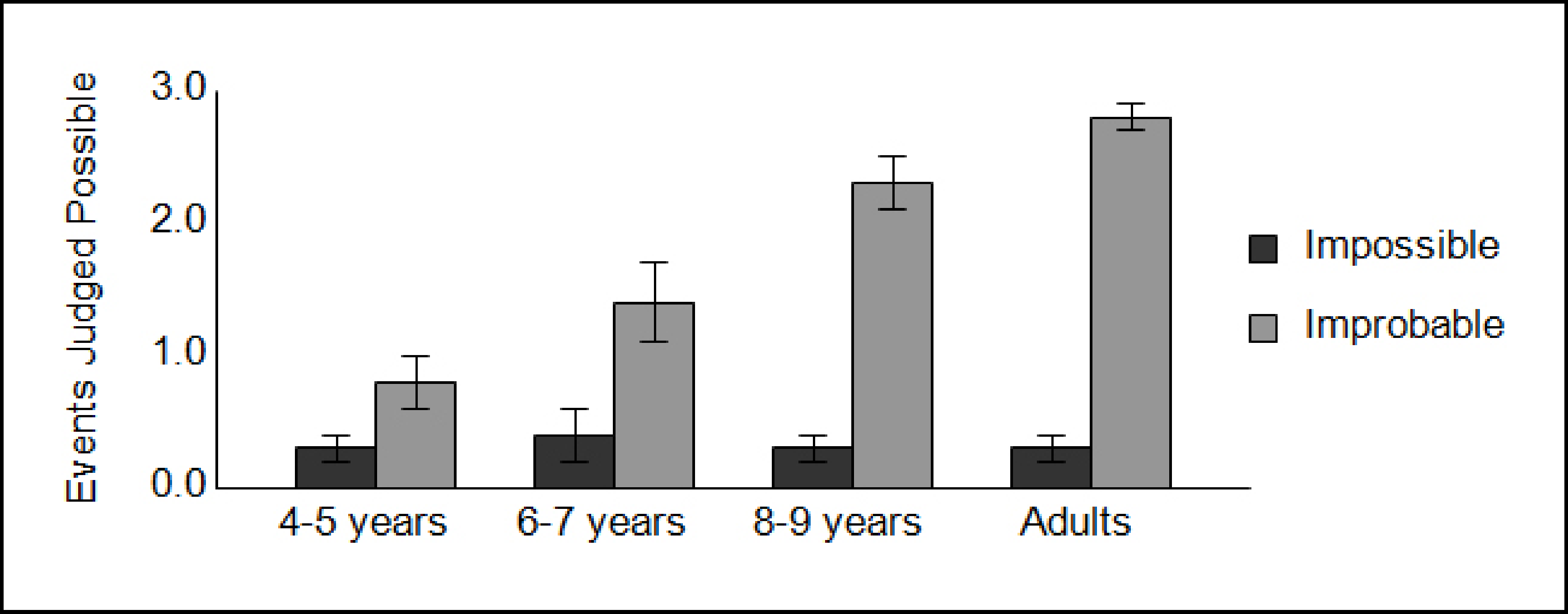
Tables are better than text at conveying a series of numbers or labels.

Tables do not have to be complicated.

Age group	Accuracy	Speed
4- to 5-year-olds	70%	4.0 seconds
6- to 7-year-olds	80%	3.0 seconds
8- to 9-year-olds	90%	2.0 seconds

Use Figures

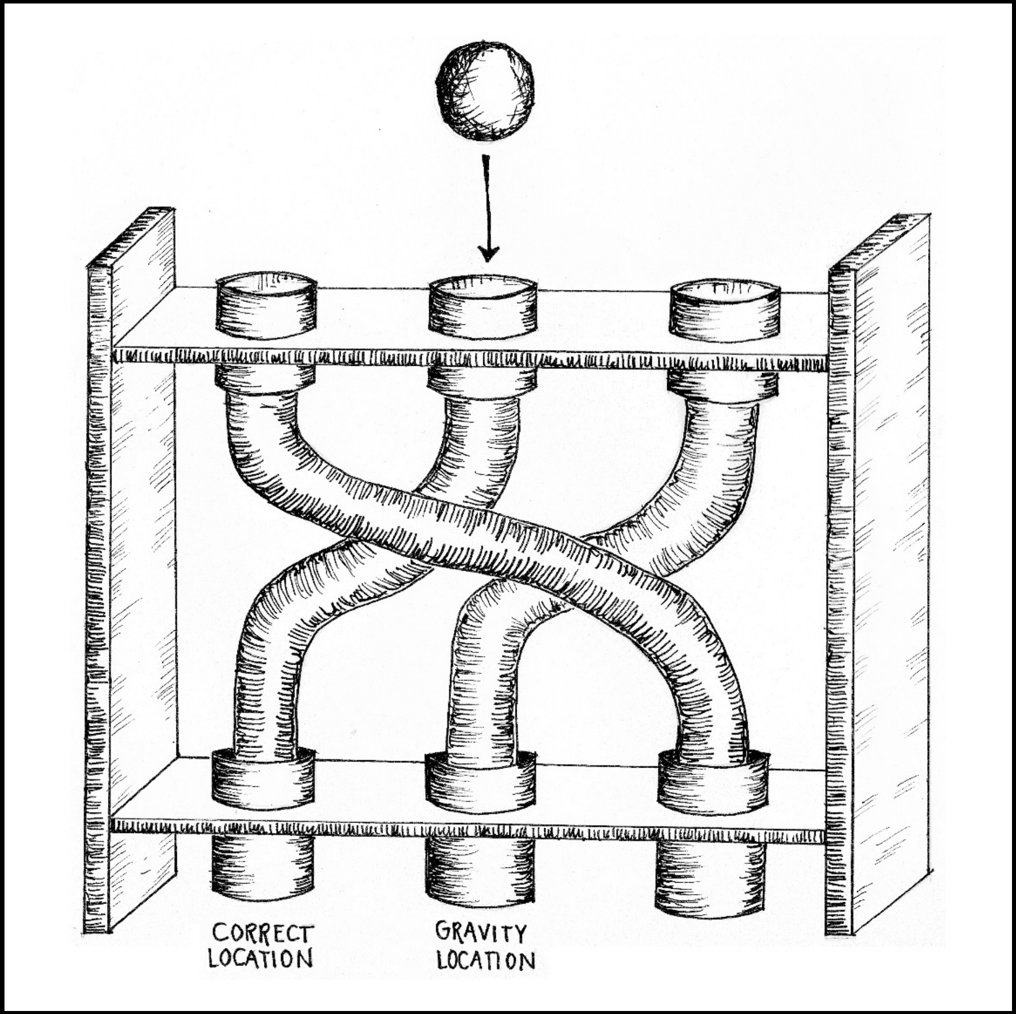
Figures are better than tables at conveying patterns, e.g., differences between groups, correlations, interactions.



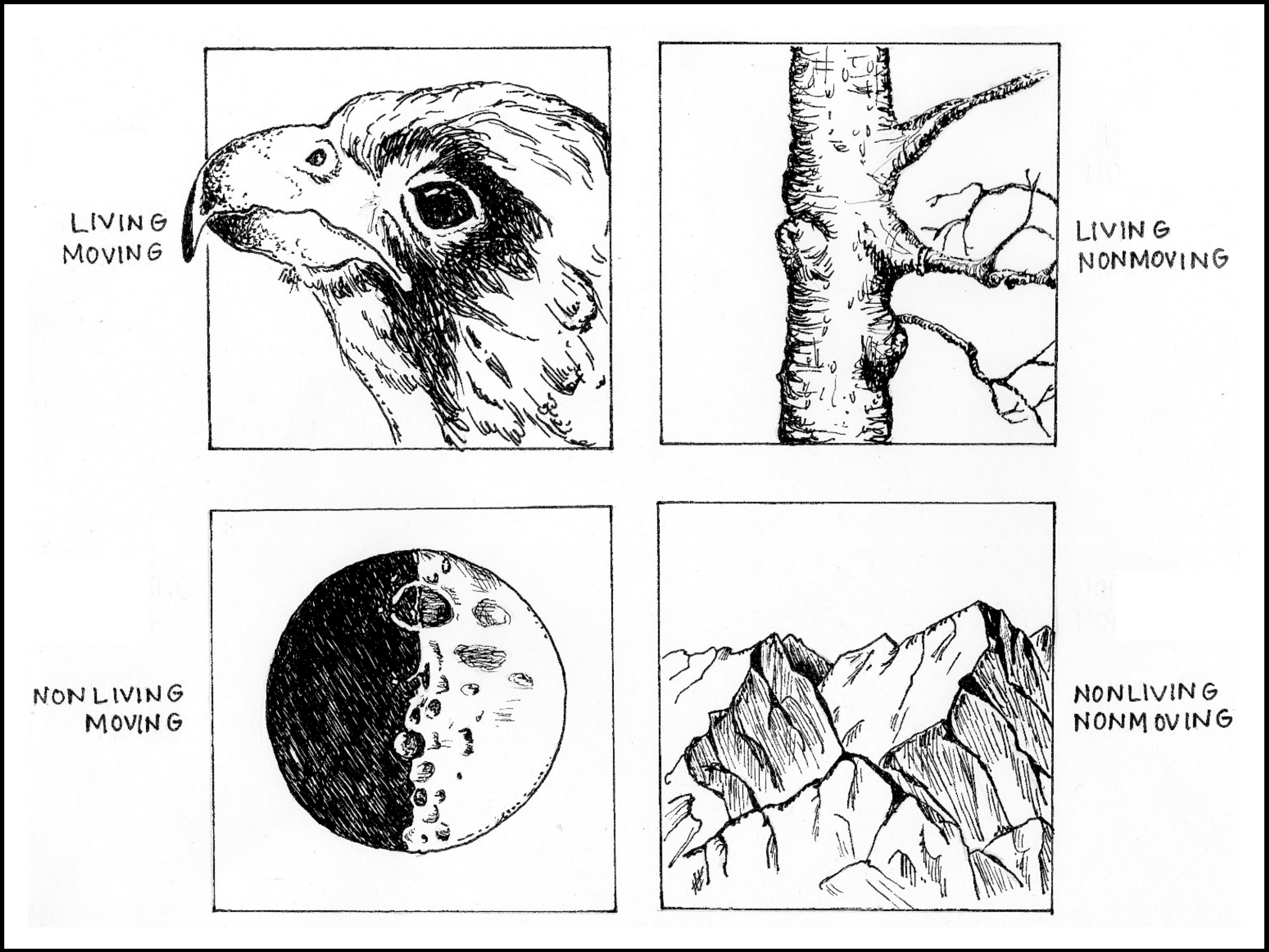
Use Images

Images are often better than text at conveying materials, procedures, or examples.

Use Images



Use Images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Use Your Memory

Your *talk* is the presentation, not your slides/poster.

Treat your slides/poster as an outline (a shared outline).

Be Objective

Talk about the research, not about you.

Explain why the research is of *general interest* and how it informs *our understanding* of the topic.

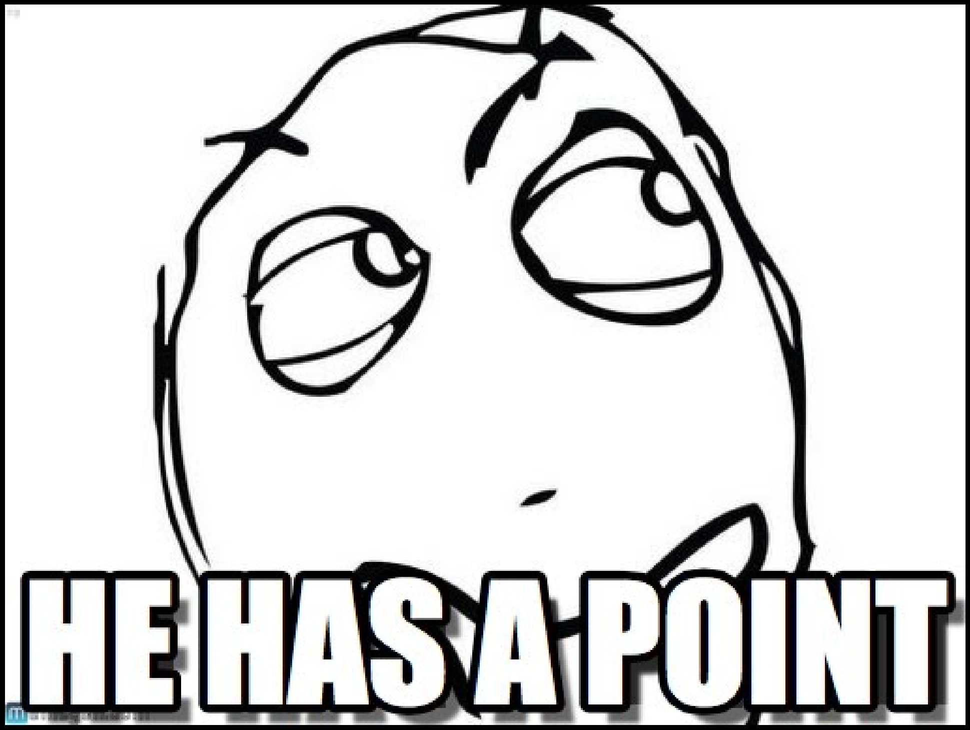
Be Succinct

When presenting your findings, present only those:

(a) Motivated at the beginning of the talk.
(b) Interpreted at the end of the talk.

The same goes for prior research; present only those studies that directly bears on yours.

Be Persuasive



Don’t just present facts (“this is what others did, this is what I did”); present an *argument*.

Use your findings to persuade the audience of some claim.

Be Conclusive

Do not just summarize your findings; draw *conclusions* from your findings.

Explain how they inform our understanding of the causes or consequences of the phenomenon of interest.

Practice, Practice, Practice

Practice with friends, lab mates, area group members.

You'll identify:

(a) Places where you need to add material.

(b) Places where you need to slow down.