

PGRP

Outreach and Social Science



Troy Hall

Forest Ecosystems & Society

Jay Well

Science and Math Investigative Learning Experience (SMILE)

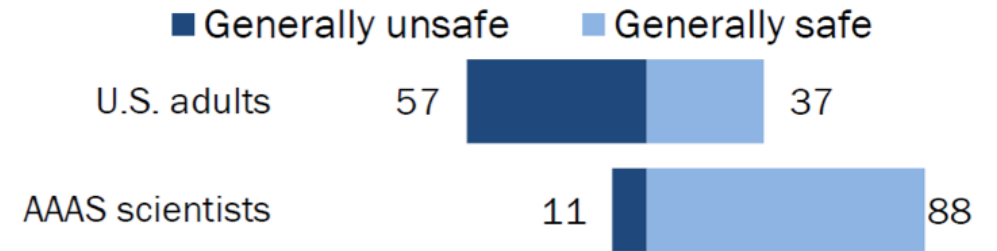
January 26, 2018

Social context

- ↓ public scientific literacy +
↑ science complexity
- ↑ gaps between scientific and public understandings
- Risk that policy is driven by simplistic understandings of issues based on incomplete or one-sided messages

Wide Differences Between Public and Scientists on Safety of GM Foods

% of each group saying it is generally safe or unsafe to eat genetically modified foods



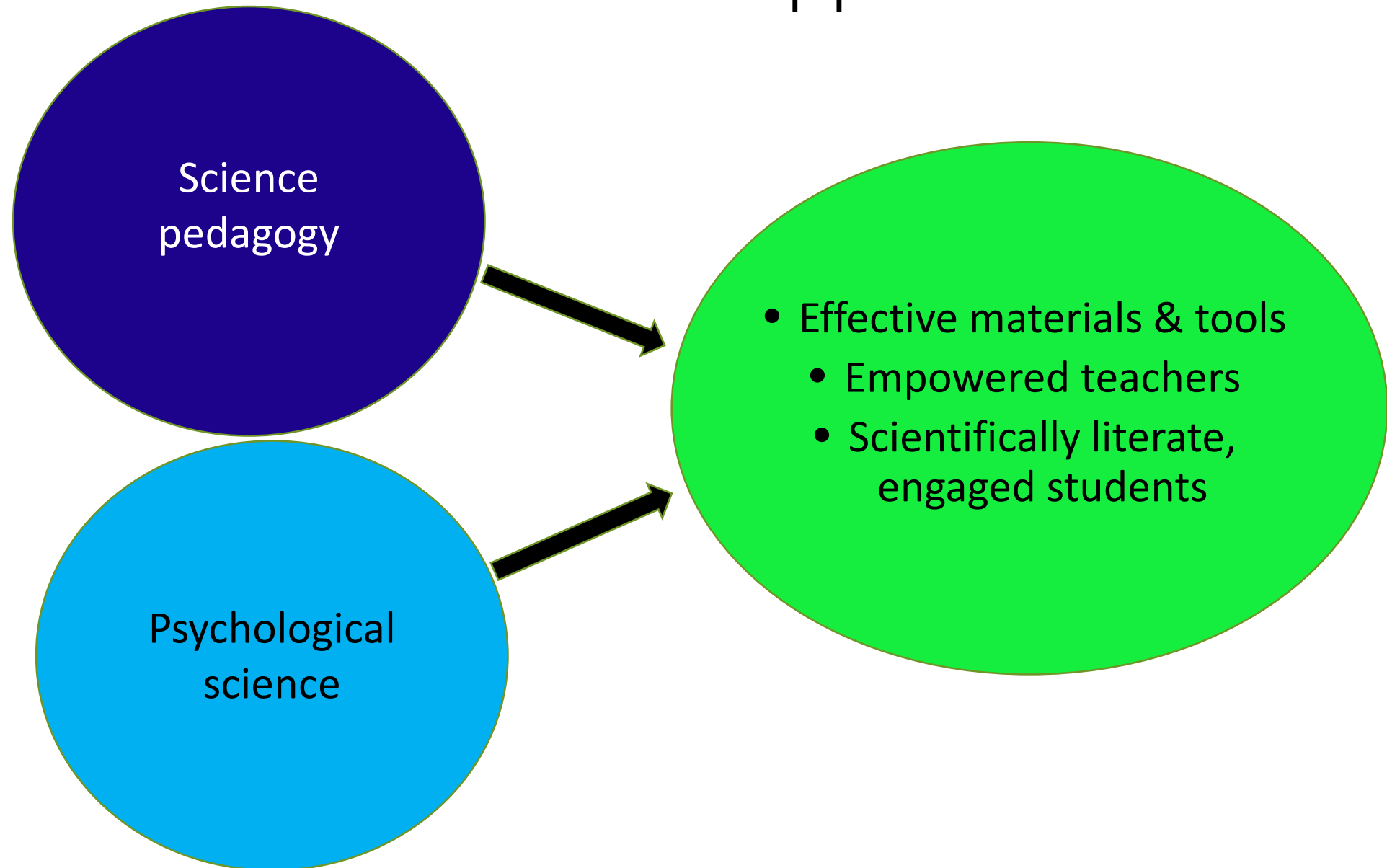
Pew Research Center. 2015.

Our Specific Goals

- Increase teachers' content area knowledge, confidence and access to materials for teaching about genetics in society (emphasis on GMO crops)
- Increase learners' abilities
 - to think critically and reflectively
 - to apply science to address complex socio-scientific problems



Our approach



In-depth look at the psychological science

- Guided by frameworks of
 - Epistemic cognition
 - Motivated reasoning
- Explore what factors contribute to cognitive complexity
- Understand whether and how well-designed case studies increase cognitive complexity

Sinatra, G. M., Kienhues, D., & Hofer, B. K. (2014). Addressing challenges to public understanding of science: Epistemic cognition, motivated reasoning, and conceptual change. Educational Psychologist, 49(2), 123-138.



In-depth look at the psychological science

Cognitions

“GMOs are scary”

“GMOs can help alleviate hunger”

“I don't like GMOs”

In-depth look at the psychological science

Cognitions



Naturalnews.com

... have different sources



Find out why this spud's for you at gmoanswers.com.

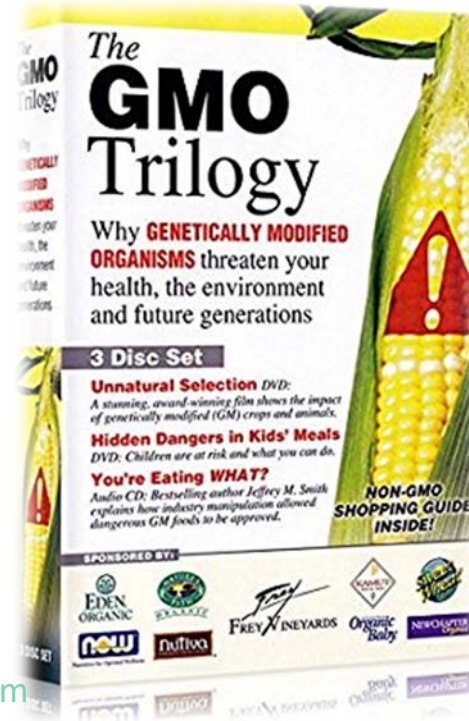


Flaxen saxon

... include emotions



Parentcenterhub.org

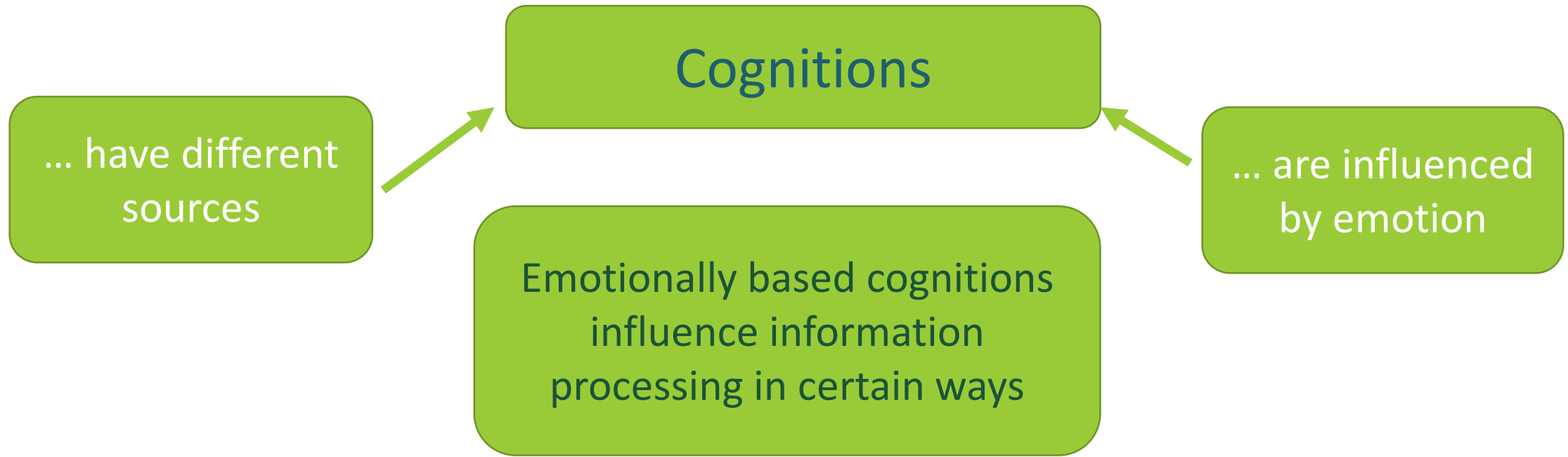


Amazon.com

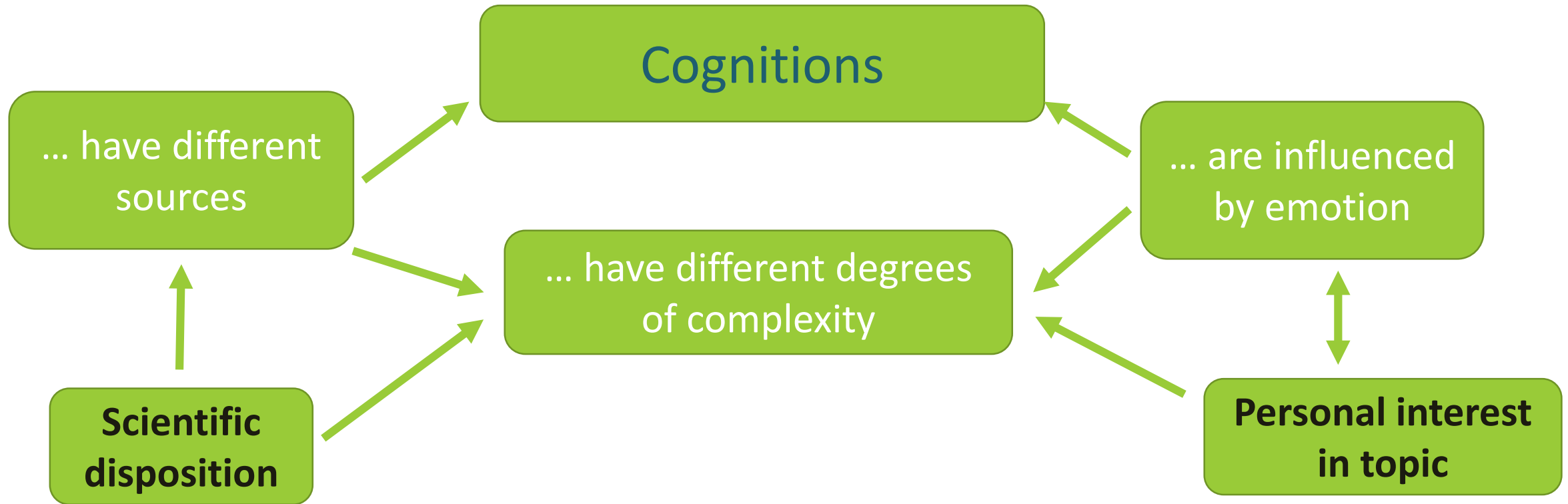


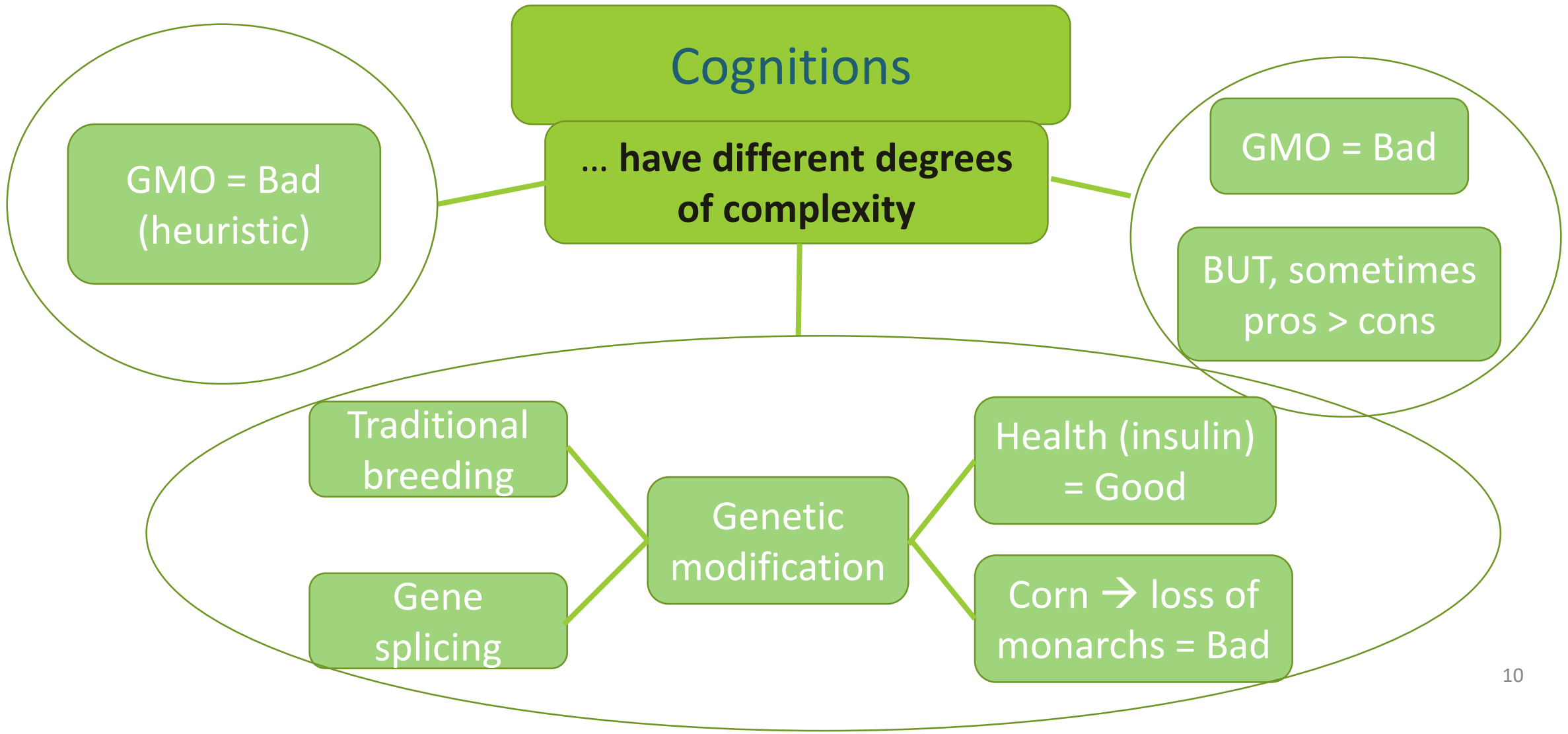
Naturalnews.com

In-depth look at the psychological science



In-depth look at the psychological science





Case studies

- Designed to promote open-minded processing
- Seek to increase cognitive complexity



Our aspiration

- Help teachers convey current, potentially controversial science in a non-biased way
 - Develop engaging case studies related to genetic technology
- Cultivate an orientation toward and skills for learning about dynamic science
 - Help students recognize their own cognitive short-cuts and identify what is valid information
 - Empower students to make sense of science, use science to make good decisions for selves

We look forward to working with you to help us develop and adapt materials to meet the needs of **your** students and **your** interests

