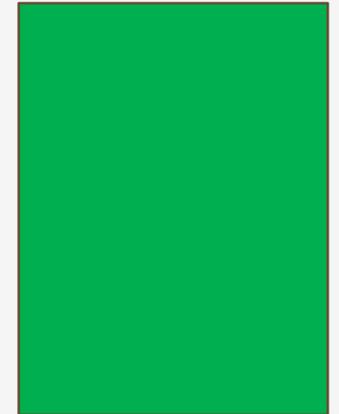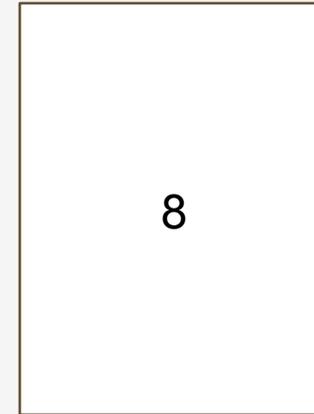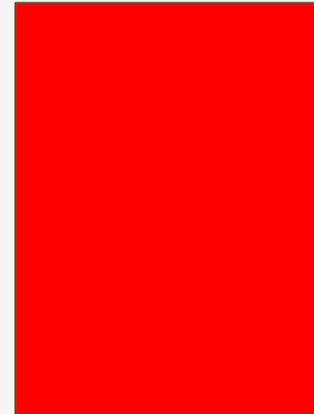# *EDUCATION BY ARGUMENT*

Ashley Squires, Assistant Professor and Director of the Writing and Communication Center, New Economic School, November 2016

Wason Selection Task

Which two cards must be turned over to test the idea that if a card shows an even number on one face, then its opposite face is red?

3		8	

Confirmation Bias

The tendency to seek to confirm hypotheses rather than to falsify them.

COGNITIVE BIAS CODEX

What Should We Remember?

We store memories differently based on how they were experienced

We reduce events and lists to their key elements

We discard specifics to form generalities

We edit and reinforce some memories after the fact

We favor simple-looking options and complete information over complex, ambiguous options

To avoid mistakes, we aim to preserve autonomy and group status, and avoid irreversible decisions

To get things done, we tend to complete things we've invested time & energy in

To stay focused, we favor the immediate, relatable thing in front of us

Need To Act Fast

To act, we must be confident we can make an impact and feel what we do is important

We project our current mindset and assumptions onto the past and future

We think we know what other people are thinking

We simplify probabilities and numbers to make them easier to think about

Not Enough Meaning

We imagine things and people we're familiar with or fond of as better

We fill in characteristics from stereotypes, generalities, and prior histories

We tend to find stories and patterns even when looking at sparse data

We notice flaws in others more easily than than we notice flaws in ourselves

We are drawn to details that confirm our own existing beliefs

Too Much Information

We notice when something has changed

Bizarre, funny, visually-striking, or anthropomorphic things stick out more than non-bizarre/unfunny things

We notice things already primed in memory or repeated often

Overview of this talk

- I – Sperber & Mercier's argumentative theory of reasoning

- II – Implications for the teaching of critical thinking

- III – Applications in the writing classroom and the writing center

ARGUMENTS AND REASON

Classical View of Reason

Source: Mercier, H. and Sperber, D. (2011). Why do humans reason? Arguments for an argumentative theory." *Behavioral and Brain Sciences* 34, 57-111.

Reason exists to…

Enhance individual cognition

Improve individual decision-making

Lead to better ideas, beliefs, and actions

Problems with the classical view

- Motivated Reasoning
- Attitude polarization
- Belief perseverance
- Reason-based choice

The Argumentative Function of Reasoning

"The **emergence of reasoning** is best understood within the framework of the evolution of **human communication**. Reasoning enables people to **exchange arguments** that, on the whole, **make communication more reliable** and hence more advantageous. The main function of reasoning, we claim, is *argumentative.*"

The Argumentative Function of Reasoning

Humans reason in order to…

- **Create arguments**
- **Justify our beliefs and decisions to others**
- **Evaluate arguments made by others**

Reasoning in Communication

Epistemic vigilance

Cognitive division of labor

Division of Cognitive Labor

"When a group has to solve a problem, it is much more efficient if each individual looks mostly for arguments supporting a given solution. **They can then present these arguments to the group, to be tested by the other members.** This method will work as long as people can be swayed by good arguments …. This joint dialogic approach is much more efficient than one in which each individual on his or her own has to examine all possible solutions carefully."

Deliberation and Group Learning

Reasoning is at its best in the context of **group learning**, but only under conditions of **diversity**.

Deliberation and Group Learning

Direct **LESS** effort at **fixing individual reason**

Direct **MORE** at **creating optimal – social – conditions** for it

IMPLICATIONS FOR CRITICAL THINKING

Some Definitions of Critical Thinking

- "Critical thinking examines assumptions, discerns hidden values, evaluates evidence, and assesses conclusions" (Myers 2003).

- "Involving the ability to explore a problem, question, or situation; integrate all the available information about it; arrive a solution or hypothesis; and justify one's position." (Warnick & Inch 1994)

- "That mode of thinking - about any subject, content, or problem - in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them" (Paul & Elder 2001).

- "Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from or generated by: observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (Scriven & Paul 2003).

Educator Definitions

- A rhetoric course at MIT purports to use, "the study of rhetoric as an opportunity to offer instruction in critical thinking. Through extensive writing and speaking assignments, students will develop their abilities to **analyze texts** of all kinds and to **generate original and incisive ideas** of their own."

- A professor of nuclear engineering at the same institution teaches critical thinking by having his students **debunk** junk science.

- The University College of London's Personal and Professional Development Office defines critical thinking as the ability "to **consider claims** made against the evidence available and to **develop one's own view systematically**."

Educator Definitions

The Imperial College of London's "Success Guide" for Master's students says that, "A 'critical thinker' does **not blindly accept** a theory, argument or opinion until they have **verified the data** or hypothesis on which it is based. You should **not be mesmerised** by star professors, writers, publications and organisations. A postgraduate academic needs to be able to **assess information** and opinion thoroughly and analytically to determine whether it is accurate and believable. This **skill can mastered** with effort and practice."

Does Reasoning Need to be Taught?

"People can engage in some types of critical thinking without training, but even with extensive training, they will sometimes fail to think critically" (Willingham, 2007, 15).

Stereotypes about Critical Thinking

"UCL recognises that international students come from a variety of academic backgrounds and pedagogic cultures, and that **some may have received little training in critical thinking**. Therefore, the UPC critical thinking entrance test does not assess the candidates' level of critical thinking, rather, it aims to identify and select **candidates who have disposition in thinking critically**. These are students who are **interested in engaging intellectually with ideas** and **willing to develop and support their own arguments** – instead of reproducing factual knowledge. This is an approach to study and knowledge that is important to be successful on the UPC."

Questioning Assumptions

Why do we value independent thought?

Does intellectual independence actually lead to better beliefs?

DELIBERATIVE PEDAGOGY

Overall philosophy

A **critical thinking** pedagogy rooted in a **classical**, **individualistic** view of reason emphasizes reflection, self-examination, and independence of thought. A **deliberative** pedagogy rooted in a **communicative** understanding of reason might emphasize the need to construct arguments that can be **evaluated by others**, the **willingness to revise** one's conclusions or presentations **in response to feedback**, and socialization to norms of **intellectual accountability**.

Importance of Accountability

"Individuals thinking on their own without benefitting from the input of others can assess only their own hypotheses, but in doing so, they are both judge and party, or rather judge and advocate, and **this is not an optimal stance for pursuing the truth**" (Sperber & Mercier, 2011, 72).

Pitfalls of Epistemic Self-Monitoring

And individual could "decide to generate a variety of hypotheses in answer to some question and then evaluate them one by one, on the model of Sherlock Holmes … More realistically, individuals may develop some limited ability to distance themselves from their own opinion, to consider alternatives and thereby become more objective. Presumably this is what the 10% or so of people who pass the standard Wason selection task do. **But this is an acquired skill** and involves exercising some **imperfect control** over a natural disposition that spontaneously pulls in a different direction" (72).

Epistemic Success & Epistemic Luck

"Epistemic success may depend to a significant extent on what philosophers have dubbed **epistemic luck** … motivated reasoning may have pushed Darwin to focus obsessively on the idea of natural selection and explore all possible supporting arguments and consequences. But, for one Darwin, how many Paleys " (72)
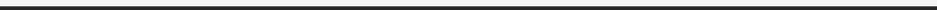
Recommendations

Argumentative Motivations

Place classroom tasks in an argumentative context.

Have students persuade others.

Have students confront challenges to their ideas

Example

"Analysis" is not enough

- Students will be better at picking apart arguments and empirical studies that have conclusions they do not like

- While ability to analyze and evaluate arguments is an important part of critical thinking, these **evaluations must be recognized as arguments** in and of themselves.

- Students **must be required to defend their evaluative assertions** about other arguments with reasons that would be acceptable to an interlocutor.

Recommendations

Prepare your class for deliberation

Students should be...

- Well-informed about the given topic

- Motivated to deliberate about it

- Comfortable expressing disagreement

In the Writing Center

Writing centers, after all, are designed around the idea of going to a place to discuss the effectiveness of a piece of writing before you consider it "finished."

This works best if…

- WCs are places where people can come to **discuss their ideas** and not merely have their grammar checked

- Writing tutors **behave more like colleagues** than like teachers

Final words

The most valuable form of academic socialization we can provide is in inculcating **the habit of seeking accountability for ideas** and how they are expressed and **responding thoughtfully to feedback.**

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