Ambiguity

I&E Basics

Battle 4 - And the winner is...

Last week's test

— All passed!
— No impact on final evaluation
— *If* you had failed, you would have gotten one absence… but all passed.

Exam mode - Attending

— Battles (up to 10 points)
  - Group assignment, in-class work plus 10 pages report
  - More on this later
— Blended assignments/quizzes (up to 5 points) (TBA)
— Personal essay (up to 15+2 points)
  - Individual report ~5 pages
  - Topic can be either taken from a list
  - …or proposed originally (in which case, you might get up to 2 extra points)
— Top-quality essays will go to a book for next year

Evaluation Criteria

— Correctness
— Completeness
— Exposition
— Argumentation

No "weighting" of these criteria... But let's discuss.

Summary - Last time…

— Environment theory
  - Certainty
  - Risk
  - Uncertainty
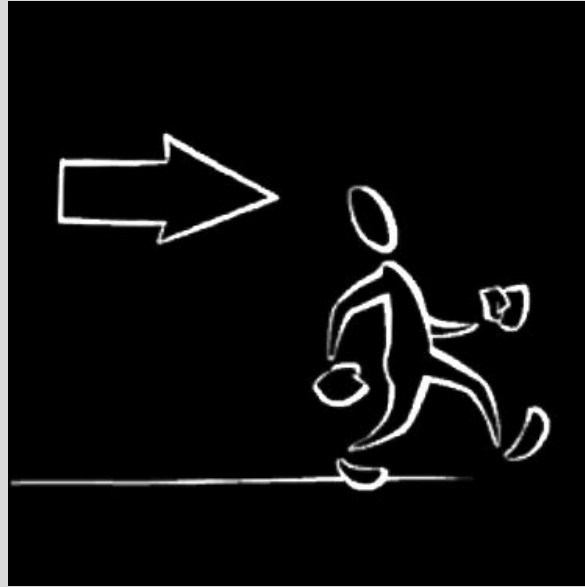 - Weak Ambiguity
  - Strong Ambiguity

Certainty

"See? It just works."

Some paths are straight forward.

Image and quote by Alexander Bruce, Antichamber (2013)

Risk

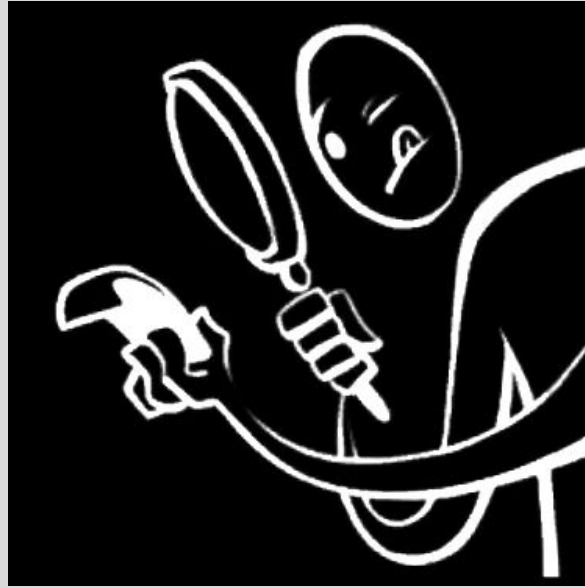"60% of the times, it works every time."

A choice may be as simple as going left or going right.

Image and quote by Alexander Bruce, Antichamber (2013)

Uncertainty

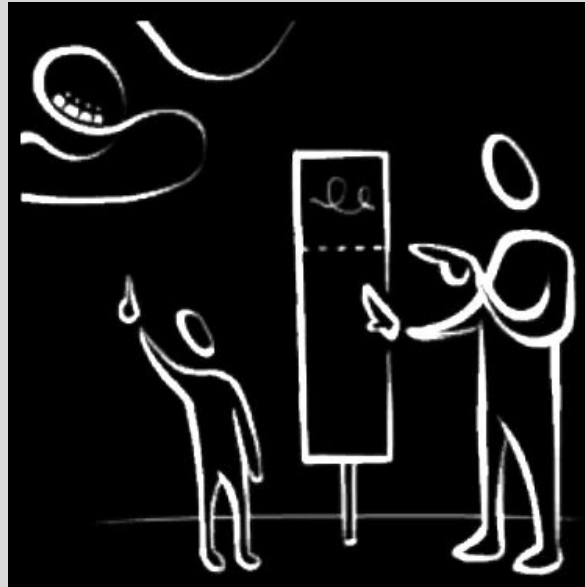"The truth is out there… It's up to you to find it."

The solution to a problem may just require
a more thorough look at it.

Image and quote by Alexander Bruce, Antichamber (2013)

Weak Ambiguity

"I think you should ask the other office. Maybe."

Some hurdles are too high to jump over.

Strong Ambiguity

A path may not be right or wrong. It may just be different.

Image and quote by Alexander Bruce, Antichamber (2013)

Today…

— We're "sampling" different fields of ambiguity…
  - Battles
  - Sensemaking
  - Science in Action
  - Black Swans

The battles case: ambiguity in the class

- Innovations happens in two ways
- Convergent vs Divergent
  - e.g. exploration/explotation (March 1991); single loop/double loop (Argyris & Shön 1992); incremental/radical innovation (Nonaka 1994); normal/paradigmatic science (Kuhn 1962); perspective making/taking (Boland & Tenkasi 1995)...
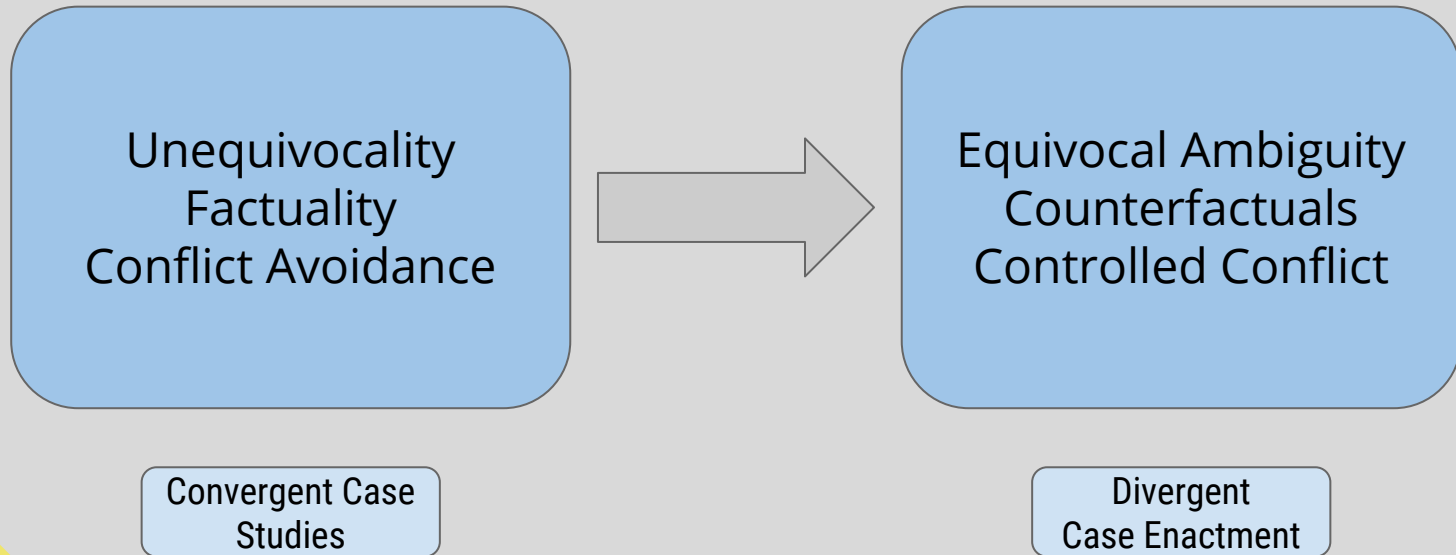- ...no class methodologies for divergent learning

In class	Case Study Team Working	**NO EVIDENCE**
Out of class	Incremental Innovation	Radical Innovation
	Convergent dynamics	Divergent dynamics

Why?

Creating Opposites

Unequivocality
Factuality
Conflict Avoidance

Equivocal Ambiguity
Counterfactuals
Controlled Conflict

Convergent Case Studies

Divergent Case Enactment

Why?

Janus Bifrons (more on this later…)

given the current state of the world, how did we get here?

Convergent Case Studies
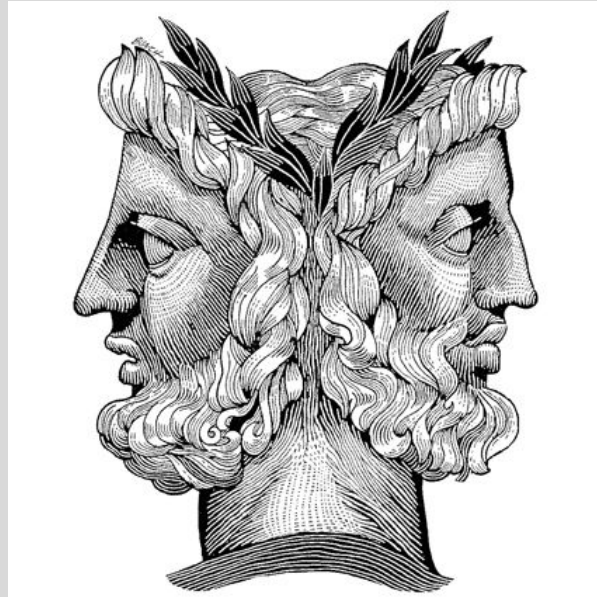
GIVEN AN ALTERNATE BEGINNING, HOW COULD IT END?

Divergent Case Enactment

Why?

Tech Battles

Situation of binary choice $\rightarrow$ Controlled Conflict $\rightarrow$ Reconciliation

Goal: Make questions, create a plausible ending

How does this relate to I&E?

Sensemaking (Weick)

- Tend to occur when the current state of the world is perceived to be different from the expected state of the world, or when there is no obvious way to engage the world...
- It is retrospective
- But also about presumption
- And it is about "what to do next"

Sensemaking (Weick)

- Is not about "the" truth or "the" story
- But about continued redrafting of an emerging reality
- To be more comprehensive
- Incorporates more data and
- Become more resilient to criticism
- What is plausible for one groups could be not plausible for another (e.g. teachers vs. students)

"The pursuit of accuracy to get it right"

How does this relate to I&E?

Latour - Science in action

— Published 1987, heavily influenced by Callon
— Main metaphor: Janus Bifrons (see above)
— Key points
  - "Science" is made of not only technical research but also (and mostly) of social links, interactions, enrolments...
  - Paradigmatic changes can be found by exploring controversies (see also Kuhn)

First principle

The fate of facts and machines is in later users' hands; their qualities are thus a consequence, not a cause, of a collective action.

First rule of method

We study science in action and not ready made science or technology; to do so, we either arrive before the facts and machines are blackboxed or we follow the controversies that reopen them.

Black boxes

— Created (and nested) by scientists to make it more difficult to falsify a theory

— Why do they do this?

Black Boxes - Examples

Scientific Literature

— How do citations work?
— Why is an article cited often?
— Why is an article never cited?

Second principle

Scientists and engineers speak in the name of new allies that they have shaped and enrolled; representatives among other representatives, they add these unexpected resources to tip the balance of force in their favour.

Second rule of method

To determine the objectivity or subjectivity of a claim, the efficiency or perfection of a mechanism, we do not look for their intrinsic qualities but at all the transformations they undergo later in the hands of others.

How does this relate to I&E?

Black Swans

— "The Black Swan" N. N. Taleb 2007
— Large scale, unexpected events
— Cause: the world became too complex to understand
— Improperly managing black swans causes potentially catastrophic results

Black Swans - The name

— Say you always observed white swans and made the inductive generalization that all swans are white...
— What happens if you observe a black swan?

Options

1. A black swan is not a swan
2. We are observing an outlier
3. Our definition is wrong..?

"Mediocristan" vs "Extremistan"

Mediocristan
— Normally distributed
— Good for "natural" parameters
— High predictability
— Uncertainty-based
— All swans are white

Extremistan
— Peaked distributions
— Good for "artificial" phenomena
— Low predictability
— Ambiguity-based
— Black swans can exist

The fallacy of induction

— Hasty inductive generalization might lead to false conclusions
— Russell's Chicken
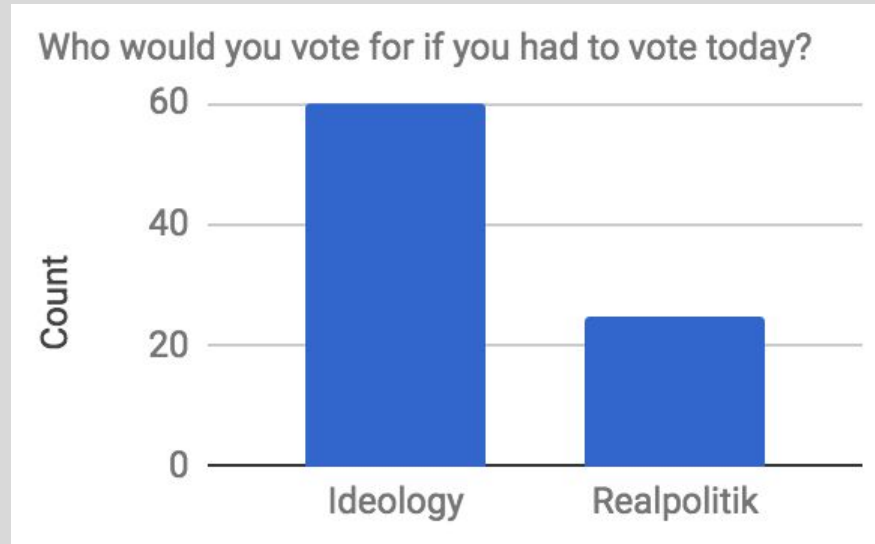
Example of black swans

Brexit, Trump... Others?

How does this relate to I&E?

Battle 6 - Ideology vs Realpolitik

Why did we do this?

Final notice

— Groups for battle 6 → Please stop 10'

References

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- Latour, Bruno. Science in action: How to follow scientists and engineers through society. Harvard university press, 1987.

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