



Workshop on Abstracts Purpose and Polish

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Messages

You can master
reading/writing abstracts by:
reverse engineering
purpose storylines &
acquiring **polishing** skills.

**IWAC:
teachable
skill**

& You must!

If you are what you do;
then you are now or will be a
writer

Prepare?

- If you did not then it's like

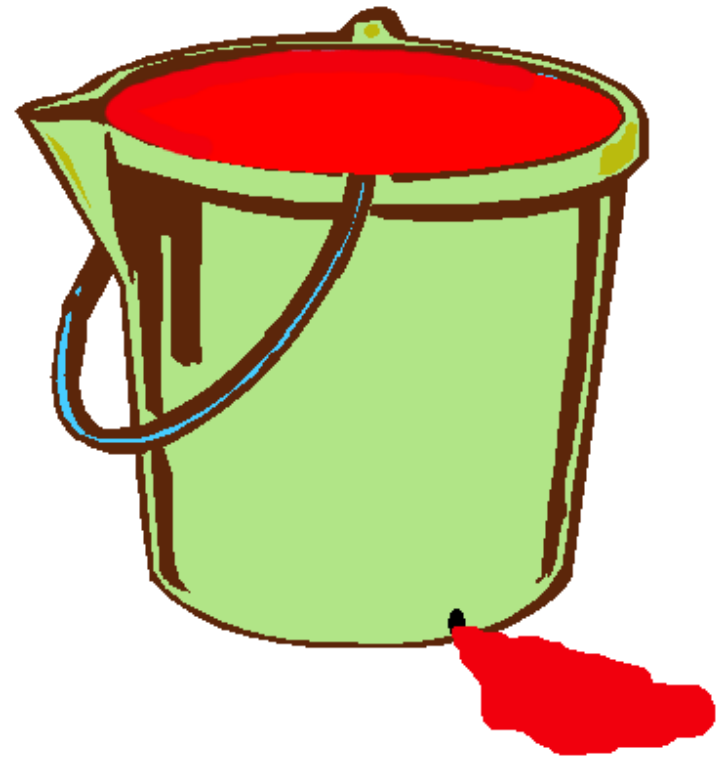
watching an exercise video

(while snacking)

**IWAC:
handout**

Why should you care?

- **If:**
You can't/won't **communicate**
- **Then:**
You have a hole in
your bucket
- **So:**
Your career is at risk!





“Joyful Struggle” (1/3)

- Not Struggling?

Not a researcher/scholar

- Not Joyful?

Wrong field

- It's not “work”

need something to say, &
need to say it well

Why do bridges look alike?



- We learn and reuse **patterns**
- Don't be interesting to a doctor!

Acquiring Skills about Abstracts

- **Read abstract writing guidelines**

- Several follow; no magic

← not surprising

- **Reverse engineer**

- Relevant venues

- **Purpose** [storyline]

- **Polish** [squeeze]

- *Dozens* of times

← *good structure is un-noticed*

- **Judge → Write**

← **territory, not just route**

<http://research.berkeley.edu/ucday/abstract.html>

- **Motivation/problem statement:** Why do we care about the problem? What practical, scientific, theoretical or artistic **gap** is your research filling?
- **Methods/procedure/approach:** What did you actually do to get your results? (e.g. analyzed 3 novels, completed a series of 5 oil paintings, interviewed 17 students)
- **Results/findings/product:** As a result of completing the above procedure, what did you learn/invent/create?
- **Conclusion/implications:** What are the larger implications of your findings, especially for the problem/gap identified in step 1?

Abstract Purpose

- “Resources for Authors” <http://www.asce.org/Content.aspx?id=18107>

Your venue

1. contain the purpose of the work,
2. the scope of the effort,
3. the procedures used to execute the work
(if of special interest),
4. major findings, and
5. key conclusions.

Abstract Polish

- 150-175 words
- NOT: jargon, equations, figure callouts, tablecallouts, or reference citations
- Write for a general engineering audience (e.g., new graduate students) in **plain language**.

Journal of Environmental Engineering (3/3)

Style advice

- Active voice
- Direct statements [not “It should be noted that ...”]
- First person [“I”, “We”] ok
- ...

**IWAC:
“impedance
mismatch”**

Happiness is:

an exercise interlude



**Author
in the room**

IWAC Handout Exercise:

1. pithy purpose
[top or bottom sentence]

work with a partner

2. squeeze 10%-15%
[wordsmith out fat; cut lean meat]

3. repeat step 2
[choppy? lose the story?]

**content
neutral**

One Rough Storyline Template

- *** cares about Problem/Opportunity ***
- Others/conventional wisdom says ***
- We suspected *** and so did ***
[, *** and ***]
- We found ***
[, *** and ***] [but not ***]
- Therefore, *** impacts ***
[or: *** should ***]

IWAC:
pg 15

Grokking Purpose

- Goal: Find abstract storyliness
[and then **mimic** them]
 - Reverse engineer several dozen abstracts
read like a writer
 - State the purpose for each sentence
-
- Internalize patterns
 - Pick a pattern before you write
 - Write for an audience/venue

Spiraling out – Educate Yourself

- Lots of internet sites [writersdiet.com]
- Write Tight, William Brohaugh, 2007
- Revising Prose 5th ed., Richard Lanham, 2007 (youtube)

 **Curse of “is”/** (E-prime)
Pain of nominalizations

“Parametric Method” for Sentences

Lanham

1. Underline prepositions
2. Circle each “is” thing
(is, are, shall be, to be, was, has been, being, etc.)
3. Find the action: who’s kicking who
4. Put subject – simple active verb first
5. Start fast
6. Read aloud with emphasis and feeling

“Because fat in prose, as in our bodies, affects the shape more immediately than the meaning, a feeling for shape and emphasis constitutes our best weapon against wordiness.”

Lanham Lardy Examples

- This sentence is in need of a verb.
- Another activity that I would use my computer for is the wordprocessing software package
- Pelicans may also be vulnerable to direct oiling but the lack of mortality data despite numerous spills in areas frequented by the species suggests that it practices avoidance

WORK: fix these

Trim

- This sentence needs a verb.
- I would use my computer for wordprocessing.
- Pelicans seem to survive oil spills by avoiding the oil.

Hidden action

Perception

Is the process

Of extracting information

From stimulation emanating

From the objects, places, and events

In the world

Around us.

IWAC notes (1/2)

- author nixed word choice
 - not totally content neutral
 - editors nix passive;
reviewers nix active
-
- student:
“ah, now I get it”
 - easier teaching:
“Josh, you forgot impact”

IWAC notes (2/2)

- reverse engineering
reveals
good writing's transparent structure
-
- squeezing
induces
awareness [priority, decisions, ...]

Messages

You can master
reading/writing abstracts by
internalizing **purpose** storylines &
acquiring **polishing** skills.

You must.

IWAC:
teach!

CHANGE:
Will you work to
improve your writing skills?

This slide

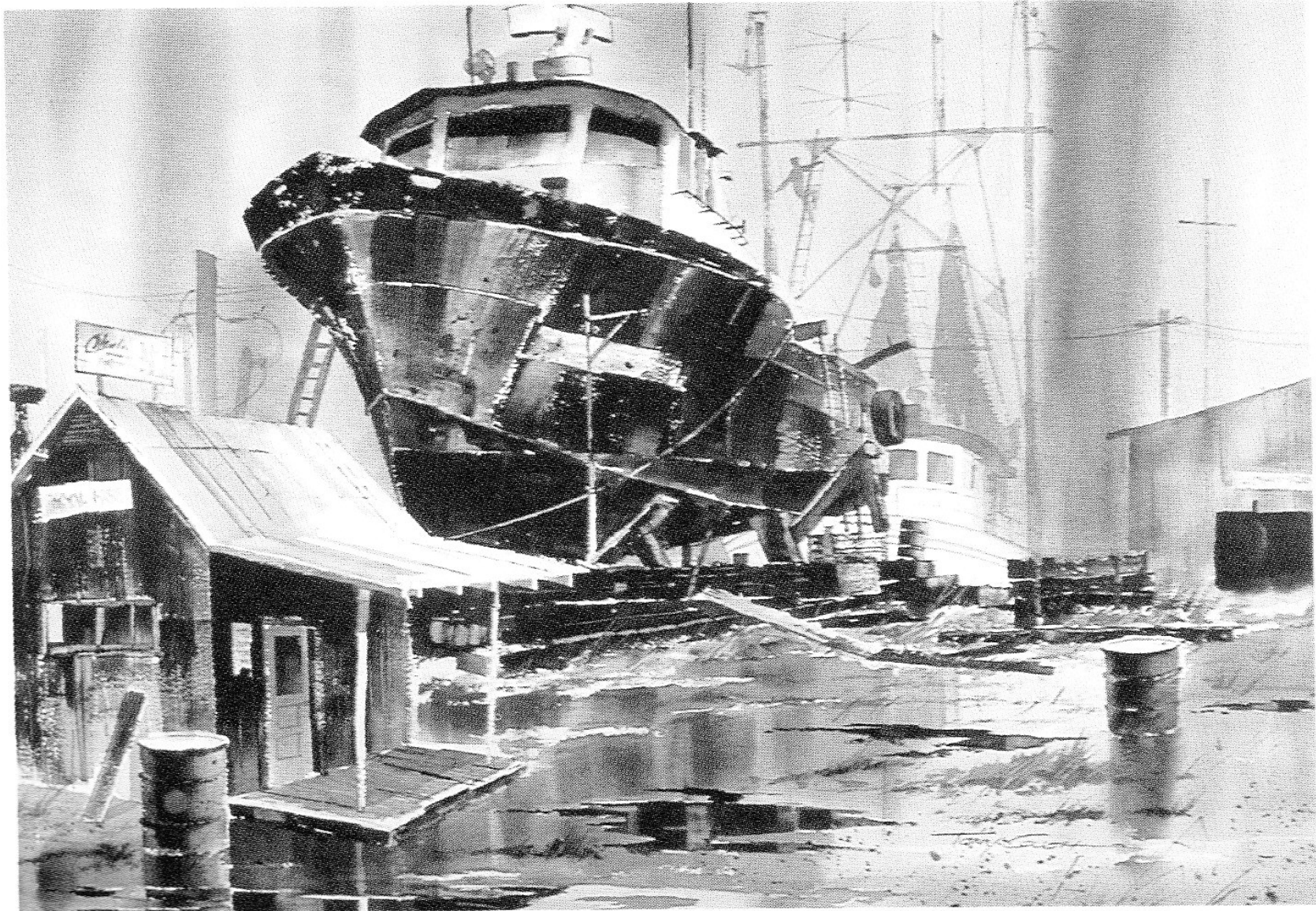
- Accidentally left blank

Advise using 1 draft method?

- Poorly organized/written draft
really hard to fix
- Critiquing sketches/figures/vocabulary
is work, but **much less**
- Little waste
- “Avalanche advising”
move pebbles, not boulders

One of the hardest things we do; do it better

What's wrong here?



Source:
Tony Couch

Experts in a field **see**, puppies don't



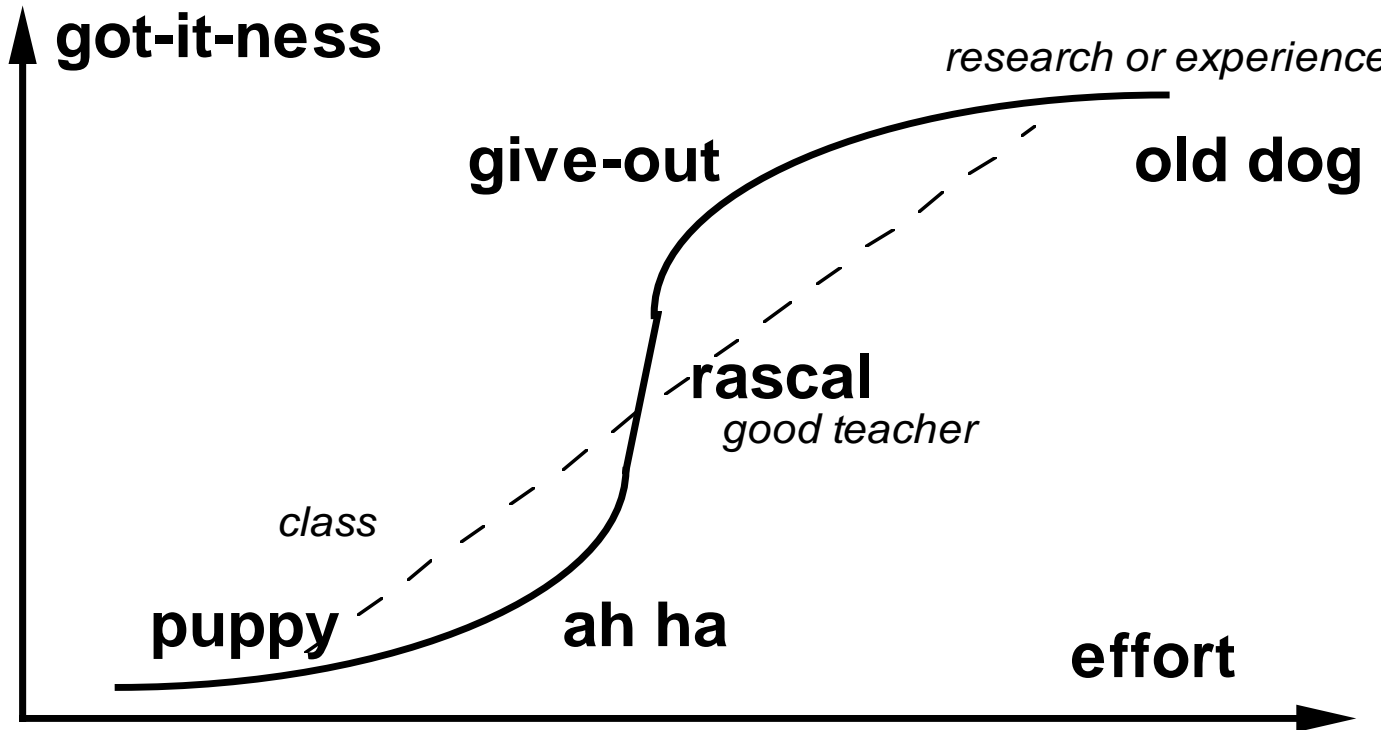
GOAL: Change how (each of) you see

Joyful Struggle (2/2)

- be like absent minded professors
 - abiding interest, intrinsic reward
- wake up thinking
- sad loss if no joy
- can lead to a job like mine
 - unlearn
 - it's a wonderful life

BUT: you need to
do it right

Joyful Struggle (3/2 😊)



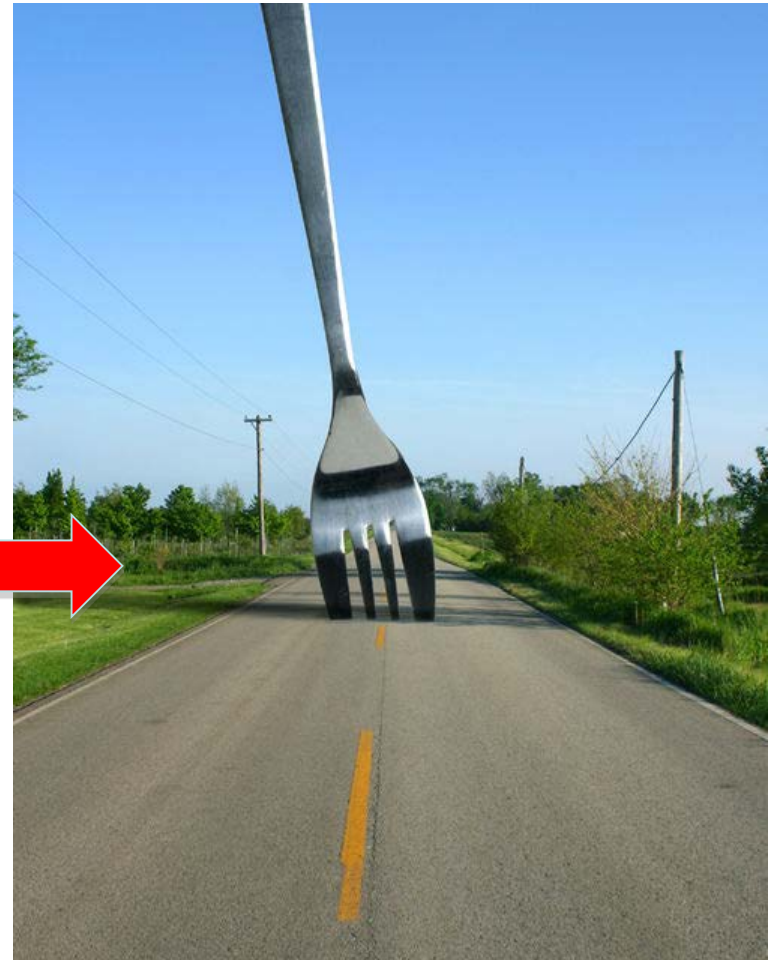
dashed line: learning things
solid line: acquiring skills

Today: Communication

- Abstract Purpose & Polish
- This is your workshop, so **ACT!**

- Might be a

Fork in the road



Fork

- **Change**

Spiral out
educate & practice

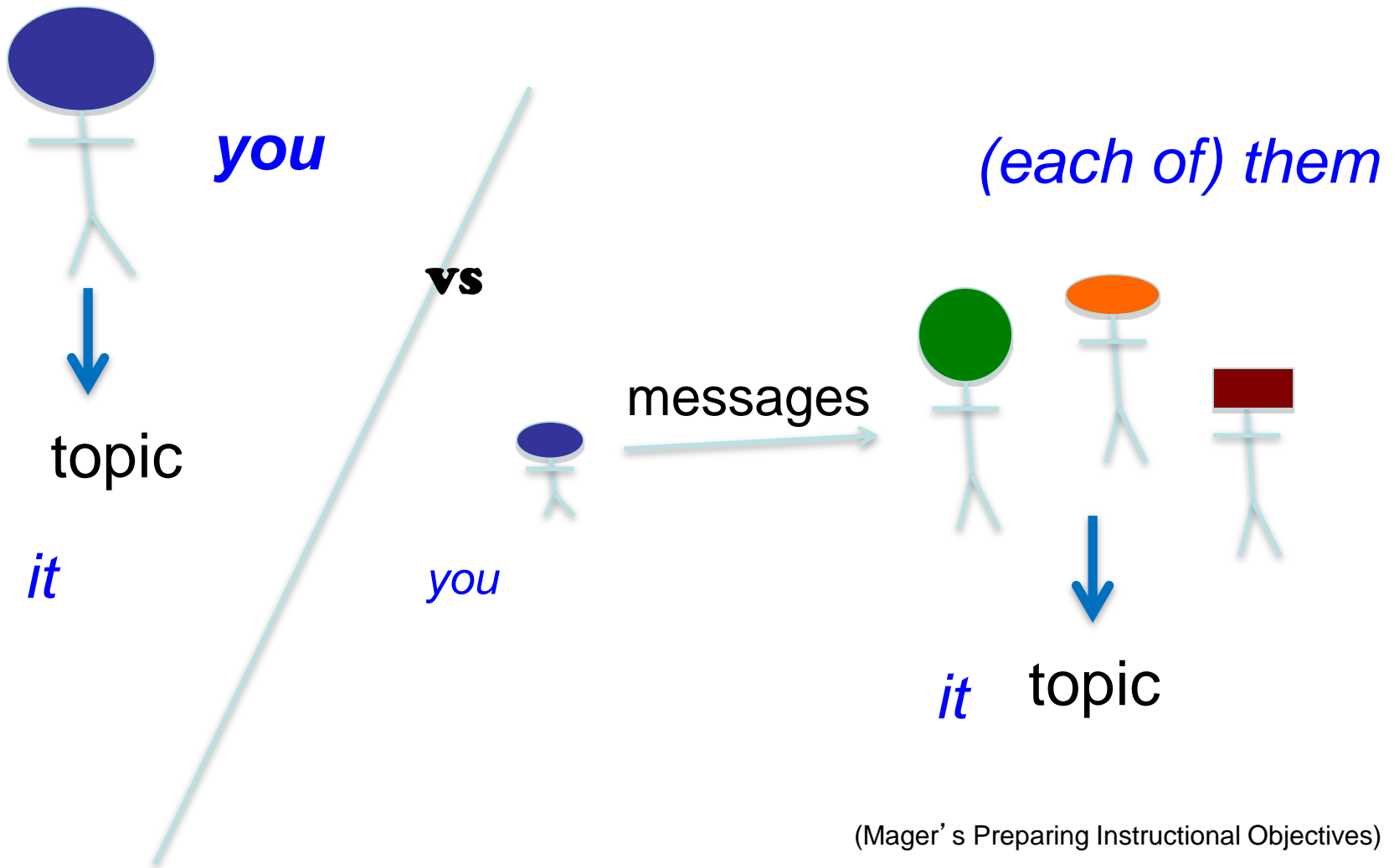
how you write and talk

- **Just begin**

awareness/framework/resources

Deliberately construct mental
models (J. Bruner)

Poor vs Good Communicator writer/speaker/teacher



Why listen to me?

- Teaching awards
- > 1K workshop attendees
- Content-neutral modeling book
- Research methods course
- ...

Thirds: 😞, 😐, 😊

-
- BUT:
it's about YOU, not me



<http://www.ece.cmu.edu/~koopman/essays/abstract.html>

- **Motivation:** *Why do we care* about the problem and the results? If the problem isn't obviously "interesting" it might be better to put motivation first; but if your work is incremental progress on a problem that is widely recognized as important, then it is probably better to put the problem statement first to indicate which piece of the larger problem you are breaking off to work on. This section should include the importance of your work, the difficulty of the area, and the impact it might have if successful.
- **Problem statement:** What *problem* are you trying to solve? What is the *scope* of your work (a generalized approach, or for a specific situation)? Be careful not to use too much jargon. In some cases it is appropriate to put the problem statement before the motivation, but usually this only works if most readers already understand why the problem is important.
- **Approach:** *How did you go about solving* or making progress on the problem? Did you use simulation, analytic models, prototype construction, or analysis of field data for an actual product? What was the *extent* of your work (did you look at one application program or a hundred programs in twenty different programming languages?) What important *variables* did you control, ignore, or measure?
- **Results:** *What's the answer?* Specifically, most good computer architecture papers conclude that something is so many percent faster, cheaper, smaller, or otherwise better than something else. Put the result there, in numbers. Avoid vague, hand-waving results such as "very", "small", or "significant." If you must be vague, you are only given license to do so when you can talk about orders-of-magnitude improvement. There is a tension here in that you should not provide numbers that can be easily misinterpreted, but on the other hand you don't have room for all the caveats.
- **Conclusions:** *What are the implications* of your answer? Is it going to change the world (unlikely), be a significant "win", be a nice hack, or simply serve as a road sign indicating that this path is a waste of time (all of the previous results are useful). Are your results *general*, potentially generalizable, or specific to a particular case?

<http://writing2.richmond.edu/training/project/biology/abslit.html>

Why it was done and what is the problem being addressed? These two sections can be grouped together into one brief statement summarizing why the experiment was performed in the first place? What was the question trying to be answered? Science is an exploration for truth. It is all about curiosity and answering questions to find out why and how things work. The scientific method is a clear example of this; first state a problem or question and then try to determine the answer. This section is the statement of the original problem. It is the reason behind why an experiment is being done. This should not include many details, rather it should be a simple statement. It can even be stated in one or two sentences at the most.

What did you do? This part of the abstract states what was done to try to answer the question proposed. It should in no way be very detailed. It contains a brief outline of what was done, highlighting only crucial steps. It is the materials and methods section of your abstract, but it is only one or two sentences in length. It is a description of *how* you decided to approach the problem.

What did you find out? In other words, what did all of your hard work and preparation tell you about the question you set out to answer. This contains only the crucial results obtained. The crucial results are those that are necessary to answer your original question posed. Without these results, the experiment would have been useless. The results should be stated briefly and should not be explained; they should only be mentioned. It is very similar to the results section of your paper, but it highlights only pertinent results used to draw conclusions. An average length for this section is two or three sentences at the most. This number can vary however, depending on the complexity of the experiment, and so these length guides are just that, guides, not rules.

Conclusions? This is the end of your abstract, directly hinging on the results obtained. This is the "so what" part of your experiment. "So what" refers to what the results mean in the long run. You need not include how you drew your conclusions, only the final conclusion. This should directly follow the results so the reader knows what results led to what conclusions. This is the equivalent to the discussion part of the paper, but again, like the rest of the abstract, it needs to be stated briefly and succinctly. You do not need to explain how you deduced the conclusion from the results obtained, only the end conclusions. After you have stated this, the abstract is complete.