Writing - Basic Style

Main goals of style:

1. **Clarity**. Accurately communicate what you have in mind.
   (With the appropriate level of precision.)
2. **Conciseness**. Do this with the fewest words possible.
   (I.e., maximize the signal-to-noise ratio.)

These are the two main dimensions in terms of writing
- basis of the analysis on style

1. Omit needless words.

Use whatever words are necessary. No more.
Each word should do something important.

Thus,

`…the reason why is that…`	**NO**
-> **`…because…`**	**YES**

So, get into this habit (both as writer and analyst):

⇒ Ask yourself if something is *really needed*
- if it were removed, ***what would happen*?**

2. Avoid fancy words and jargon.

Use a complexity *no higher than necessary.*

Use a precision *no higher than necessary*
(e.g., to avoid confusion with other things being discussed)

Thus,

`He established visual contact with the ungulate.` **NO**

-> **`He saw the cow.`** **YES**

So, get into this habit (both as writer and analyst):

⇒ Ask yourself if a baroque term is *really needed*

- If a simpler term were used, ***what would happen*?**

Note: Similar goals for visualization

1. **Clarity**: Make sure information is conveyed accurately.
2. **Conciseness**: Minimize the ink-to-data ratio.
   (Nowadays: the perceptual-structure-to-data ratio)

Writing – Advanced Style (Storytelling)

(Based on "Houston, We Have a Narrative", Randy Olson)

A. Current Practice

Most presentations in science (written and verbal) are listings of facts:

- "I found A, and B, and C, and…"
- "AND, AND, AND" (or "AAA") structure

The facts are often connected in the speaker's mind, but the connections are not conveyed to the audience

B. The Problem

A simple listing of facts is efficient, but:

- it's boring
- people don't know what to make of the data
  - how it fits in with what they know
- people don't know why they should care
- people don't know what they should do

This can cause your message to get lost and / or forgotten.

C. The Solution

To overcome this, base presentations / essays / etc on stories

a. first establish a context (and… A)

b. introduce a problem / challenge / conflict (but… B)

c. show how to resolve (therefore… T)

d. describe the result (R) and its implications (I)

This ABTRI structure is the heart of all stories, both in fictional literature, and in science.

Writing & Presentations: Tell a good story.

a. Introduction / setup
   - Dorothy at home in Kansas

b. Challenge / conflict
   - tornado sends Dorothy to Oz

c. Response to the challenge
   - Dorothy tries to find the wizard

d. Resolution
   - Dorothy arrives back at home
   - "There's no place like home"

Introduction

Narrative structure in science - outline

a. It is generally believed that X; this is important for Y (A)

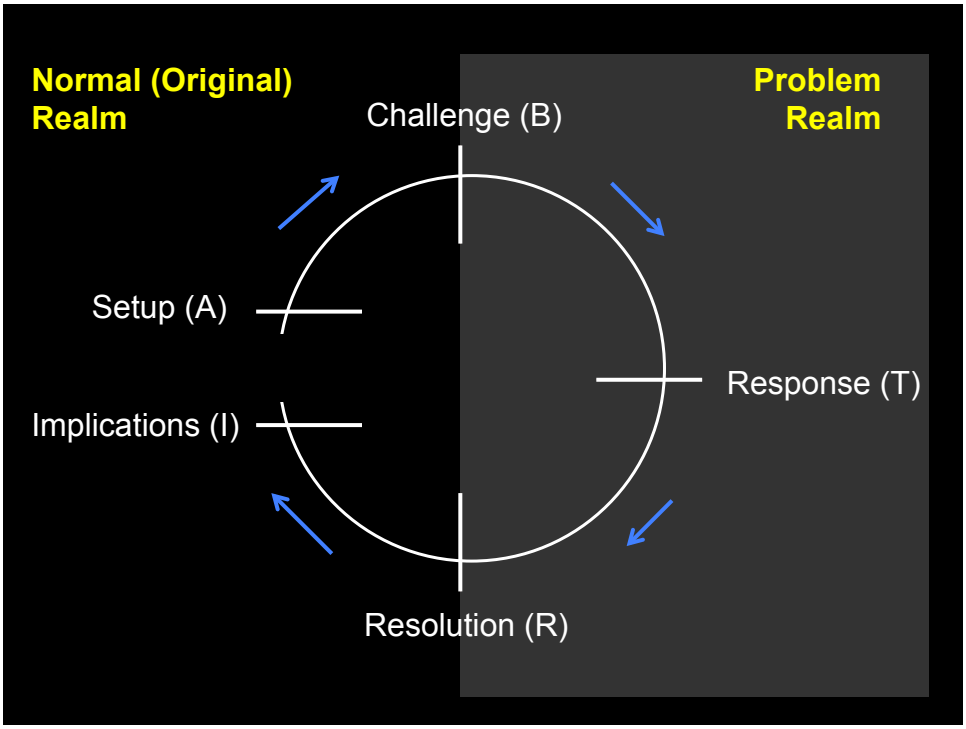
b. But there is a problem—e.g., an inconsistency (B)

c. I therefore handled the issue this way (T) Methods

d. Here are the results (R)

e. The reader should therefore do / believe Z (I)

Results + Discussion



Variations

1. Omit the Implications. (ABTR)
   - okay if no larger-scale implications are worth mentioning
2. Omit the Resolution. (ABTI)
   - less dramatic, but okay if the value is in the methods presented (like here ☺).
3. Omit the Resolution and Implications. (ABT)
   - okay if the value is only in the methods alone
   - sometimes results and implications are grouped together, so that T = a unitary TRI sequence
4. Omit the intro / setup. (BT…)
   - okay if the background information is already known to the audience. **But make sure that this is so.**

Important: Avoid narrative *zigzagging*

a. despite… (D)
b. however… (H)
c. yet… (Y)

Such DHY structure is too complex; confusing.

Please include narrative structure in essays and presentations, starting in Section 2.

Presentations

- Present the most interesting point(s) of the readings
  - don't need to cover all of it; just enough for an interesting story
  - can use material in the suggested readings to help out

Essays

- Discuss three concrete examples of connections
  - can use material in the suggested readings for examples
  - in section I, can also use an example from required reading

Please send me a file describing:

1. Content: ***6/12 of analysis mark***

- the **3 worst problems** (bad reason, bad example, etc)
  - **for each:** describe, and propose a **fix** / **replacement**
- the **3 best parts** (most convincing reason, example, etc.)
  - **for each**: describe, and explain why it's best

2. Style: ***6/12 of analysis mark***

- the **3 worst problems** (clarity, conciseness, storytelling)
  - **for each:** describe, and propose a **fix** / **replacement**
  - **do not go into details of grammar (unless there's nothing else)**
- the **3 best parts** (clarity, conciseness, storytelling)
  - **for each**: describe, and explain why it's best

Please list: your names (or group name), title of essay