

1.1: Belief versus Knowledge

“The first principle is that you must not fool yourself—and you are the easiest person to fool.”
—Richard Feynman

Main point: *Intensity* of a belief has little correlation with its *truth*.

- Quality of knowledge often judged by “feeling of knowing”
- Intense beliefs/memories can sometimes be really, really wrong
 - o misremembered events, cognitive dissonance, Cotard’s syndrome

To determine what to believe, need more than just a feeling that the conclusion is right

- o feeling of knowing is okay in small doses; just don’t trust it too much

Determination of what’s out there needs to be based on more objective considerations, such as the use of formal arguments. **A simple “feeling” isn’t enough...**

The Need for Critical Thinking

Everyday thinking relies on several approaches, such as what you hear from others (e.g., thought you heard someone say something at a party.)

But this doesn’t work well in unknown environments - existing knowledge is unlikely to match structure. **Thus, need to consciously watch what our instincts/reflexes are doing**

For the most part, it’s fine to learn about things using the:

- *sponge approach*
 - o believe whatever you're told (last-in dominates)
- *tunicate approach* (weak-sense critical thinking)
 - o believe the first things you're told (first-in dominates)
 - o new stuff that fits in sticks; the rest is forgotten / bounces
 - o however, is subject to bias (what was received first); very difficult to change

Both let you build up a quick understanding of the world.

But, if you want more control over your set of beliefs, need to learn **critical thinking**.

- *panning for gold approach* (strong-sense critical thinking)
 - o **evaluate** beliefs – see if they’re right (or at least, reasonably well founded), and not just a result of simple pattern completion.
 - o **only need to do this occasionally – choose when to apply**
- note: important to avoid going too far, and having no beliefs at all
 - o should still have a set of beliefs, so that you can act
 - o but beliefs should be the best ones available; should test from time to time
 - make sure that you're not fooling yourself

REAL-WORLD SEGMENT: Writing II – Advanced Style

1. Use context to reduce repetition of words. (*Ellipsis*)

Allows the reader to focus on the important part. Thus,

Attention is complex, and attention has long been studied. **NO**
Attention is complex, and has long been studied. **YES**

2. Place emphatic words of a sentence at the end.

The part of a sentence to be emphasized most should be placed at the end. Thus,

This steel is principally used for making razors because of its hardness.
- *emphasis: hardness*

Because of its hardness, this steel is principally used for making razors.
- *emphasis: making razors*

Secondarily: If next-most important item needs emphasis, put words at the *beginning*.

3. For each meaning, use only *one term*.

Confusion is likely when different words are used for the same meaning. Thus,

If you try, you can work. If you labour, you succeed. **NO**
-> If you try, you can work. If you work, you succeed. **YES**

4. For each term, use only *one meaning*.

Confusion is likely when different meanings are used for the same term.
(Especially when meanings switched midway through an argument — *equivocation*).

For example

All stars are in outer space. Since Justin Bieber is a star,
he must be in outer space. **NO, NO, NO**

**** For each rule, apply only *after* you've written something. ****

Don't try using a rule during the writing process. Write first, then correct (systolic).

Don't focus on *avoiding* errors: focus first on *writing*; then on *correcting*.