

Ay31 - Class #5

May 17, 2019

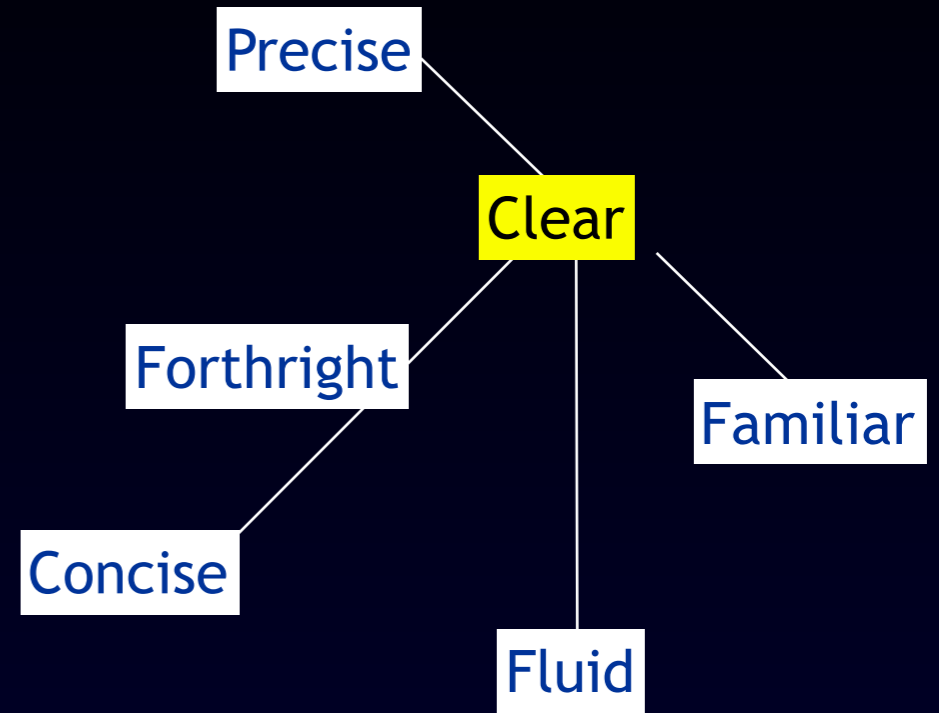
Writing for Different Audiences
Being Clear

Announcements

Your final paper is due by the end of the day on Wednesday, June 5.

Chapter 5

Being Clear



When you are out to describe the truth, leave elegance to the tailor.

Albert Einstein

Clarity means making sure that no one misreads you

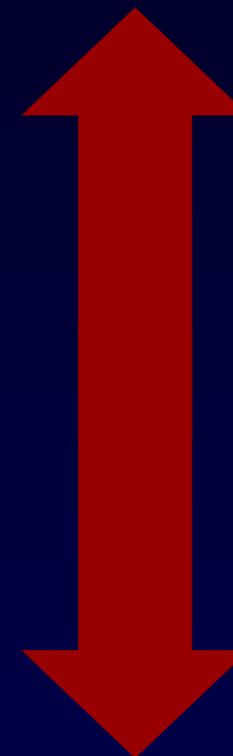
Streamlining language

language



Avoiding ambiguities

languagelanguagelanguagelangu??



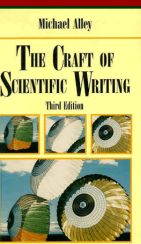
Complex wording also buries ideas

This study will consider why current solar energy systems, such as Solar One, have not reached the commercial stage and will find out what steps we can take to make these systems commercial.



R.I.P.

The goal of this study is to develop a commercialization strategy for solar energy systems by analyzing factors impeding early commercial projects (i.e., SOLAR ONE) and by identifying the potential actions that can facilitate the viability of the projects.

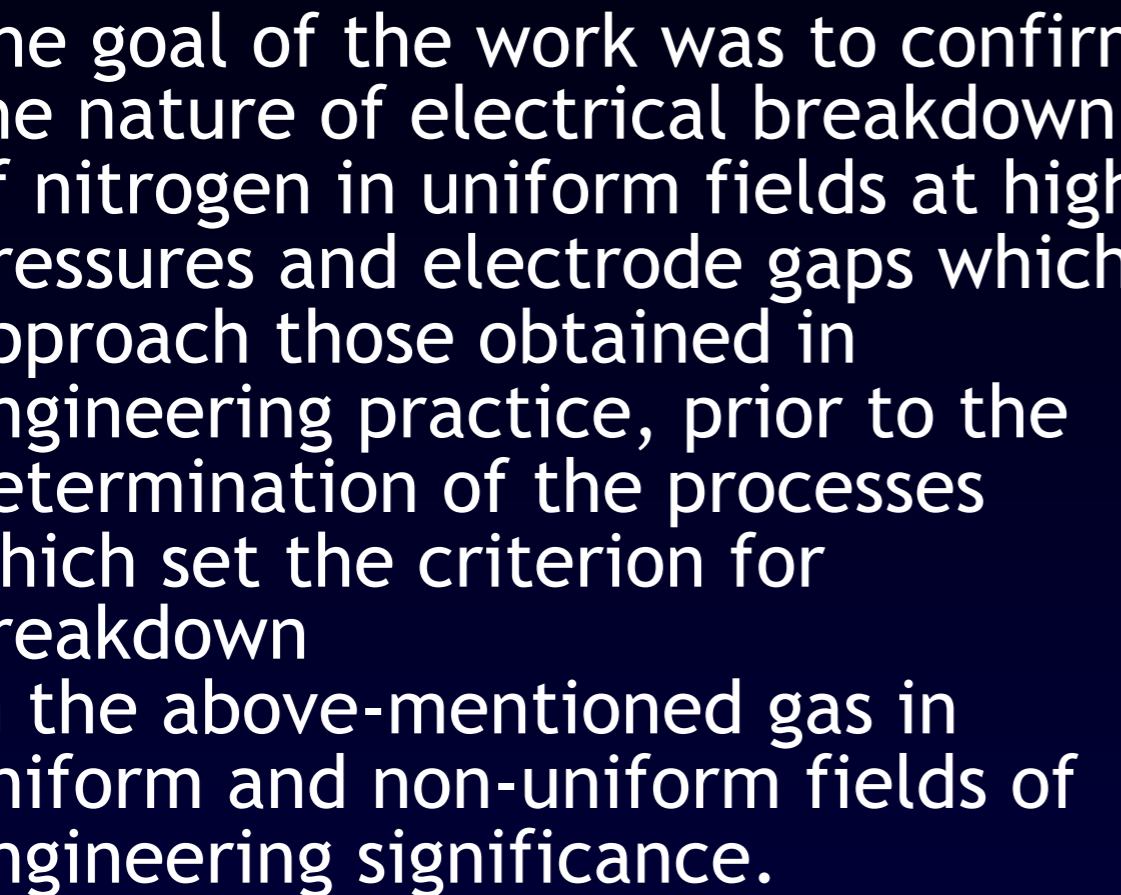


Stacking adjectives before nouns swallows the ideas

Solar One is a 10 megawatt solar thermal electric central receiver Barstow power pilot plant.


→ Solar One is a solar-powered pilot plant located near Barstow, California. Solar One produces 10 megawatts of electricity by capturing solar energy in a central receiver design.

Complex sentences misdirect readers



The goal of the work was to confirm the nature of electrical breakdown of nitrogen in uniform fields at high pressures and electrode gaps which approach those obtained in engineering practice, prior to the determination of the processes which set the criterion for breakdown in the above-mentioned gas in uniform and non-uniform fields of engineering significance.

At high pressures (760 torr) and typical electrode gap distances (1 mm), the electrical breakdown of nitrogen was studied in uniform fields.



The more muddled the original, the more revisions are needed to streamline it

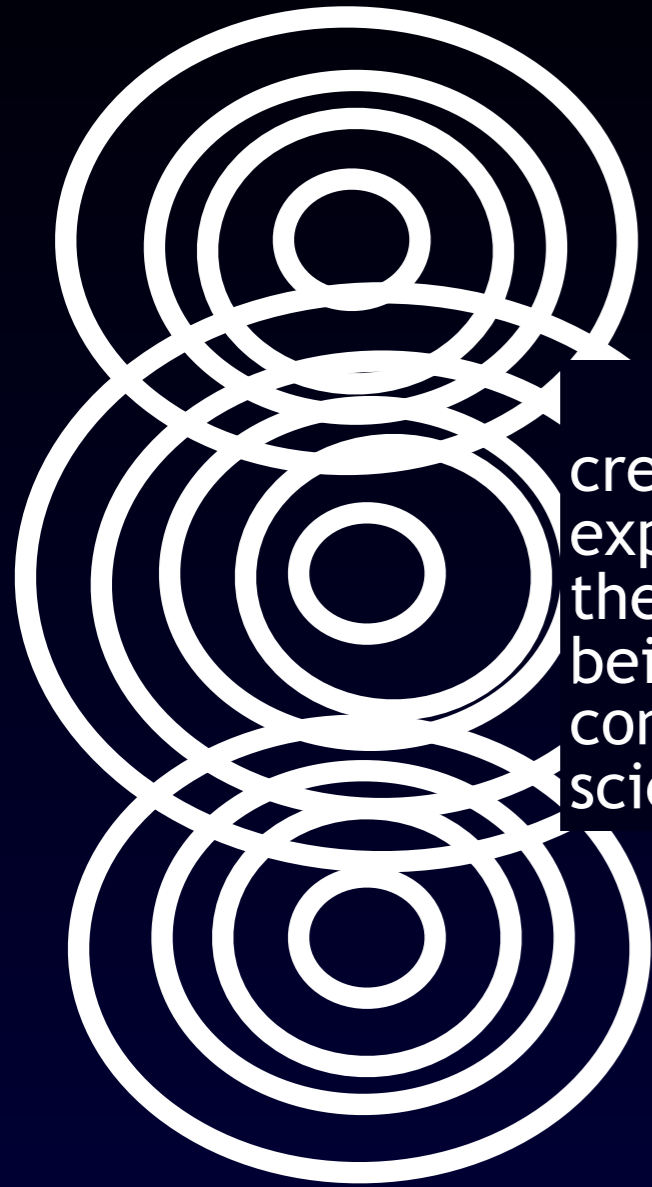
At high pressures (760 torr) and typical electrode gap distances (1 mm), the electrical breakdown of nitrogen was studied in uniform fields.



In our study, we examined the electrical breakdown of nitrogen in uniform fields. For these experiments, the electrode gap distances were typical (1 mm), while the pressures were relatively high (760 torr).



Archaic structures sound unnatural



In that the "Big Bang," currently the most credible theory for how the universe was created, explains only hydrogen and helium, we are left to theorize as to how all the other elements came into being. Having studied the nuclear reactions that constitute the life and death cycles of stars, many scientists believe that there lies the key.



—————▶ The "Big Bang" is the most credible theory for the creation of the universe. Nevertheless, it explains the creation of only helium and hydrogen. What about the other elements? Many scientists believe that those elements came from nuclear reactions in the life and death cycles of stars.

One measure for the complexity of the writing is the Gunning Fog Index

In the index, the complexity of the writing depends on
(1) the lengths of sentences
(2) the lengths of words

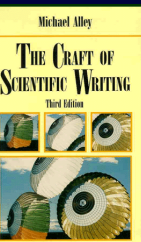
Desired index values for scientific writing are 10-12:
New York Times (11)
Scientific American (12)

$$F_i = 0.4 \left((N_w / N_s) + P_{lw} \right)$$

N_w = number of words in a *typical* paragraph

N_s = number of sentences in the paragraph

P_{lw} = percentage of long words in the paragraph



Clarity means making sure that no one misreads you

Streamlining language

language



Avoiding ambiguities

languagelanguagelanguagelangu??



An ambiguity is a group of words that can have more than one meaning

On the second day the knee was better and on the third day it had completely disappeared.



On the second day the knee was better and on the third day the pain in the knee had completely disappeared.



Word choice often causes ambiguities

We wanted to reduce the vibration of the fan at the exhaust as the exhaust ducting was cracking.



We wanted to reduce the vibration of the fan at the exhaust because the exhaust ducting was cracking.



Syntax often causes ambiguities, especially with adverbs

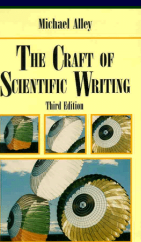
Only I tested the Labrador for rabies yesterday.

I *only* tested the Labrador for rabies yesterday.

I tested the *only* Labrador for rabies yesterday.

I tested the Labrador *only* for rabies yesterday.

I tested the Labrador for rabies *only* yesterday.



Also causing ambiguities are pronouns, particularly the pronouns *it* and *this*

Because the receiver presented the radiometer with a high flux environment, it was mounted in a silver-plated stainless steel container.



Because the receiver presented the radiometer with a high flux environment, the radiometer was mounted in a silver-plated stainless steel container.



Not having commas after introductory phrases or clauses often causes ambiguities

As light hydrocarbons evaporate the oil vapor pressure falls.



As light hydrocarbons evaporate, the oil vapor pressure falls.



When commas are missing within lists, ambiguities often occur

We examined neat methanol and ethanol and methanol and ethanol with 10% water.

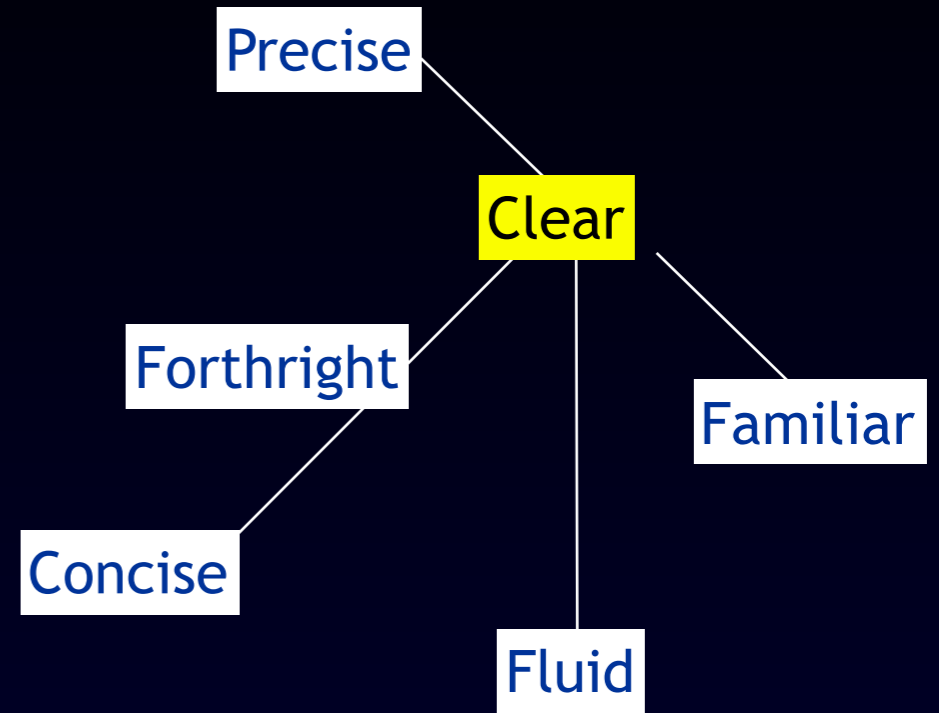


We examined four fuels: neat methanol, neat ethanol, methanol with 10% water, and ethanol with 10% water.



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Exercise

See handout with the same material written five different ways.

Goal: rank the five pieces from least to most technical.

Pay attention to: openings, level of detail, terminology, sentence length

(This exercise is not aimed at editing or revising the pieces. Just digest and compare them.)