Reading skills and the discourse of the research article

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RDRD: Lecture 7
- Morning classes:
  - Paragraphing: informational formats
  - Overview of the R-, D- and R&D-sections
  - Moves and steps in R- and D-sections
- Afternoon classes:
  - In-class practice analysis of R- and D-sections

Informational formats
- Paragraphs and groups of paragraphs organized according to type of / attitude toward information, for example:
  - Problem-solution (Situation-Problem-Solution-Evaluation)
  - Comparison and contrast
  - Advantage-disadvantage
  - Cause-effect/ effect-cause

Top-down organization with INFORMATIONAL FORMATS

Informational formats
- Informational formats are often used in top-down paragraphs:
  - The topic (e.g., problem, solution, cause, effect…) is established in paragraph initial sentences with supporting details that follow.
Comparison and contrast
//Problem solution

TWO EXAMPLES OF INFORMATIONAL FORMATS

Comparison and contrast to present novel findings

TS: The relationships between the modal relaxation time, $\tau_0$, and the water electrical conductivity (Fig. 8c) are different for different samples. For three samples (Portland, Boise 264 and Bandera 2714) $\tau_0$ shows a weak dependence on the water conductivity. For two samples (Berea 100 and Berea 400) $\tau_0$ increases slightly with the water conductivity increase (R-Move 2 novel relationships). In all these cases, the ratio of $\tau_0$ at high electrical conductivity to $\tau_0$ at medium conductivity is within the range from 0.57 to 3.3. Conversely, for the Massilon sample, $\tau_0$ is almost constant at low and medium conductivity values, and then decreases by an order of magnitude at the highest conductivity value.

Situation-problem-solution-evaluation

Problem solution is often used in I-sections
- Move 1 may indicate a general problem
- Move 2 may indicate a more specific problem (a gap or inadequacy)
- Move 3 presents the reported research as a (contribution to) solving the problem

Comparison and contrast reading strategies

- Predict:
  - What is compared: different samples
  - What about them is compared: modal relaxation, $\tau_0$ and electrical conductivity
- Look for language of comparison and contrast:
  - For three samples, for two samples, for all samples, Conversely, for the Massilon sample

Discussion Section

Paragraph 1:

Background sentence: Bacterial colonies in natural environments can spontaneously grow at close proximity, leading to competition for resources. (situation) TS: The question that motivated the present work is whether sibling bacterial colonies have developed sophisticated mechanisms to deal with such a competition. (problem for study)

Paragraph 2:

TS: We have performed detailed quantitative experimental investigations of the competition between 2 nearby sibling *P. dendritiformis* bacterial colonies grown on nutrient-limited surfaces. (method for finding a solution) Our results suggest that the 2 colonies mutually secrete an inhibitor that leads to death of bacteria in competing colonies when the inhibitor exceeds a threshold level. (solution=results)
Paragraph 3:
TS: The existence of a sharp threshold indicates that *P. dendritiformis* bacteria have developed a well-orchestrated deadly response to the presence of a sibling colony. (solution)

Paragraph 4:
TS: New insight may come from investigating how the bacteria die. There are 2 possible ways: The inhibitor acts as a bacteriocin (self-toxin) that kills bacteria directly, or the inhibitor acts indirectly by triggering a complex response in the bacteria similar to the one observed in *B. subtilis* (37–38). The long deceleration observed in the affected regions (see Fig. 2) suggests that the second possibility is more likely. (evaluation)

Reading Strategies:
Informational formats can be used to:
- Figure out the type of information in a paragraph or series of paragraphs
- Follow the logic or emphasis of the paragraph(s)
- Gain insight into the writers’ attitude
- Organize the information to help you remember it