

Introducing the Research Problem:

All research reports begin with an introduction of some sort, no matter what structure is followed in the rest of the paper. The introduction section is referred to as “framing” because it establishes a context or framework for interpreting the new research. This is where you state knowledge that motivated the research in the first place and to introduce the purpose of the study by:

1. Explaining your research objectives
2. Arguing that the research is important
3. Placing your study in the context of previous research

Common Moves in Research Article Introductions:

Move 1: Establish topic and significance (“establish a territory”)

- By claiming that the topic is of central interest to the field *and/or*
- By making generalization(s) about the topic *and/or*
- By reviewing previous research

Move 2: Establish need for present research (“establish a niche”)

- By indicating a gap in previous research or
- By raising a question about previous research *or*
- By proposing an extension of previous research

Move 3: Introduce the present research (“occupy the niche”)

- By outlining the purpose and/or main features of the study (*obligatory*)
- By describing the findings or conclusions of the study (*optional*)
- By previewing the organization of the report (*optional*)

Exercise 1: Identify common moves in the introduction section of Chiba et al. research on *Helicobacter pylori* infection in primary care patients with uninvestigated dyspepsia,

Exercise 2: Rearrange the sentences to create a coherent paragraph that would clearly establish the purpose of the research it introduces.

Effect of Treatment of <i>Helicobacter pylori</i> Infection on the Long-term Recurrence of Gastric or Duodenal Ulcer	
A. Recent studies have suggested that the eradication of <i>Helicobacter pylori</i> infection affects the natural history of duodenal ulcer disease such that the rate of recurrence decreases markedly (2-6).	D. Peptic ulcer disease is a chronic disease characterized by frequent recurrences.
B. In addition, studies of the effect of <i>H. pylori</i> eradication in patients with gastric ulcer have not been done.	E. We report the results of a randomized, controlled trial in which we evaluated the effect of therapy designed to eradicate <i>H. pylori</i> on the pattern of ulcer recurrence in patients with duodenal ulcer or gastric ulcer
C. The continuation of anti-ulcer therapy after ulcer healing results in a reduced rate of ulcer recurrence but does not affect the natural history of the disease, because the expected pattern of rapid recurrence resumes when maintenance therapy is discontinued (1).	F. However, the interpretation of these results has been complicated by the fact that several of the larger studies did not use control groups or any form of blinding (3, 5, 6).

Penrose/Katz (2010) p 98: Introduction to Graham et al. (1992), from *Annals of Internal Medicine*, p 705.

Definitions of important terms:

Pylori (*Pi-lori*) - the opening from the stomach into the duodenum (small intestine).

Helicobacter (*Heli-co-bacter*) - a genus of Gram-negative bacteria possessing a characteristic helical shape.

Diagnostic Questions for Evaluating Published Scientific Arguments:

- 1. How Relevant Are the Argument's Line of Support to Its Claim?**
Evaluate if there is a logical relationship between a claim and its supporting evidence. In other words, the evidence must be relevant to the central claim. (*example: Dr. Willie Cashin's South Peach Diet*)
- 2. How Successfully Has the Author Developed the Necessary Warrants?**
Warrants are assumptions, definitions, ideas, concepts, and theories that explain how an argument's lines of support are actually connected to its claim. Do not assume that readers will automatically accept numerical data, on their own, as valid support for claims.
- 3. How Convincing Are the Data-Driven Lines of Support for the Claim?** Evaluating the strengths and weaknesses in data-driven lines of support:
 - Have the data been driven from sound research methods?
 - Are the data statistically and/or practically significant?
 - Has the author effectively synthesized contrasting data from various studies on the issue?
 - Explain why the sparse data might actually be problematic.
- 4. How Convincing Are the Concept-Driven Lines of Support for the Claim?**
Data-driven support are complemented with nonnumerical factual information, structural and mechanistic explanations, theories, and other forms of conceptual knowledge and reasoning.
- 5. How Successfully Does the Author Acknowledge and Refute Counterarguments?** Because scientific arguments are by definition multisided, we must evaluate them by how effectively their authors account for counterarguments. Evaluate the claims of the counterarguments and the lines of support and warrants that back them? If the author fails to acknowledge viable counterarguments, you are entitled to raise the oversight as a criticism.

Evaluating Research Methods: The strongest arguments in scientific papers account for strengths and weakness in study procedures and analysis.

1. Were the study's subjects screen and selected for the appropriate characteristics?
2. Were subjects assigned to groups and conditions without bias?
3. Did the study include a sufficient number of subjects?
4. How appropriate was the study design for resolving the research issue?
5. How valid and comprehensive were the study's independent variables?
6. How valid and reliable were the study's dependent variables?
7. During the course of the study, how effectively did the researchers control for extraneous variables?
8. How appropriate and accurate were the study's statistical analyses?

Dr. Willie Cashin's South Peach Diet: peaches for breakfast, peaches for lunch, and more peaches for dinner. (Green p.135)

Claim: A peach-only diet "promotes positive changes in countless aspects of health." Calculating mean weight-loss values from the various studies over 6-month periods, Dr. Cashin determined that clinically obese subjects on his diet lost 11.2 Kg, while counterparts on nutritionally balanced conventional diets lost only 5.3 kg.

Are these results actually *relevant*, or *logically* related, to the author's specific claim that the South Peach Diet leads to countless positive health outcomes?