Technical Communication
Engineering 100.250

Argumentation and Persuasion
Proposals

Things engineers might ask for

Actions       Money
Permission    Belief

*Any others?*

Argumentation: two aspects

Conviction: showing the truth of a proposition.
Persuasion: convincing people to act upon what you have shown.

What do you first consider in deciding how to persuade?

Some call this argumentation.
You consider audience.

*I always talk a lot about audience.*

Understanding your audience helps you with

- Organization
- Level
- Tone
- Appeal

Some things generally useful to know about an audience:
- How much they know about the issue.
- The predispositions they may have.
- Their opinions on the matter.
- Their personalities.

*What else?*

Should we consider their emotional state?

Three recognized appeals:

- To Reason
- To Emotion
- To Ethics

*They are used in different situations.*

The appeal to reason is simply an appeal to rational argument.
The appeal to reason is simply an appeal to rational argument.

*It supposes, of course, that your audience is rational.*

The appeal to emotion tries to whip up feelings in favor of something, but without much rationality.

https://www.ispot.tv/ad/7dg0/geico-gecko-outtakes

The ethical appeal involves moral arguments.

So, there are three different appeals.

*Where do you see them?*

In engineering, two appeals predominate

- Appeal to reason
- Appeal to ethics

The bases of an argument

| Claim | Support |
Claims

- The United States is a republic
- The Earth is a sphere
- The 1987 Ford Mustang weighs 2756 lbs
- Babe Didrickson was the greatest athlete of the 20th Century

How do these claims differ?

Claims

- The United States is a republic
- The Earth is a sphere
- The 1987 Ford Mustang weighs 2756 lbs
- Babe Didrickson was the greatest athlete of the 20th Century

Requires a criterion-based (or non-sense) argument.

Who was the greatest athlete of the 20th century?

Babe Didrikson Zaharias

Babe Didrikson was the greatest athlete of the 20th century, she

- won two gold medals and one silver for track and field events in the 1932 Olympics
- was an excellent baseball player
- was an excellent tennis player
- was an all-American basketball player
- was the leading female professional golfer in the 1940s and 1950s

The Didriksen argument: convincing or not?

Anything missing?

Yes! There is a missing term or piece to the argument. But what is it?
Missing terms?

All-around athletes are better than athletes that specialize.

The best all-around athlete is therefore the best athlete.

Are these statements true?

All-around athletes are better than athletes that specialize.

The best all-around athlete is therefore the best athlete.

You would agree that they need to be accepted by the audience! Work on that as part of the argument.

The Toulmin model: a new way of looking at arguments

Toulmin Model:

The Toulmin approach sees an argument as a progression from accepted facts or evidence (data) to a conclusion (claim) by way of a statement (warrant), which establishes a reasonable relationship between them.


Example of argument as Toulmin Model

Data

Seabiscuit is a horse

Claim (therefore)

Seabiscuit has four legs

Warrant (because)

All horses have four legs

Example of argument as Toulmin Model

Data

Last night Jones drove through the city at 145 mph

Claim (therefore)

Jones drove recklessly last night

Warrant

Driving at an extremely high rate of speed is a form of reckless driving.
Warrants

Generally accepted views or opinions

Justify the conclusion drawn from the data

*Are often assumed or left unexpressed.*

But this can be very dangerous if the warrant is not obvious to your audience.

Find a warrant

- **Claim:** The iPad 2 computer is portable.
- **Data:** The iPad 2 weighs 1.33 lbs (601g)
- **Warrant?**

![](http://commons.wikimedia.org/wiki/File%3AIPad2.jpeg)

http://commons.wikimedia.org/wiki/File%3AIPad2.jpeg

Warrants may be thought of as belonging to three classes

- **Authoritative**
- **Motivational**
- **Substantive**

After W. Brockriede and D. Ehninger (1960); C. Kock (2006).

Find a warrant

- **Claim:** The Generac GP 3250 electric generator is portable.
- **Data:** The Generac GP 3250 weighs 115 lbs (52.16 kilos).
- **Warrant?**

Authoritative warrants

Depend on the general assertion that a qualified authority would support the conclusion based upon the evidence.
Motivational warrants
Depend on an appeal to the audience’s values.

Substantive warrants
Resemble more conventional forms of argumentation
Fall into one of six categories
- Cause and effect
- Analogy
- Sign
- Generalization
- Parallel case
- Classification

What warrant would work here?
Claim: Roderick is cold
Data: Roderick is shivering

Which type of warrant is this?
Claim: Roderick is cold
Data: Roderick is shivering
Warrant: shivering often indicates that a person is cold.

Which type of warrant is this?
Claim: Roderick is sick.
Data: Roderick is shivering.
Warrant: shivering often indicates that a person is suffering from a fever.

What warrant would work here?
Claim: Janet will live to be at least 90 years old.
Data: All of Janet’s parents and grandparents lived to be over 90 years old.
Which type of warrant is this?

Claim: Janet will live to be at least 90 years old.

Data: All of Janet’s parents and grandparents lived to be over 90 years old.

Warrant: People can expect to live as long as their immediate ancestors.

Substantive. Which?
Perhaps generalization, perhaps analogy.

Which type of warrant is this?

Claim: Eating oranges will help prevent colds.

Data: Oranges are a good source of vitamin C.

Warrant: Linus Pauling states that vitamin C is effective in preventing colds.

Authoritative

Which warrant?

Claim: Graduate engineering student Robert Smith plagiarized his doctoral thesis at State University.

Data: Over the last two years, the engineering college of State University has found nine of its graduate students guilty of plagiarism on their doctoral theses.

Warrant?

Substantive: generalization

Persuasion in action

The vacuum cleaner salesman

The salesman’s three goals

Establishing goodwill (or trust)

Showing a problem

Suggesting a solution

The classical argument

1. Problem/Introduction
2. Credentials
3. Position/Solution
4. Background of Problem
5. Argument for Position or Solution
6. Conclusion

Faulty Reasoning: some examples

Begging the question

Tax money should be spent on useful enterprises, such as giving primary school students laptop computers.

Ascending and Descending by M.C. Escher

http://www.artwallpapers.net/art/mc_escher/02/mc_escher02.jpg

Black and White Fallacy
(also known as “False Dilemma” or “Either/Or”)

This presents the listener with only two alternatives, when in fact there are more.

Black and White Fallacy
(also known as “False Dilemma” or “Either/Or”)

Example:
Either you support the Supreme Court’s most recent decisions or you are opposed to the Constitution of the United States.

Hasty generalization

“A survey of 200 people living in Florida shows that 70 percent of Americans play golf at least twice a week.”

Post Hoc Ergo Propter Hoc

“Bob Phillips was elected mayor of Treeville, and three months later the city’s crime rate had risen 20%. This shows how bad Mayor Phillips has been for the city.”
<table>
<thead>
<tr>
<th><strong>Undistributed middle</strong></th>
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<tbody>
<tr>
<td>All iPods are electronic devices, and all televisions are electronic devices. Therefore, all iPods are televisions.</td>
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<tr>
<th><strong>Irrelevant appeal</strong></th>
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<tr>
<td>John Lear, son of the developer of the Lear Jet, is a retired airline pilot with countless hours of flying time and numerous awards to his credit. During his career he worked for 28 different airlines and successfully tested 150 different experimental aircraft. He asserts that the United States Government has been conducting secret mining operations on the moon since the 1960s.</td>
</tr>
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<tr>
<th><strong>Non Sequitur</strong></th>
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<tr>
<td>“Professor Ertegun is known for his scrupulous honesty; he will certainly make great progress in the application of carbon nanotube technology.”</td>
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<thead>
<tr>
<th><strong>Equivocation</strong></th>
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<tr>
<td>“Only man is rational. No woman is a man, therefore no woman is rational.”</td>
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<thead>
<tr>
<th><strong>Proposals</strong></th>
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<th><strong>A persuasive document</strong></th>
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<tbody>
<tr>
<td>Makes a claim</td>
</tr>
<tr>
<td>and</td>
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<tr>
<td>Furnishes support for a claim</td>
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A proposal does two things

It makes a claim:

*"You need job X done"
*I can do job X*

It furnishes support for a claim:

*"Here is the proof that I can do job X"
*Is a proposal purely persuasive?*

What might your claims be in this situation?

I propose microprocessor-based toy that

Can be built by a team of four
Can be built by our team of four
Can be completed in six weeks
Will be educational
Can be economically produced
Is marketable

Anything else?

What would constitute proofs that you can do the job you propose?

Knowledge    Experience
Sufficient time  Sufficient personnel

So, you are basically saying

Here is work you need done

I can do the work

Here’s why my team can do the work

All of which tends to breakdown into these sections

* Background
* Details of proposed work
* Explanation of evaluation of proposed work
* Material, personnel and equipment requirements
* Explanation of expertise
* Budget *(not applicable in this case)*
Background

Information needed by the audience to understand the details of the proposal

*What might this be in this case?*

*Perhaps a detailed description of the game?*

A detailed description of a microprocessor-based educational toy is not

“It will work just like *Angry Birds*, but it will use the Altera microprocessor.”

Erwin Schrödinger
1887 to 1961


Arguments that your product fulfills LTB’s requirements

Educational  Marketable

Novel

And anything else you think matters.

*And don’t forget any necessary warrants.*

Details of proposed work: specific tasks

Explanation of how the work meets the proposed objectives

How work will be completed

When work will be completed

*What might this be in this case?*

Explanation of evaluation

Telling the reader how to judge whether the work has been successful

*What might this be in this case?*

Material, personnel and equipment requirements

Examples in this case might be the hardware and software required
Explanation of expertise

Here you tell the reader why you (or your team) can do the work

Don’t forget your warrant!

Simplified proposal structure

• Overview: informational abstract
• Simple introduction including scope of proposed work
• Background: information needed by the reader to understand the proposal
• Details of proposed work: clear description of the tasks needed to accomplish the proposed work and a statement of how long it will take to accomplish them.
• Explanation of how the work will be judged to be successfully completed.

Simplified proposal structure, cont’d

• Material, personnel and equipment requirements for proposed work
• Explanation of the proposer's expertise
• Statement of the qualifications of those who propose to do the work
• Conclusion: statement of the main recommendations of the proposed work and statement of how it meets the requirements established by the proposer or the client

Abstracts: brief summaries of reports

Two types

Informational

Descriptive

Purpose of an abstract:

“The abstract enables prospective readers to determine whether the report will be useful and whether they need to read all of it or only parts of it.”

Descriptive abstracts

Describe what the report is about

Are often like a table of contents in paragraph form

Informative abstracts

Are "the report in miniature"
State all the essential points
Give the reader all essential information
Are generally longer than descriptive abstracts

Descriptive abstracts

Tell what the topic of the report is
Do not summarize a report’s content

Informational abstracts

“. . . Gives the gist, or essence, of a piece of writing; it includes the most significant material in the writing. It is the report in miniature.”


Abstract

We propose to create a device that distorts the human voice when users speak on the telephone. The device would allow users to sound like one of six celebrities (Adele, Mickey Mouse, Darth Vader, Jim Carrey, Katherine Hepburn and Sandra Bullock) whose vocal characteristics will be programmed into the device. We believe the device would be a popular novelty item, and our team could produce a prototype of this device in six weeks at a cost of $5,200.

(Informational)

About the proposal assignment

We will use an informational abstract as an overview

We will not use a cover page

We will not use a table of contents
Argumentation involves conviction and persuasion.
Toulmin model explains arguments as claims supported by data by means of a warrant.
Toulmin warrants are of three sorts: authoritative, motivational and substantive.
Arguments of fact precede arguments of policy.

Proposals are persuasive documents.
The sections work together to support the claim that the proposer can do work that the client needs.
Abstracts are of two kinds:
- Descriptive
- Informational