

# Critical Thinking Skills

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# Step 1: Getting Started

- Introductions
- Thinking about Thinking
  - There are many, many critical thinking approaches; take what you like and leave the rest.
  - Class is progressive, systematically building from parts to a whole.
  - Universal patterns, not personal shortcomings.
  - Be open to exploring!

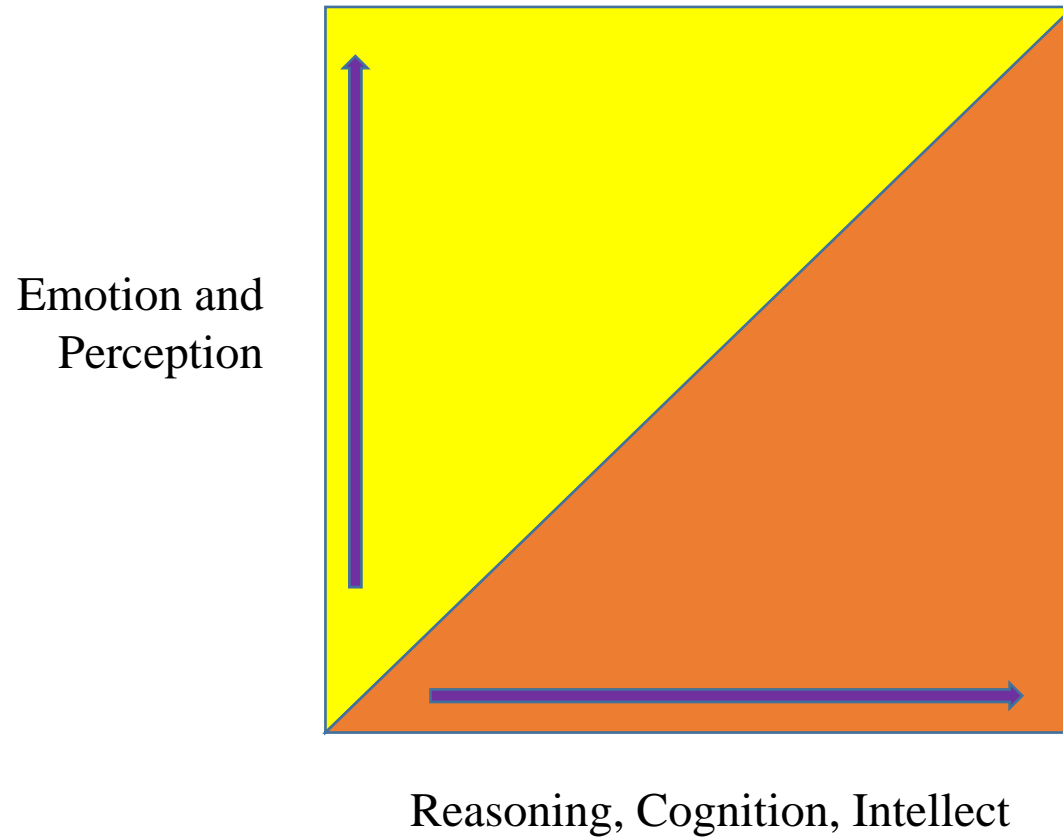
# Two Types of Thinking



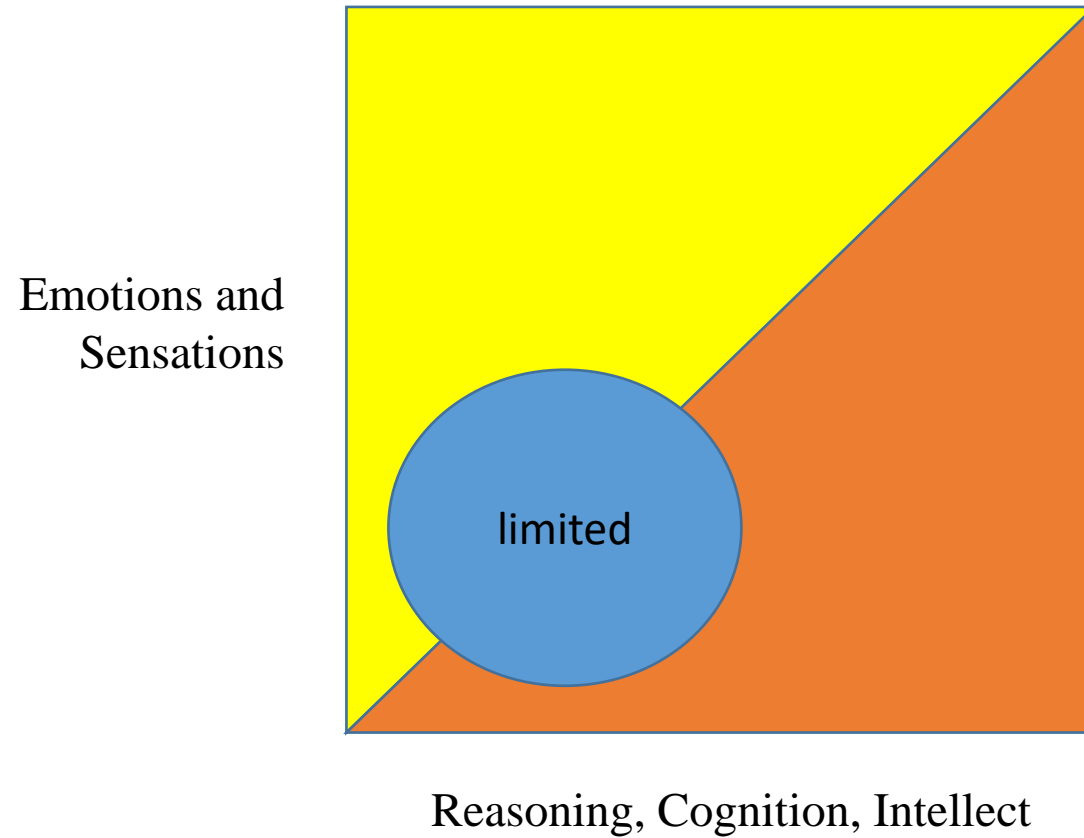
## The Two Types of Thinking are Like Land and Water

- Emotions & Sensations – like water (fluid, mysteriously interconnected)
- Reasoning, Cognition, Intellect – like land
- Inseparable but we can study each one separately

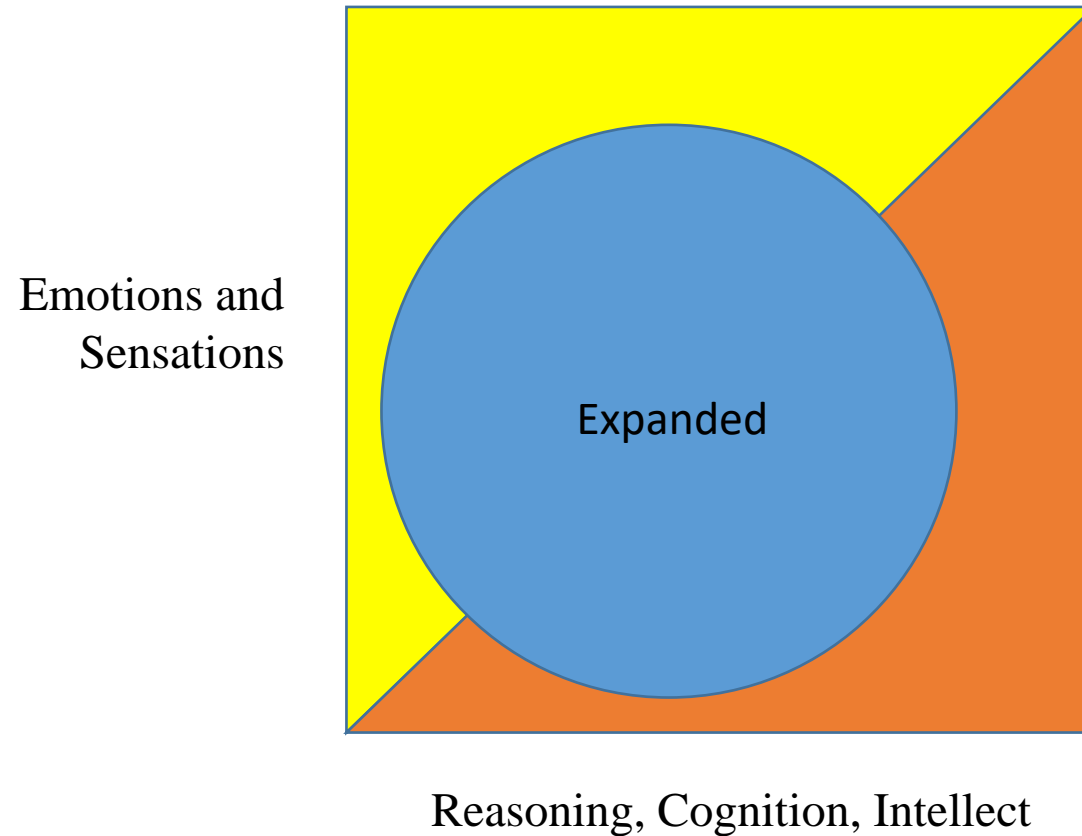
# The Two Types of Thinking



# Limited Range of Critical Thinking Skills



# Expanded Range of Critical Thinking Skills



The more we practice,  
the larger our capacity  
for holistic critical  
thinking will become.

# Example: Roscoe's Cookie



In what two ways does Grandma respond to Nelson's complaint?  
What's the difference between them?  
Which approach is the more "rational?" More "objective?" More "right?"

# Step 2: Working with Emotionally Charged Situations

- The Perceptual/Emotional Side of Thinking
  - Normal and natural, hard-wired: goal is not to exterminate, but to inquire
- The Ladder of Inference
- Check yourself first
  - Is my emotional reaction here stronger than warranted?
- Then Query the Other
  - Curb any urge to lash out or withdraw; adopt an inquiring attitude
  - Question to clarify understanding, not to judge
  - Deep listening

\* Ladder of Inference

\* Listening skills questionnaire



# Emotionally Charged Situations

- Description: A situation where unsurfaced feelings influence a person's perceptions and thinking.
- Some situations are more charged than others.
- The “Ladder of Inference” tool provides a concrete way to work with charged situations.
- Work with yourself first; then query the other(s).

# Surfacing Hidden Emotions and Beliefs

## A good way in: Pet Peeves

- Something that bugs you way out of perspective.
  - e.g. The TV weatherman
  - The toothpaste tube
  - Past memories/feelings



## • Another entrée: Thinking Traps

- Bias in thinking based in unknown emotions/perceptions.



# A Good Way In: Pet Peeves



- A pet peeve of mine: waving in the gated community when I visit my friend.
- Emotional reaction – Annoyance: “Boy is this dumb” - seems so hokey, trite, phony.
- Storytelling: sarcastic, judgmental – (“don’t these people have anything better to do?”)
- My reaction turns into entrenched bias and prejudice.
- I dread going there again.

# The Ladder of Inference



## 4. External Reaction:

Judge, attack or withdraw, often in anger or hurt. May be aggressive, later regretted. Can harden into rigid attitude, defensiveness, closed to all options but yours.

## 3. Internal Storytelling:

Creating a narrative to explain what's going on. Judging, attributing, assuming, blaming. May be habitual, familiar, even comfortable.

## 2. Emotional Charge:

Triggering, clenching, fight of flight. Unaware, not consciously controlled. Happens instantly, easy to miss.

## 1. Received Input:

From experiences, conversation, observation, media

# Stepping Down The Ladder of Inference



## 1. Visible Response:

What was my kneejerk response? What are some other possibilities?

## 2. Storytelling:

Is my story based on facts? How could I test this? What other stories are possible?

## 3. Emotional Charge:

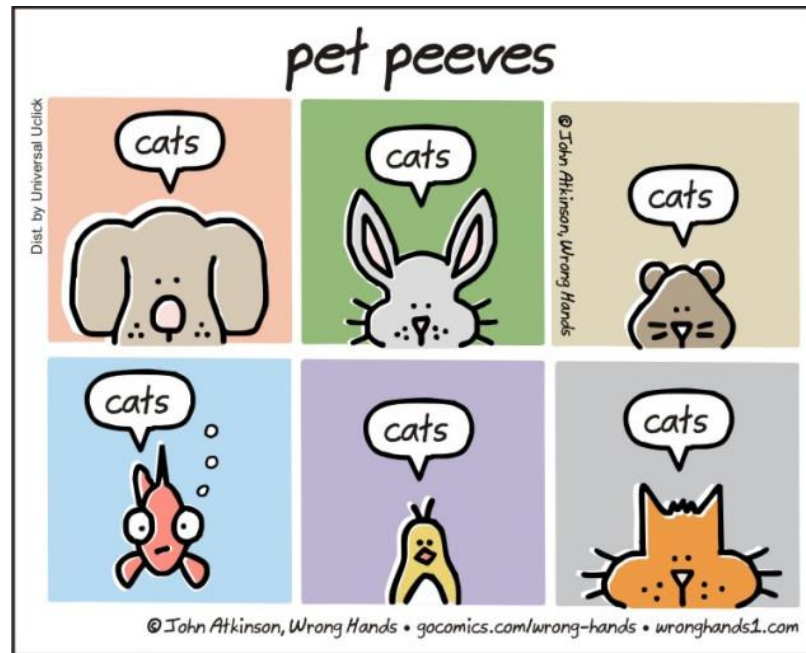
Is my emotional reaction extreme for the circumstances?

## 4. Trigger

What was the initial trigger? Did I ignore or dismiss anything? How could I test this?



# What's a Pet Peeve of Yours?



- What's a little something that drives you crazy?
- Choose some examples from your life that bug you way out of proportion.

# Practice

- What are some of your everyday pet peeves? Group discussion.
- Write down 3 pet peeves, ranging from superficial to more deeply held.
- Choose one that you're comfortable sharing with others – some “juice” but not overly prickly or painful.

- In a pair or small group, each person share a pet peeve.
- Using the worksheet, fill in your Ladder of Inference as best you can.
- Share your results with your group, collectively filling it out more fully.

# What About Conflicting Ladders of Inference?

- In a difficult situation each side may have zoomed up their own Ladder of Inference.
- Emotional undertones may lead to biased perceptions.
- Unwitting bias provokes hurt or angry reactions, feeling unheard.
- Shared communication is *not* happening. Trust and respect are reduced.





# Example: Borrowing the Family Car



Story

# Stepping Down The Ladder of Inference



## 1. Visible Response:

What was my kneejerk response? What are some other possibilities?

## 2. Storytelling:

Is my story based on facts? How could I test this? What other stories are possible?

## 3. Emotional Charge:

Is my emotional reaction extreme for the circumstances?

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# Addressing the Other's Perspective

1. Set your own response aside; adopt an inquiring attitude.
2. Seek to understand with kindness, not to judge or find fault.
3. Share your own Ladder of Inference (“telling on yourself”) when appropriate.

Use openers such as:

- Repeat the other's last statement or main point.
- Pause, gently.
- “Really? Could you say more?”
- Summarize: “so what I'm hearing you saying is \_\_\_\_\_. Is that right?”
- “I'm confused about X. Could you say more?”

# Deep Listening Skills

- Body posture & mimicking.
- Interpersonal space.
- Eye contact.
- Affirming expressions and gestures, smile and nod.
- Repeat back what you heard.
- Keep the focus on them, don't add your own content.
- Ask permission if you must interrupt to clarify; then return directly to them.



# Practice Case

## Environmental Impacts of Grass lawns: How do *you* feel?

- **Biodiversity:** Lawns are monocultures of non-native plants that replace diverse habitats for wildlife.
- **Water pollution:** Pesticides and fertilizers can run off into waterways.
- **Air pollution:** Lawn equipment pollutes the air.
- **Water usage:** 30–60% of fresh water in urban areas is used on lawns, and much of it is wasted.
- **Chemicals:** Toxic chemicals are toxic to most living things.



1. First, try not responding at all (look away, turn sideways, etc.)
2. Then, use open-ended questions to better understand the other person's position.
3. Add deep listening skills to clarify even further.

# Step 3: How Emotions can Influence Thinking

## Thinking Traps

- What are they?
- Where do they come from?
- Susceptibility Survey
- Demonstration Example
  - Bailey's job interview
- What are the Effects of Thinking Traps?
  - How do they affect critical thinking?
  - How to work with them

## Practice

- \*Thinking Traps handout
- \*Susceptibility Survey
- \*Bailey's Job Interview

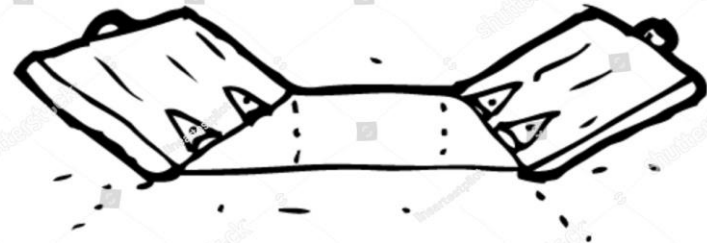
# Surfacing Hidden Emotions and Beliefs

## A good way in: Pet Peeves

- Something that bugs you way out of perspective.
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  - Feeling states from the past



- Another entrée: Thinking Traps
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# Thinking Traps

Thinking Traps are embedded thought patterns that lead to distorted thinking, beliefs, decisions, etc.

- They are often taken for granted.
- They may be rigidly held.
- There may be resistance to examining them.
- They may be based in undigested emotion.





# Susceptibility Survey

This non-scientific survey may help you recognize your susceptibility toward Thinking Traps. A high score in the as-is mode or a high score in the reverse-meaning mode suggests that you may be at risk for habitual aggressive or retreating responses. It may be difficult for you to be calm and present in conflictual situations.

As Is Score	Reverse Meaning Score	
		I have strong opinions about many things and often find myself in disagreements or debates with others.
		Most people know that when I am mad they should stay out of my way.
		It's hard for me to communicate with people whose opinions and backgrounds are different from my own.
		I feel my co-workers benefit when I point out their errors or mistakes—it helps them to learn and do better.
		It's important for me to always say exactly what's on my mind, even if the truth hurts.
		I tend to respond to people who are angry by becoming angry myself.
		I believe it's important to sincerely praise the successes of others (reverse score).
		I know which people at work are weaker, slower and/or not as smart as I am and I am likely to use that information to get ahead.
		I have difficulty feeling and expressing anger and then letting it go.
		I often find myself speaking without thinking, and sometimes say hurtful things.
<b>Total:</b>	<b>Total:</b>	

# Some Common Thinking Traps

<b>Listening bias</b>	Forming your own opinion before the other person has stopped talking.
<b>Mind Reading</b>	Assuming you know what the other is thinking without checking to confirm.
<b>Jumping to Conclusions</b>	Assuming a conclusion based on incomplete information.
<b>Confirmation Bias; Anchoring</b>	Only considering information that confirms your own point of view.
<b>Projection</b>	Attributing to the other person something that actually comes from you.
<b>Over-Personalization</b>	Blaming yourself for things outside of your control.
<b>Self-Serving Bias</b>	Believing that (only) your own perceptions and beliefs are accurate, realistic, unbiased.
<b>Push To Be Right</b>	Quickness to criticize, distort, or dismiss alternative ideas or suggestions.
<b>Stereotyping</b>	Rigid and simplistic generalizations about members of a particular social group.
<b>All-or-Nothing Thinking</b>	“always,” “never,” “everybody knows ____,” etc.

# Case Example: Bailey's Job Interview



# Practice Debunking Thinking Traps

- Examine your own thinking traps first.
- Fully accept the other person's right to their thinking style.
- Use the Ladder of Inference.
- Tell a story on yourself that pertains to that trap.
- Bring a sense of humor.
- Use listening skills.

## Practice



**Gephyrophobia:** A fear of [bridges](#) and [tunnels](#), especially those that are older. Sufferers of gephyrophobia may avoid routes that will take them over bridges.

# Summary

1. How do pet peeve and thinking trap analysis contribute to critical thinking skills?
2. How can we use our growing toolkit to examine the emotional/perceptual aspect of thinking?
3. Is the emotional/perceptual aspect of thinking “bad” or “wrong?”
4. Is there such a thing as a truly “objective” perspective?



# Step 4: Logical Reasoning

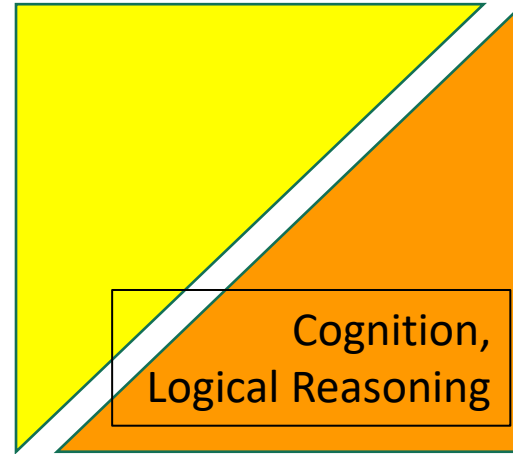
- Defining Our Terms
  - Argument, assumptions, reasons, conclusions, counterarguments
  - Implicit, explicit arguments
  - Missing information
  - Irrelevant information
- Categorizing Parts of an Argument
- Constructing an Argument

\*Bangor News Letter to the Editor

\*Dove Commercial

# Intellectual, Cognitive Reasoning

Emotional:  
Ladder of  
Inference



Intellectual:  
Logical  
Reasoning

# The Four Elements of An Argument



Conclusion

Reasons

Facts and  
Information

Assumptions



Missing and  
Irrelevant Pieces



# Defining Our Terms

## **An Argument:**

Making a case for \_\_; an advocacy; taking a position; an attempt to convince.

## **Conclusion:**

Simple statement of the position taken; the main point of the argument.

## **Assumptions:**

Taken-for-granted ideas about what's right and true; a conclusion without reasons.

## **Reasons:**

Statements in support of the conclusion.

## **Facts:**

Verifiable information relevant to the argument.

# Dissecting an Argument

- May be simple or complex.
- Parts may appear in any order.
- Some parts may be left out.
- They can be dissected and reassembled:
  - Conclusions can be questioned;
  - Reasons can be queried;
  - Facts can be checked;
  - Assumptions can be surfaced;
  - Unnecessary information can be left out.
- Not all parts may be logical: Use the Ladder of Inference to investigate.

# Dissecting an Argument

**Bangor Daily News**  
12 Oct 2024

## **Bangor roads are not pedestrian-friendly**

**Bangor Daily News**  
12 Oct 2024



Bangor is a good place to live, having beautiful nature and the greatest people in the country. However, it is no longer a good place to live without a car. As a high schooler in Bangor without a car or driver's license and who walks to school, I inevitably noticed the severe inconvenience due to the non-pedestrian friendly environment of our town.

There is no doubt in my mind that Bangor is not a town where pedestrians can feel safe to walk around. It has been dangerous for vulnerable members of society, including children, the elderly, and people with disabilities with sidewalks that are not wheelchair accessible.

Stillwater Avenue is especially dangerous to walk on because the road markings and traffic signals that ensure the safety of pedestrians are inadequate though there is heavy traffic. It is not much different in the streets around Broadway either where pedestrian paths are damaged and there are not enough road signs for children in play.

Bangor's lack of walkability is attributable to lacking clear separation between vehicular and pedestrian area, marked crosswalks for safe road crossing, and well-organized bike lanes around the general Bangor area.

While renovation work is being carried out on the city hall building, I hope there will be some progress to improve the pedestrian-friendly environment in Bangor.

Dylan Cho

# Example: Dove Soap Commercials

## Dove Soap Commercials

2017



1957



What different arguments are made for buying Dove soap in 1957 vs. 2017?

How do the reasons and assumptions differ in each commercial?

# Step 5: Working with Conflicting Arguments

1. Check for bias in yourself and other
  - Use the Ladder of Inference to inquire into your own and the other's mindset
2. Examine each view and possible counterarguments
3. If there's a genuine impasse, try brainstorming
4. Practice and examples

# Example: “There Goes Two Sofas”

Betty and Tom have some extra income this summer.  
They disagree about how to spend it.



# What Could be Betty and Tom's Arguments?

	Betty's Argument	Tom's Argument
Conclusion		
Reasons		
Known and Unknown Facts and Information		
Assumptions		

What could be Betty and Tom's arguments?  
How could their conflict be resolved?

	<b>Counterargument to Betty</b>	<b>Counterargument to Tom</b>
Conclusion		
Reasons		
Facts		
Assumptions		



# Brainstorming

- Assemble a diverse group of stakeholders and be sure each one has an equal voice.
- Generate a problem statement that all agree with.
- Establish criteria for a problem solution.
- Invite radically different alternative approaches to the problem.
  - Give value to all ideas, no rejections at this point.
- Examine each idea in light of pros and cons for the solution.
- Choose a best idea that meets most/more criteria.

# Constructing Conflicting Arguments

	<b>Universal Critical Thinking Skills Education</b>	
Conclusion		
Reasons		
Facts		
Assumptions		
	<b>Pros</b>	<b>Cons</b>

# Step 6: Pulling it All Together

- Combining The Two Parts of Critical Thinking
- Critical Thinking Tools
  - Ladder of Inference
  - Listening Skills Questionnaire
  - Susceptibility Survey
  - Thinking Traps
  - Working with Arguments
  - Brainstorming Method
- Final Case: Role Play and Debrief

# Final Case : Controversy in Harpswell



# Improving Your Odds: Pay Attention to Process

## Process Guidelines

- If emotions come up, stop, acknowledge, listen, descend LOI.
- Listen actively, check your understanding. Take a poll – ask for other people’s perspectives.
- Check your own bias – do you have an agenda?

## Signs of a Positive Outcome

- Everyone listened sincerely to others.
- Everyone feels the process was fair, with no one claiming more power.
- Everyone feels their views were heard and respected.
- Everyone feels they were able to be themselves, sharing their true beliefs.
- Everyone can “own” the solution.