

Persuasion and Games

CS160: User Interfaces

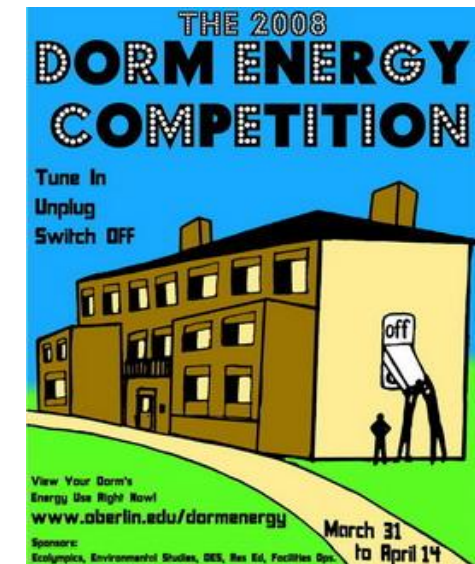
John Canny

Review

- Model human processor: simplified view of cognitive processing for simple tasks
- Perceptual processor
 - Speed, sensitivity to change, causality, capacity, processing
- Memory
 - Computing time for recognition tasks
 - Long-term memory: discrimination
 - Recognition over recall
- Decision making and learning
- Fitt's Law

This Time

- Persuasive games – why?
- Non-educational games
 - Fitness
 - Health (diet, hygiene)
 - Saving energy
 - Reduce environmental footprint



- These themes are really about changing users' behavior, and *persuasion* is the mechanism.

Persuasive Games

- Persuasion is hard in traditional media:
 - Advertising, product placement
 - Political speeches and debates
 - Health, public service announcements

rely on ***rhetoric***, the oldest form of persuasion, perfected by the Greeks.
- Very small windows of user attention in these media:
 - A few seconds
 - Users actively trying to “tune out”
 - Messages impersonal, delivered by strangers

Persuasive Games

- Games are far more powerful media for persuasion.
- Users commit enormous amounts of time to play.
- Interaction is two-way.
- Games change in-game behavior dramatically – players play as best they can to win according to the games rules.
- Games support many persuasive mechanisms that are impossible in traditional media.

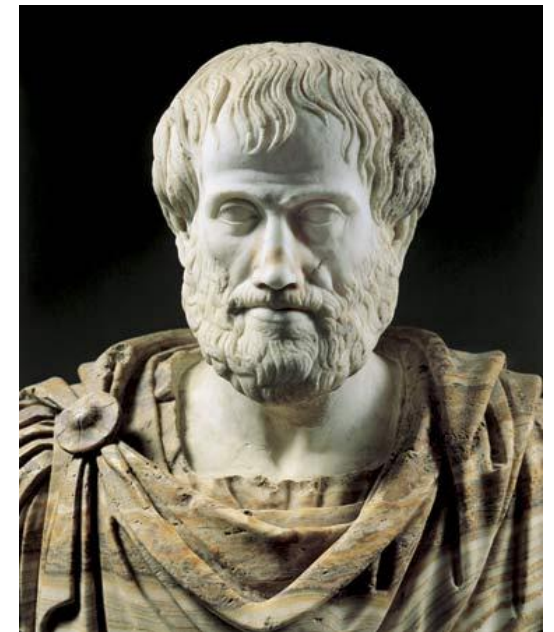


Overview

- **Rhetoric – the art of persuasion by dialog.**
- The psychology of persuasion.
- Persuasion and interactivity.

Rhetoric

- The ancient art, still the primary tool of politicians and other professional persuaders.
- Aristotle's three forms of rhetoric:
 - **Ethos:** argument by character
 - **Logos:** argument by logic
 - **Pathos:** argument by emotion



Ethos

- Take the moral high ground – not easy – usually it is earned or assigned by others.

S. Palin: “I accept the privilege of serving with a man who has come through much harder missions ... John S. McCain.”

Next 9 statements focus on McCain,...closes with:

“He's a man who wore the uniform of this country for 22 years and refused to break faith with those troops in Iraq who have now brought victory within sight.”

Ethos

McCain on his VP: “I found someone with an outstanding reputation for standing up to special interests and entrenched bureaucracies; someone who has fought against corruption and the failed policies of the past...

...someone who grew up in a decent, hard-working middle-class family, whose father was an elementary school teacher and mother was the school's secretary.”

“ She's not — she's not from these parts and she's not from Washington.”

Ethos

S. Palin: “Our son Track is 19.

And one week from tomorrow Sept. 11 He'll deploy to Iraq with the Army infantry in the service of his country.

My nephew Kasey also enlisted and serves on a carrier in the Persian Gulf.”

“And in April, my husband, Todd, and I welcomed our littlest one into the world, a perfectly beautiful baby boy named Trig. From the inside, no family ever seems typical.”

Ethos

- B. Obama on VP: “Now I could stand here and recite a list of Senator Biden's achievements, because he is one of the finest public servants of our time. But first I want to talk to you about the character of the man standing next to me...”
- “...Then tragedy struck. Joe's wife Neilia and their little girl Naomi were killed in a car accident, and their two boys were badly hurt... He was 30 years old...”
- “...He raised his boys — first as a single dad, then alongside his wonderful wife Jill, who works as a teacher”
- “...He instilled in them such a sense of public service that his son Beau, who is now Delaware's attorney general, is getting ready to deploy to Iraq”

Ethos

J. Biden: “Beau, I love you. I am so proud of you. Proud of the son you are. Proud of the father you've become...”

Later: “Barack Obama could have done anything after he graduated from college...But that's not what he chose to do. He chose to go to Chicago. The South Side...”

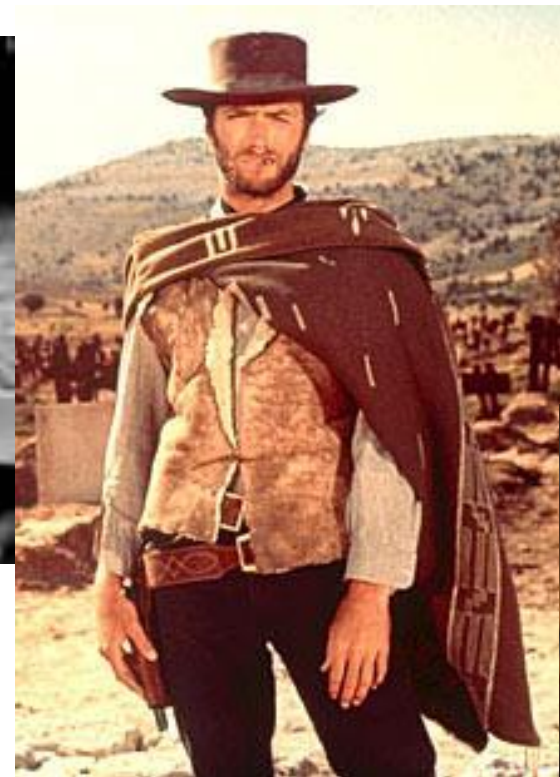
“Because Barack made that choice, 150,000 more children and parents have health care in Illinois...”

“And when he came to Washington, I watched him hit the ground running, leading the fight to pass the most sweeping ethics reform in a generation...And he moved Congress and the president to give our wounded veterans the care and dignity they deserve.”

Ethos and armor chinks

Ethos is not about living a saintly life, but living a life that encourages people to *trust* you.

That often involves exposing personal weaknesses.



Ethos in Games

“Righteous Quest” games:

- EA’s Lord of the Rings
- Star Wars (Lucas Arts)
- Final Fantasy I-XIII
- Halo, and of course...
- Mario



Logos

Not the same as logical argument. In practice its very difficult to change someone else's beliefs or opinions, even through logic. Logos uses an easier path.

The key is to find a short, easy path from the listeners' beliefs.

B. Obama on the economic meltdown: “This financial crisis is a direct result of the greed and irresponsibility that has dominated Washington and Wall Street for years. It's the result of speculators who gamed the system, regulators who looked the other way, and lobbyists who bought their way into our government. It's the result of an economic philosophy that says we should give more and more to those with the most and hope that prosperity trickles down to everyone else.”

Logos

- J. McCain on the meltdown: “So there's no doubt that we have a long way to go. And, obviously, stricter interpretation and consolidation of the various regulatory agencies that weren't doing their job, that has brought on this crisis.”
- S. Palin “The barometer there, I think, is going to be resounding that our economy is hurting and the federal government has not provided the sound oversight that we need and that we deserve, and we need reform to that end.”

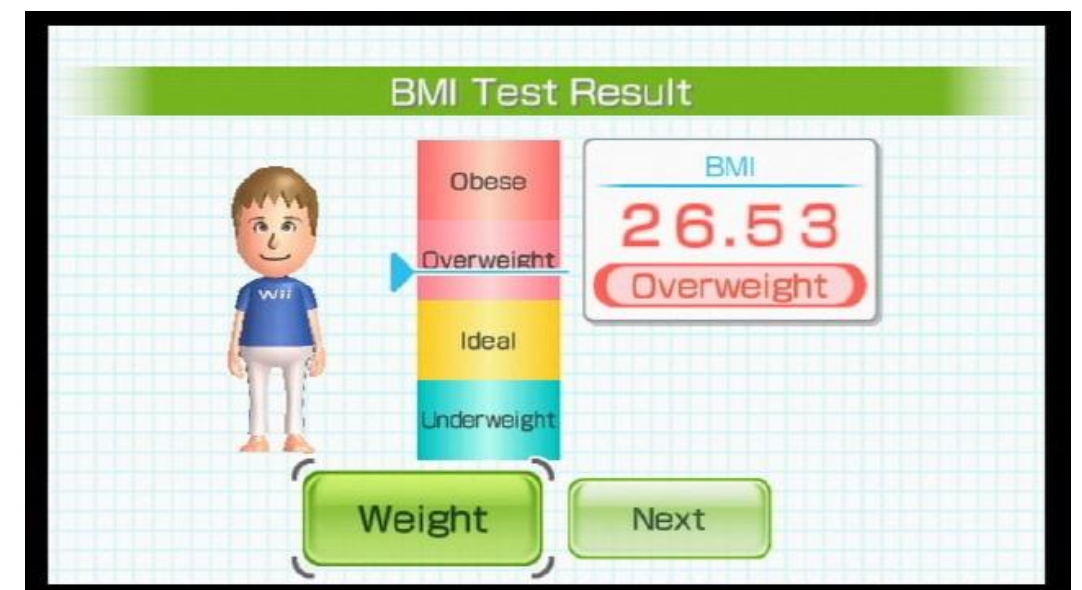
Logos and Games

A skilled practitioner of logos will spend most of his or her time asking questions, rather than speaking.

e.g. If the goal of the game is fitness, you could ask the user:

1. Are you happy with the way you look?
2. Do you have enough energy to do the things you like?
3. Do you feel healthy now?
4. Do you think you'll be healthy in 10 years?
5. Are you a healthy role model for your kids?

For each negative response, there is a simple argument to start a fitness program.



Logos and Games

Because changing someone's mind is very hard, it is better if they change it themselves. The logos approach is:

A: I don't have enough energy to enjoy myself after work.

B: What would help?

A: Eating better I guess, working out, getting more sleep...

B: What stops you from working out more?

A: Hmm, finding the time, paying fees that I don't use up...

B: I wonder how (friend who is very fit) manages...

A: They work out with (other friend). Hadn't thought of that, but that's a good idea. (Another friend) was looking for a racketball partner. I guess I could play a few games...

Pathos

Pathos is argument by emotion. Pathos includes *sympathy* and *empathy*, which have the same linguistic root.

We already saw several examples of pathos in the presidential and VP speeches – what were they?

Pathos

More examples:

S. Palin: “I think a good barometer here, as **we** try to figure out has this been a good time or a bad time in America's economy, is go to a kid's soccer game on Saturday, and turn to any parent there on the sideline and ask them, "How are you feeling about the economy?"

“And I'll bet you, you're going to hear some fear in that parent's voice, fear regarding the few investments that some of **us** have in the stock market. Did **we** just take a major hit with those investments?”

Pathos

B. Obama “Because, in the faces of those young veterans who come back from Iraq and Afghanistan, I see my grandfather, who signed up after Pearl Harbor, marched in Patton's army, and was rewarded by a grateful nation with the chance to go to college on the G.I. Bill.”

“In the face of that young student, who sleeps just three hours before working the night shift, I think about my mom, who raised my sister and me on her own while she worked and earned her degree, who once turned to food stamps, but was still able to send us to the best schools in the country with the help of student loans and scholarships.”

Pathos and Games

The Sims cultivates players' empathy with the game characters.



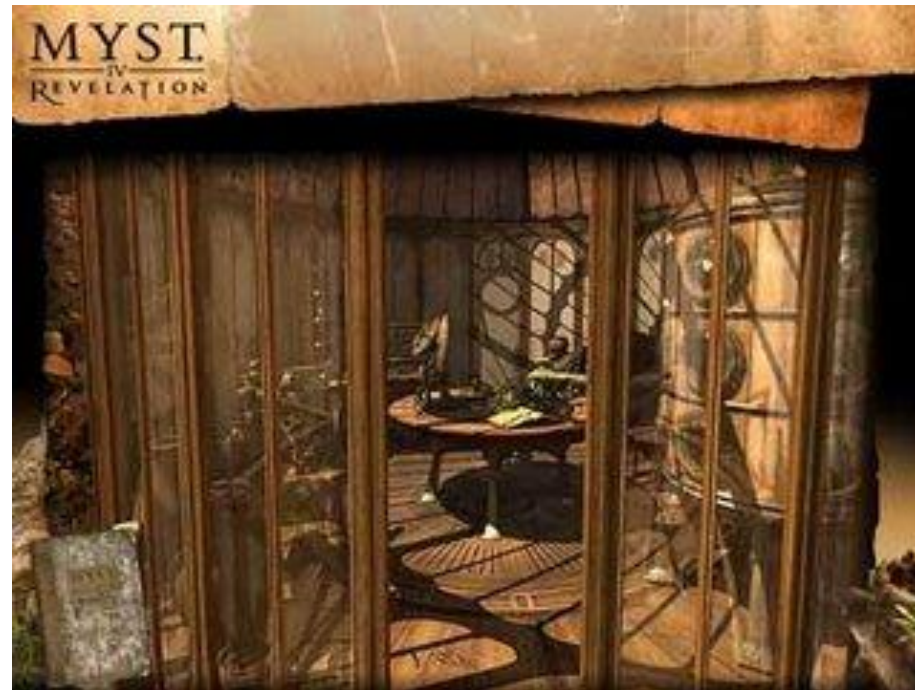
It exposes their:

- Personality
- Aspirations
- Wants/needs
- Relationships



Pathos and Games

Myst's backstory is a struggle for your trust by two brothers.



Pathos and Games

Nintendo has done a particularly good job of designing empathetic characters.



But how to apply pathos for persuasion in games?

Overview

- Rhetoric – the art of persuasion by dialog.
- **The psychology of persuasion.**
- Persuasion and interactivity.

The Psychology of Persuasion

1. Law of Reciprocity
2. Law of Contrast
3. Law of Friends
4. Law of Expectancy
5. Law of Association
6. Law of Consistency
7. Law of Scarcity
8. Law of Conformity
9. Law of Power

Law of Reciprocity

When someone gives you something of perceived value, you desire to give them something in return:

- Christmas cards
- Tips
- Rides
- Dinner
- “Free” samples...



This is hard to apply generally because it seems to require a human correspondent.

Law of Contrast

Differences between items are exaggerated when they are placed close in space or time.

Most often used to “stretch” a purchase.

- “Look at the \$90,000 house before the \$120,000 house.” The latter looks much better, and is likely to push the buyer toward the larger purchase.
- Order dessert after all other courses.
- Options on a car or PC individually cost very little compared to the item itself.



Law of Contrast

Can also be used to encourage an action:

- Sale items always contrast with non-sale items to encourage a purchase.



- XYZ phone: \$400
XYZ phone with 1 year unlimited service: \$400.
- Buy one, get one free.

Law of Contrast

Serious game application(?)

Present a hard exercise regimen before offering the user an easier one.

Emphasize the improvements through conserving X additional watts of electricity over plan Y .

...



Law of Friends

A “friend” in this context is someone we believe to have our best interests at heart. We are strongly motivated to do what friends ask us for.

Law of Expectancy

When someone we respect or like expresses an expectation about how we behave, we will want to fulfill it.



Personified Agents

There are several attempts in using human incentives in some games. E.g. Xbox and Wii fit's fitness coaches.



Law of Association

We favor products or services that are endorsed by people we like or respect.



Law of Consistency

People will stand by verbal or written commitments they have made.

This is one of the most versatile persuasive principles.

It's a key aspect of **Logos** arguments, which seek to extract commitments from the listener.



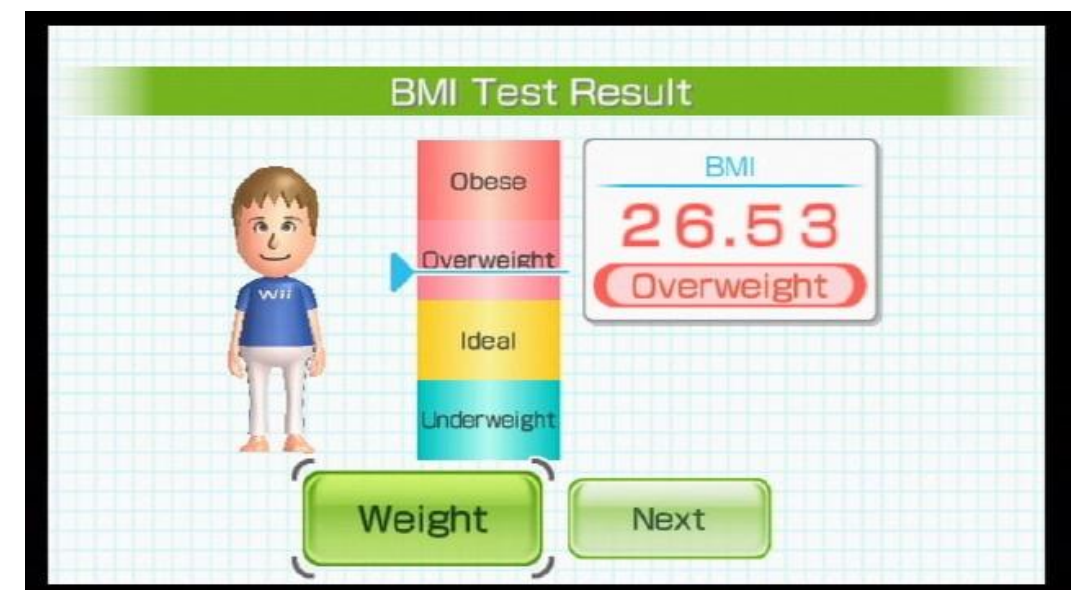
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For each negative response, there is a simple argument to start a fitness program.



Law of Consistency

UI and game designers can make use of this principle to influence users.

Consider these menu dialogs:

- I would like to exercise 1 per day: YES/NOT SURE
- I will switch to salads for lunch every DAY/WEEK/?

Users can only commit in one direction. If they do, their behavior will gradually change.

They cannot reinforce negative feelings about exercise

Law of Scarcity

People ascribe higher value to things they perceive as scarce. E.g.

- Clearance Sale
- Limited edition
- We have another offer on the house...
- Playing “hard to get”



Law of Scarcity

Games often have hidden features that are “unlocked” by game play.

Players are motivated to get these sometimes only because of their scarcity.



Law of Conformity

Also called “social proof”. We strongly tend to make choices similar to those of a large fraction of our peer group.

A weak version of this idea is implemented by Amazon and others as “people who liked the items in your shopping basket also liked...”

Works much better when you know the people, or believe them to be like you.

Law of Conformity

Many examples on Facebook – which is itself a powerful persuasive medium

facebook Profile edit Friends ▾ Inbox (9) ▾ home account privacy logout

"13,644,308 Sq ft Saved - March 2008 donation made!" Updates | FAQ | Discuss

HELP FIGHT GLOBAL WARMING!
TOGETHER, WE CAN MAKE A DIFFERENCE.

+ Save more rainforests!

Personal Rainforest Saved*: 0 Sq ft
GreenBucks: 70

Send Plants Green Patch Marketplace Store Top Greenies Green Lifestyle Green Chat

Send more Plants to receive more Plants! View Omar's Green Wall

YOUR GREEN PATCH HAS A CHIPMUNK NIBBLING ON PLANTS

adlucent
Apply today - Award-winning office, full benefits, no cubicles, unlimited red bull - all in the live music capital of the world.
More Ads | Advertise

FB Toolbar
NEW: Get a Facebook Toolbar For IE Now! Install Now

*: Our sponsors contribute money to save the Rainforests as you use this application

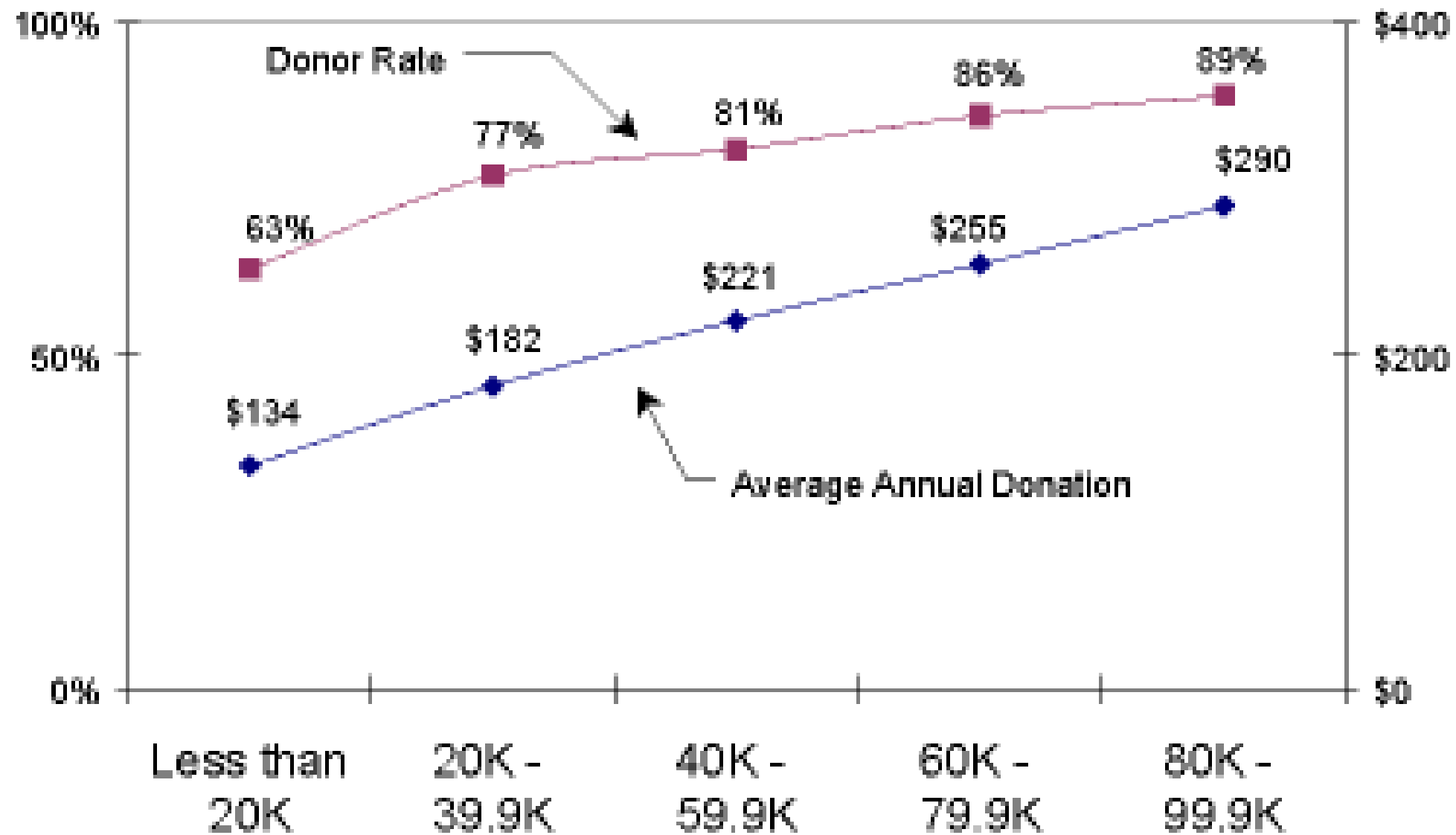
COULD YOU PLEASE FEED THE CHIPMUNK SOME NUTS?

Buy Buy Buy Buy Buy Buy

Law of Conformity

Where do you fit on this plot?

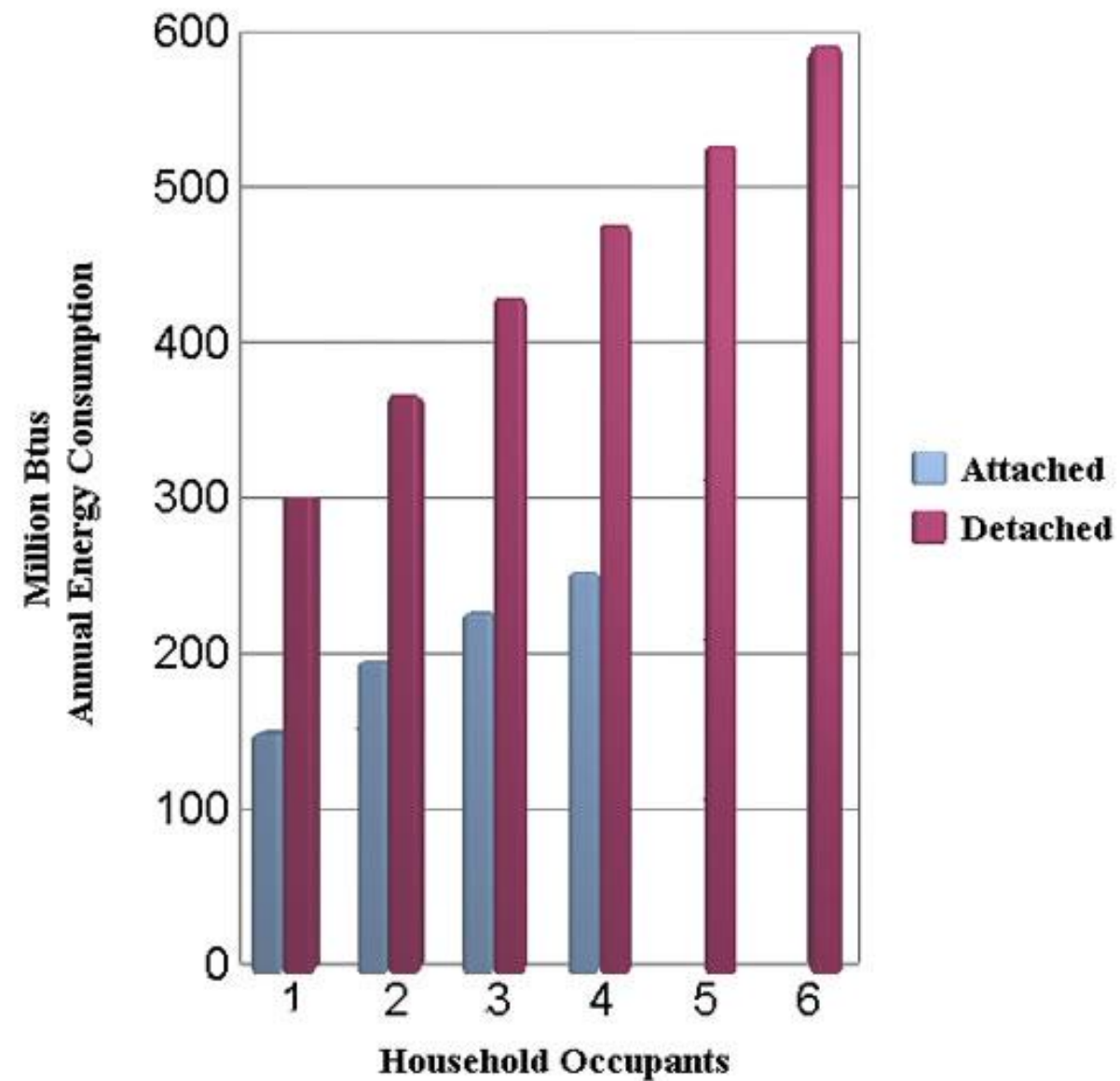
Percentage of Canadian Population Making Donations
and Average Annual Donation by Household Income



Law of Conformity

Or this one?

Figure 25. Average Energy Intensity by Occupancy



Law of Conformity

For UI or game design, the designer can enhance influence by choosing to tell the user about peers that have already made a positive decision.

Personal messages (with user identity) are more effective than anonymous ones.

Some peers are more influential than others. These “opinion leaders” can improve persuasion, and they can often be identified automatically.

Law of Power

We are strongly influenced by people we perceive as having greater authority, strength or expertise.

- Physicians
- Church leaders
- Professors
- Auto Mechanics
- The president
- People who act authoritatively*



General techniques

1. Law of Reciprocity
- 2. Law of Contrast**
3. Law of Friends
4. Law of Expectancy
5. Law of Association
- 6. Law of Consistency**
- 7. Law of Scarcity**
- 8. Law of Conformity**
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Inter-personal techniques

- 1. Law of Reciprocity**
2. Law of Contrast
- 3. Law of Friends**
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Overview

- Rhetoric – the art of persuasion by dialog.
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- **Persuasion and interactivity.**

Motivation



Alice

Mom, my friend Betsy is going to a rock concert next Saturday and invited me to go along. It's a concert by one of my favorite bands and I really want to go. It's going to be in the city about an hour away. It'll end pretty late at night so it would be best if one of us drove. Betsy's parents are taking her car on a trip, so I'll need to borrow your car.

Goal: To borrow mom's car to attend a rock concert.

Motivation



Alice

Mom, my friend Betsy is going to a rock concert next Saturday and invited me to go along.

Where is it?

It's going to be in the city about an hour away

How are you going to get there?

It'll end pretty late at night so it would be best if one of us drove.

Is Betsy driving?

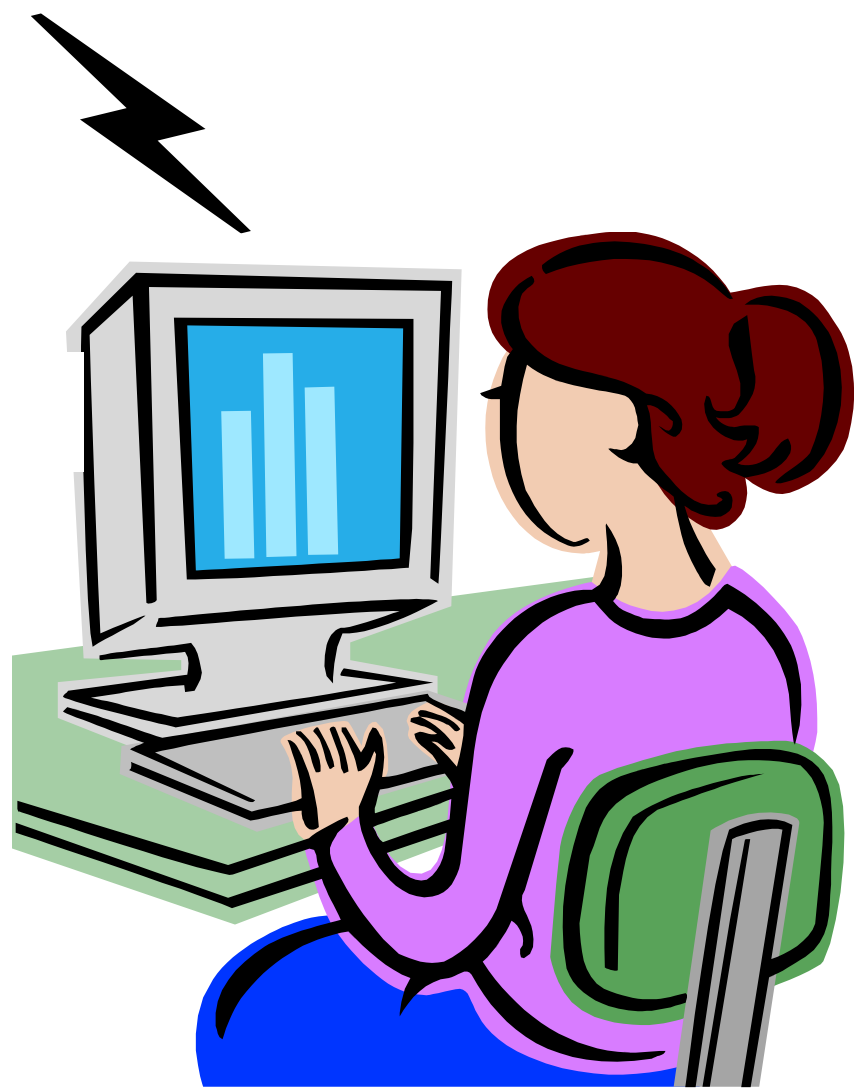
Betsy's parents are taking her car on a trip, so I'll need to borrow your car.

The Question (Version 0.0)

Which method should Alice choose?

- (1) All the information right up front
- (2) Short relevant responses to prompts

How does this translate to the design of persuasive interfaces?

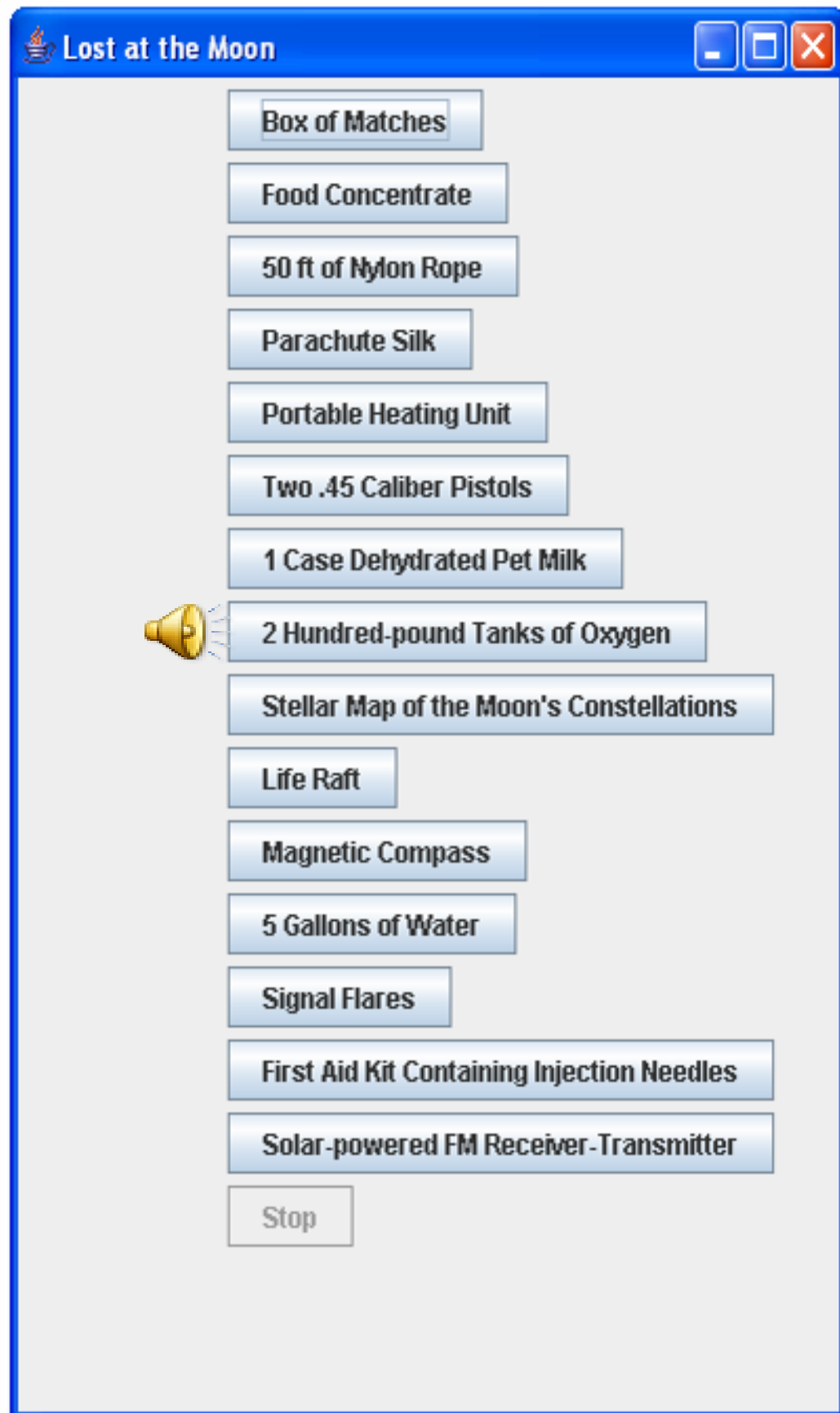


Recorded Message System



Dialogic System

System A: Recorded Message

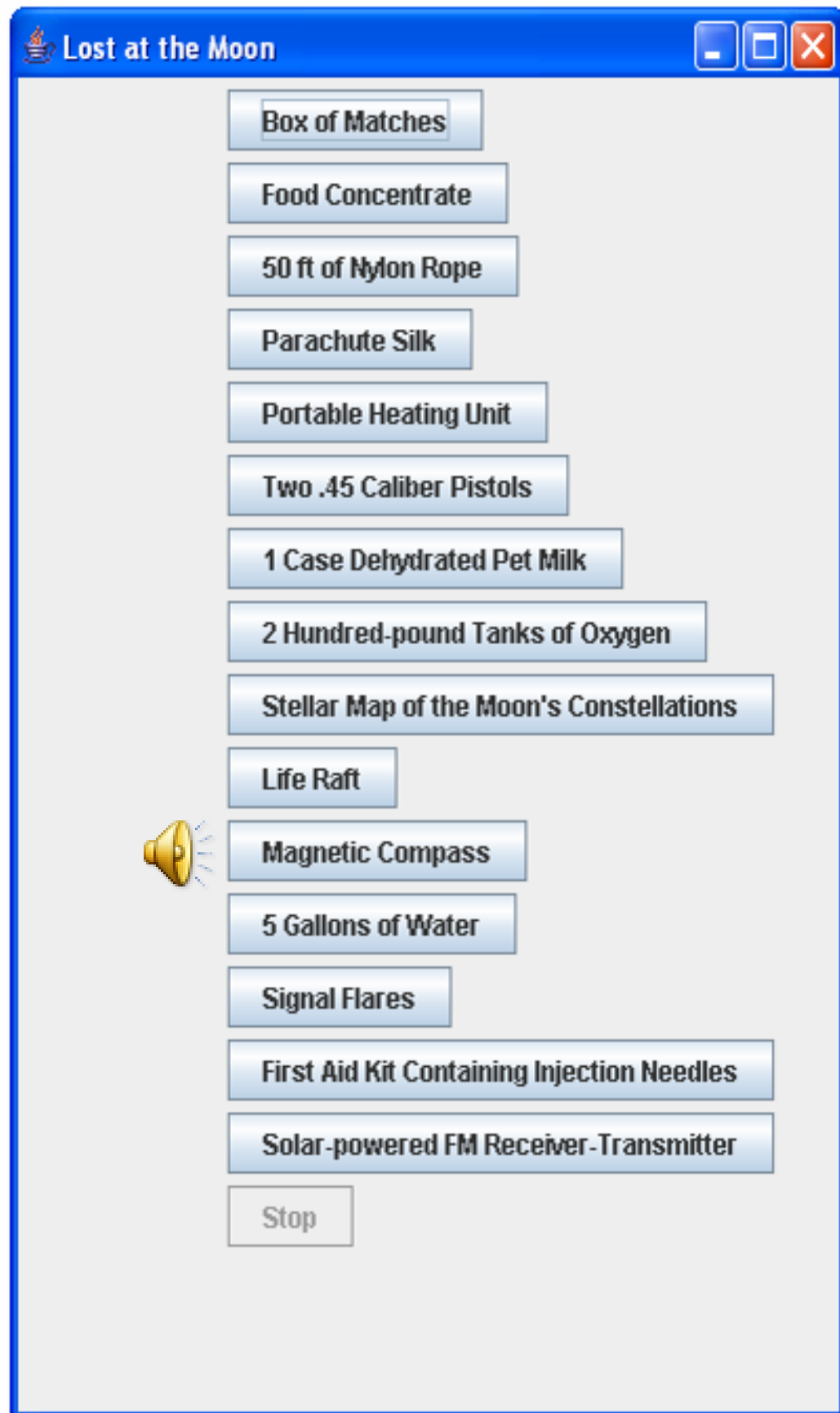


Lost at the Moon

- Box of Matches
- Food Concentrate
- 50 ft of Nylon Rope
- Parachute Silk
- Portable Heating Unit
- Two .45 Caliber Pistols
- 1 Case Dehydrated Pet Milk
- 2 Hundred-pound Tanks of Oxygen**
- Stellar Map of the Moon's Constellations
- Life Raft
- Magnetic Compass
- 5 Gallons of Water
- Signal Flares
- First Aid Kit Containing Injection Needles
- Solar-powered FM Receiver-Transmitter
- Stop

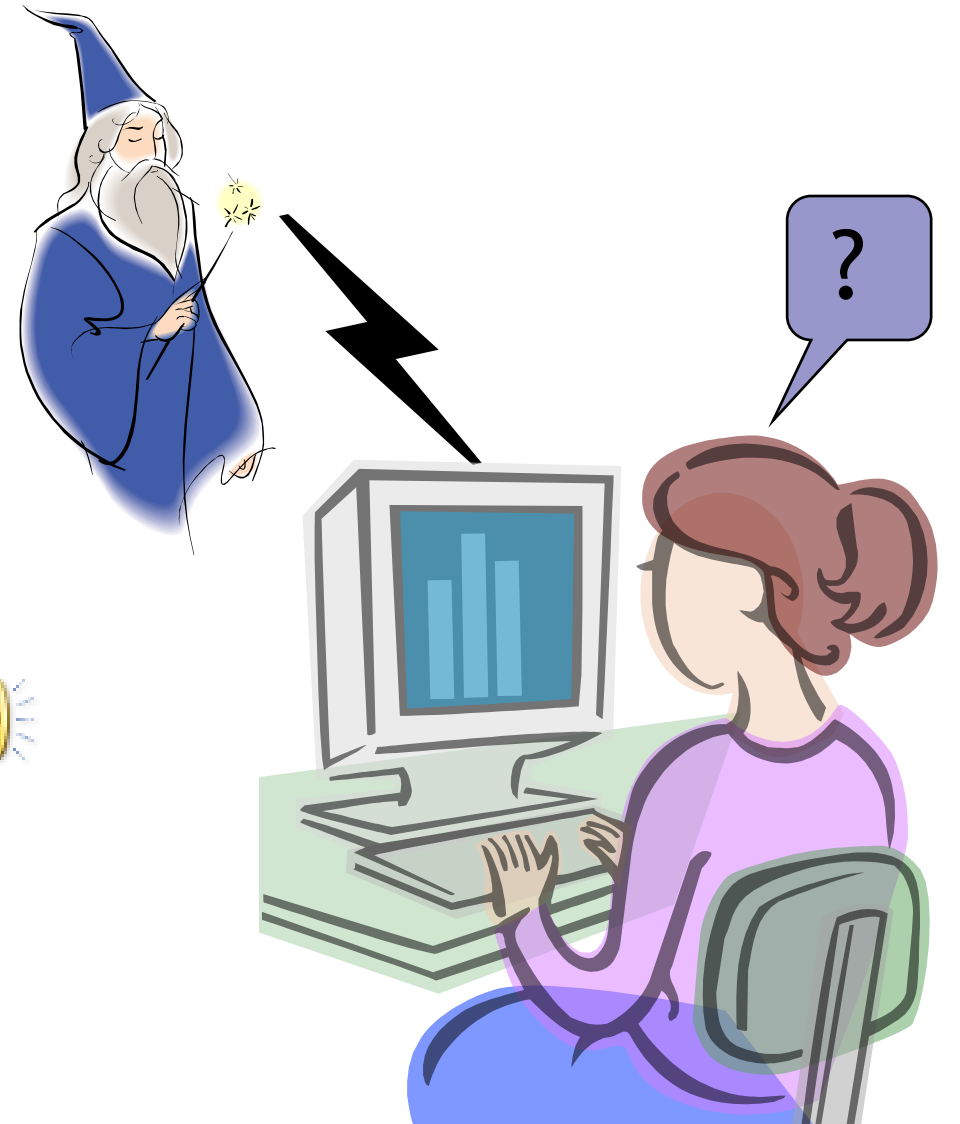
This is clearly the most important item on the list. Oxygen is absolutely essential for life support. There's no way we'll survive the trek to the mother ship without it, even if we know where it is. We'll die without it. Oxygen is number one.

System A: Recorded Message



It's so crucial to find our way back to the mother ship before our resources like oxygen run out. We need everything possible to help us find our way to the mother ship. Clearly the compass is the only tool we've got to point us in the right direction. So the order should go signal flares for the mother ship to find us and then magnetic compass for us to at least head in the right direction towards it.

System B: Dialogic



How could we use the signal flares? 📢

Will the life raft be useful? 📢

Hypotheses

- I. The dialogic system will be more persuasive than the recorded message system.

- II. Participants using the dialogic system will receive less information than those using the recorded message system.

Results

Comparison of Persuasive Force across Systems

Measure	Effect Size*	P-value (t-test)	P-value (Perm)
Spearman Rank Coefficient	0.5011	p = 0.0379	p = 0.0380
Kendall's Tau	0.4612	p = 0.0507	p = 0.0527
Spearman's Footrule	0.5849	p = 0.0193	p = 0.0191
DS	0.5977	p = 0.0176	p = 0.0181

*Effect size = difference between persuasive forces ($\mu_{\text{dialogic}} - \mu_{\text{recorded message}}$)

Comparison of Amount of Information Heard across Systems

Number of Statements	Effect Size	P-value (t-test)
102	3.223	p < 10e ⁻¹⁷

Revisiting Hypotheses

I. The dialogic system will be more persuasive than the recorded message system.

II. Participants using the dialogic system will receive less information than those using the recorded message system.

Summary

- Rhetoric
 - Ethos, Logos, Pathos
- The psychology of persuasion
 - 9 principles and application to games
- Persuasion and interactivity
 - Dialogic presentation of information is more persuasive.