Psych 131
Fall 2015

Presentation 14: Framing

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What is framing?

Many ideas have *alternative framings*

Example 1:

"Susan is better at tennis than Pam"

"Susan isn't as bad at tennis as Pam"

Example 2:

"48 is essentially 50"

"50 is essentially 48"

People *choose the framing* to suit their current purposes

What are the *consequences of framing*?

Framing an idea

To frame an idea is …

to *assume* certain concepts in common ground

to *represent* the idea *in relation to* those concepts

But what concepts?

Norms, points of reference, etc.

Framing often presupposes …

- normal (vs. abnormal) states
- standard (vs. non-standard) states
- points of reference, landmarks
- immutable (vs. mutable) states

We *prefer* to frame ideas in relation to …

- normal, standard, immutable states
- points of reference, landmarks

Examples of framing

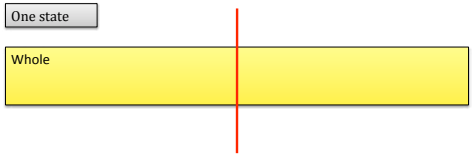
1. Negation
   Entrenched
   Denials
2. Conceptual reference points
3. Social norms
4. Gain and loss
5. Expected, unexpected

Negation

The story of

2

Take a universe. Divide it in two.



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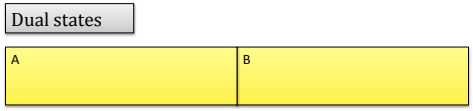


Two-part relations

whole	"A ***and*** B"
possibilities	"A ***or*** B"
parts	"A" "B" "***not***-B" "***not***-A"

Two-part relation of interest

negation	"**not**-A"

Two types of negation

Part 1: Entrenched negation

kind-unkind

many-few

Part 2: Pragmatic negation

"Ann isn't here"

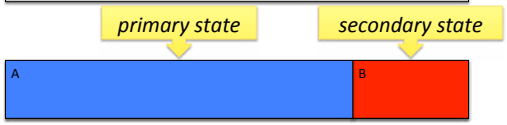
"I'm not a crook" (Richard M. Nixon, president of the US)

"I'm not a witch" (Christine O'Donnell, 2010 candidate for Senate)

Entrenched negation

Dual states tend to be asymmetric

- It's hard to ***divide*** wholes into ***equal parts***
- It's hard to ***maintain*** dual states of ***equal size***
- Dual states become ***asymmetric***

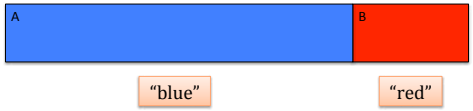


How best to label dual states

1. Binomial system:

A. primary label ("blue")

B. secondary label ("red")



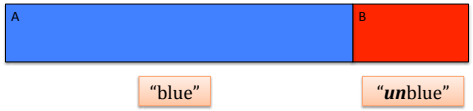
Optimal when: size(A) = size(B)

How best to label dual states

2. ***Primary-stem*** system:

A. primary stem alone ("blue")

B. primary stem + ***negation*** ("unblue")



Optimal when: size(A) >> size(B)

How best to label dual states

3. ***Secondary-stem*** system:

A. secondary stem + ***negation*** ("unred")

B. secondary stem alone ("red")

Optimal: never

Three systems of labels

System	A	B
1. Binomial	"blue"	"red"
2. Primary-stem	"***blue***"	"un***blue***"
3. Secondary-stem	"un***red***"	"***red***"

Same system for concepts

System	A	B
1. Binomial	[blue]	[red]
2. Primary-stem	[blue]	[not [blue]]
3. Secondary-stem	[not [red]]	[red]

Big questions

Entrenched, conventional codes reflect …

optimal solutions to

recurrent problems of coordination (Lewis, 1959)

So …

Big question

Why do dual states become ***asymmetric***?
Why have all languages evolved …
- *happy-**un**happy*, but not *sad-**un**sad*?
- *true-**un**true*, but not *false-**un**false*?
- and many other such pairs

Lexical negation

1. Words with ***negative prefixes, suffixes***
   *happy-**un**happy*
   *fruitful-fruit**less***
2. Words with ***negative interpretations***
   *long-**short***
   *many-**few***
3. Words with ***negative entailments***
   *remember-**forget***
   *with-**without***

Negative prefixes

Adjectives	un-	*able-unable*
	in-	*possible-impossible*
	a-	*typical-atypical*
	dis-	*honest-dishonest*
	non-	*intuitive-non-intuitive*
Verbs	un-	*button-unbutton*
	dis-	*mount-dismount*
	mis-	*understand-misunderstand*
	de-	*emphasize-deemphasize*
Nouns	non-	*human-nonhuman*
	un-	*truth-untruth*

Zimmer's hypothesis (Zimmer, 1964)

Adjectives that allow *un-*, *in-*, etc., are primarily:
1. ***positive in evaluation*** (good, desirable)
2. *not* ***negative in evaluation*** (bad, undesirable)

Examples:
- You find: ***unhappy, unintelligent***
- You don't find***: unsad, unstupid***

Strong evidence from:
- English, German, Russian, French
- other languages

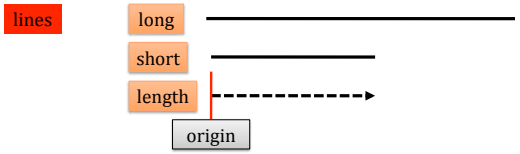
Actually: von Jhering, 1883; Wundt, 1886; Jespersen, 1942; Zimmer, 1964.

Greenberg's refinement

Positive-negative pairs (like *happy-unhappy*) belong to a large set of pairs (like *happy-sad*) in which:
- A is semantically ***unmarked***
- B is semantically ***marked***

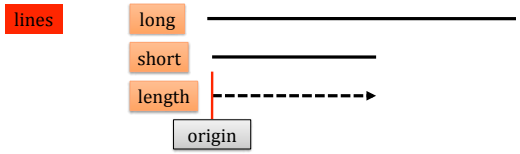
Greenberg, 1966; see also Lyons, 1977

Long is unmarked, *short* is marked



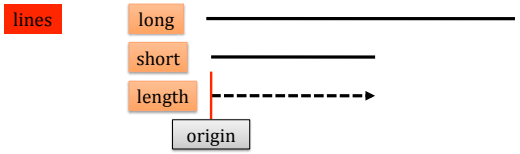
1. Neutral question	How *long* is the line?
2. Non-neutral question	How *short* is the line?
3. Name of dimension	*length* (not *shortness*)
4. Antonym may be ***missing***	(there is no *unsteep*)

Long, short as concepts (Clark, 1969)



Long and short	***measurement***
Standard measurement	in ***long*** direction
Non-standard measurement	in ***short*** direction

Long as *positive*, short as *negative* (Clark, 1972)



Type	***Word***	***Concept***
unmarked term	"long"	[long-wise]
marked term	"short"	[***not*** [long-wise]]

Common conceptual asymmetries

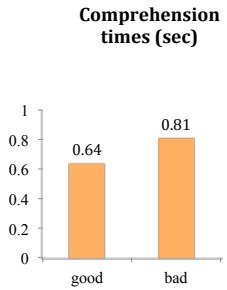
Perception	
amount	*much-little*
number	*many-few*
distance	*far-near*
height	*high-low*
length	*long-short*
height	*tall-short*
width	*wide-narrow*
thickness	*thick-thin*
depth	*deep-shallow*
loudness	*loud-soft*

Evaluation	
goodness	*good-bad*
happiness	*happy-sad*
strength	*strong-weak*
health	*healthy-sick*
cleanliness	*clean-dirty*
honesty	*honest-**dis**honest*
kindness	*kind-**un**kind*
politeness	*polite-**im**polite*
morality	*moral-**im**moral*
legality	*legal-**il**legal*

Evidence in processing time

Comprehension time for:
Unmarked adjective
Abel is *better* than Baker
Marked adjective
Abel is *worse* than Baker

Similar times for:
high-low, tall-short, deep-shallow, thick-thin
more-less, many-few
good-bad, happy-sad



Times for other entrenched negatives

Verbs
John ***remembered*** to let the dog out
John ***forgot*** to let the dog out
Adjectives
It was ***thoughtful*** of John to let the dog out
It was ***thoughtless*** of John to let the dog out
Adjectives
The hole is ***present***
The hole is ***absent***

Times for other entrenched negatives

Prepositions
The star is ***above*** the line
The star is ***below*** the line
Conjunctions
Flip the switch ***and*** the fan goes on
Flip the switch ***or*** the fan goes on
Implicatures
Can you make the circle blue?
Must you make the circle blue?

What makes some states *base states*?

Base states are …	***primary***	***secondary***
1. standard	healthy	unhealthy
2. expected	*student*	*non-student*
3. good	*good*	*bad*
4. specifiable	*Christian*	*non-Christian*
5. extendable	*long*	*short*
6. majority	*many*	*a few*
	others?	

Cultural norms, common points of reference

Unmet challenges

Why do dual states tend to be ***asymmetric?***
Why do word pairs reflect this asymmetry?
positive word ➔ primary state
negative word ➔ secondary state
Why are negative words (and concepts) …
harder to process?
more complex?

Pragmatic negation

Two types of syntactic negation

Simple denials
The boy isn't happy
I'm not a witch

Quantified denials
Few of my friends went to the party (vs. a few)
Not all of the students voted last week

Affirmative assertions

A to B: "The boy is sad"

I assert ***x***:

***x* = [*boy is sad*]**

This ***updates*** A and B's current common ground

Supposition-denial model

A to B: "The boy isn't happy"

You might suppose:

***x* = [*boy is happy*]**

I assert:

[not [x]]

This ***matches*** A and B's assumed state in common ground

This ***updates*** A and B's common ground

Supposition-denial model

A to B: "The boy isn't happy"

specifies

boy is happy	boy is {neutral or sad}
base state	***counter state***

Base state is the state expressed in the utterance
Counter state is the *other* part of the dual state

Counter states often vague

	base state	***counter state***
"The door isn't closed"	**closed**	open
"The boy isn't happy"	**happy**	{neutral, sad}
"My car isn't blue"	**blue**	{red, silver, white, yellow, black, maroon, …}

Implications

Supposition is expected to …
- match addressee's *current* beliefs or assumptions
- or be ***plausible*** in current common ground

Actual state is generally ***not inferable***
- not blue ➔ {unknown color}
- not happy ➔ {neutral, sad}
- not closed ➔ open

Evidence

plus isn't above star

+
*

Instruction:
Is the sentence true of the picture?
yes ***no***

Evidence

plus isn't above star

+
*

specifies

plus is above star	plus is elsewhere
base state	***counter state***

Evidence

plus isn't above star

+
*

specifies

plus is above star — look for → + *

base state

1. base ***matches*** picture
2. "yes" so far
3. but base is ***denied***
4. hence "no"

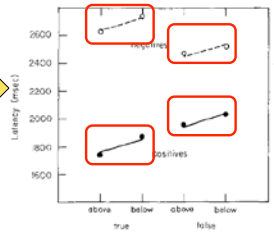
Evidence

plus isn't above star

+
*

base ***matches*** picture

base ***mismatches*** picture



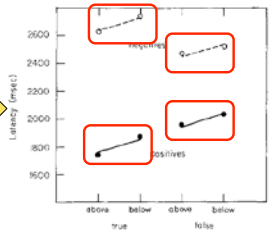
Evidence

plus isn't above star

+
*

base is ***denied***

base is ***affirmed***



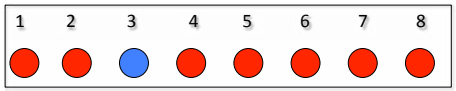
Other evidence (Clark, Chase, Just, Carpenter)

Types of denials
Plus isn't above line
Line isn't below plus
Plus isn't present
Plus isn't east
Few of the dots are red

Viewing conditions
Read sentence first
View picture first
Hide top or bottom of display

Measurements
Verification time
Eye gaze
Spontaneous descriptions

Evidence of plausibility (Wason, 1965)



Supposition: "Circle of interest is probably red"

1. *Plausible* denial : "Number 3 isn't red"
2. *Implausible* denial: "Number 4 isn't blue"

"Fill in the blank"

1. Number 3 is not … ***1.96 sec***
2. Number 4 is not … ***2.53 sec***

Case studies of pragmatic negation

Case study 1: What we believe (Gilbert, 1991)

Daniel Gilbert

"Is there a difference between believing and merely understanding an idea?"

Descartes says, "yes"

Acceptance and rejection of idea are outcomes of effortful assessment

Spinoza says, "no"

Acceptance of idea is ***automatic*** in comprehension

Rejection comes ***later*** with effort

Gilbert's claim:

Spinoza is right

Gilbert's evidence is dubious

Evidence (Wegner et al.)

People read "Bob Talbert is not linked to the Mafia"
People later report ***negative impression*** of Talbert

Gilbert's account

People "occasionally end up believing the very assertions they hear denied!"

Alternative account

Speaker supposes:
"***You may think*** Talbert is linked to Mafia" (*base*)
Speaker implies:
It is **plausible** that Talbert is linked to Mafia
Hence speaker implies: Talbert is ***suspect***

Case study 2: Monitoring thoughts (Wegner, 1994)

"Don't think of a white bear"

People report thinking of white bears ***more often***

"Don't think of pink elephants"

People report thinking of pink elephants ***more often***

Supposition-denial account

Wegner account

Monitoring thoughts is special process with "ironic effects"

Denial: "I am not to think of a white bear"

base state: ***x = [I think of a white bear]***
command: ***not [x]***

Test: Am I thinking of a white bear?

I compare ***current thought*** against:
[I think of a white bear]
To do that, I need: ***[I think of a white bear]***
Hence: I am thinking of a white bear

Case 3: Trying to eliminate "not"

Kaup & Zwaan's simulation model

In understanding a denial,
"first, ***simulate*** the negated state of affairs"
"second, ***simulate*** the actual state of affairs"

Example

Laura was wearing either a pink or blue dress
"Laura wasn't wearing her pink dress"
1. simulate image with pink dress
2. simulate image with blue dress

Evidence

early: probe fast to *pink*
later: probe fast to *blue*

Case 3: Can "not" really be eliminated?

Problem 1: People retain suppositions

"A few of Ed's friends left. They were mad at him."
they = the friends who left
"Few of Ed's friends left. They wanted more beer."
they = the friends who didn't leave
Same denotation, ***but*** different focus
You need base + denial to represent this

Problem 2: Two simulations incompatible

"There is no eagle in the sky"
You need to represent two scenes simultaneously:
1. A scene ***with an eagle***
2. A scene ***without an eagle***

How do you know which scene is which?

Negation in many psychological theories:

Concept	Example	Comparison
Regret	I shouldn't have gone	I should have gone
Inaction	I didn't do that	I did that
Risk	It isn't safe to do that	It's safe to do that
Fiction	I like Rhett Butler	I like Clark Gable
Make-believe	I'm not Herb Clark. I'm Clark Kent, and soon I'll be Superman	I'm Herb Clark. I'm not Clark Kent or Superman
Irony	How nice he was!	How mean he was!
Imagining	I am imagining seeing a dog barking at me	I am seeing a dog barking at me

Summary

Denials have two parts
1. ***base state***, expressing a current supposition
2. ***denial*** of base state

Problems arise when …
- ***pragmatics*** of denials ***ignored***
- ***counter state*** assumed to be ***identifiable***

The proposition [***not***] isn't itself …
- picturable
- embodiable

Norms and regret

Undoing a fatal road accident

Subjects were given a story describing a ***fatal road accident***, in which a truck driven by a drug-crazed teenager ran a red light and crashed into a passing car, killing Mr. Jones, its occupant.

The following instructions were given:

> As commonly happens in such situations, the Jones family and their friends often thought and often said "If only …" during the days that followed the accident. How did they continue that thought?
>
> Please write one or more likely completions.

(Kahnemann, Miller)

Undoing a fatal road accident

Abnormal route version

> On the day of the accident, Mr. Jones left his office at the regular time. He sometimes left early to take care of home chores at his wife's request, but this was not necessary on that day. Mr. Jones did not drive home by his regular route. The day was exceptionally clear and Mr. Jones told his friends at the office that he would drive along the shore to enjoy the view.

Over 80% responses mentioned ***abnormal route***:
- "If only he hadn't gone by the shore"

Undoing a fatal road accident

Abnormal time version

> On the day of the accident, Mr. Jones left the office earlier than usual, to attend to some household chores at his wife's request. He drove home along his regular route. Mr. Jones occasionally chose to drive along the shore, to enjoy the view on exceptionally clear days, but that day was just average.

Over 80% responses mentioned ***abnormal time***
- "If only he hadn't left early"

Regret is based on actions taken

Mr. Jones almost never takes hitch-hikers in his car. Yesterday he gave a man a ride and was robbed.
Mr. Smith frequently takes hitchhikers in his car. Yesterday he gave a man a ride and was robbed.

Who do you expect to experience greater regret over the episode?
Mr. Jones 88% Mr. Smith 12%

Who will be criticized most severely by others?
Mr. Jones 23% Mr. Smith 77%
(N = 138)

(Kahnemann, Miller)

Normal vs. abnormal

States are often judged as either …
1. *normal* ***[x is normal]***
2. *abnormal*, exception ***[not [x is normal]***

How *could* things be different?

We prefer to undo *abnormal* states
[not [x is normal] ➔ ***[x is normal]***

We have more *regret* over *abnormal* actions taken

Social norms

Questions imply a social norm (Schwarz)

German students asked,
1. "How many hours do you watch TV daily?"
2. "How many hours does the average German watch TV daily?"
3. "How important is TV in your leisure time?" (0 to 10 scale)

"Hours" estimated on two scales
- Low category range
- High category range

"How many hours do you watch TV daily?"

hours	percent
up to ½	7.4
½ to 1	17.7
1 to 1½	26.5
1½ to 2	14.7
2 to 2½	17.7
over 2½	16.2

hours	percent
up to 2½	62.5
2½ to 3	23.4
3 to 3½	7.8
3½ to 4	4.7
4 to 4½	1.6
over 4½	0.0

	low range	high range
TV by average German	2.7 hours	3.2 hours
Importance of TV	4.6	3.8

Questions imply a social norm (Schwarz)

German students asked:

1. "How frequently do you have sexual intercourse?" or "masterbate?"
2. "How satisfied are you with your current relationship with your partner?" (1 to 11 scale)
3. "How frequently does the typical student have intercourse?" or "masterbate?"

Frequency estimated on two scales

Low frequency range

High frequency range

"How often do you have sex/masterbate?"

High frequency range
several times a day
once a day
3 to 4 times a week
twice a week
once a week
less than once a week

low frequency range
several times a week
once a week
once every two weeks
once a month
less than once a month
never

	intercourse		masterbate	
Frequency range	high	low	high	low
at least once a week	77%	38%	69%	42%
typical student freq/week	10.6	7.8	9.1	7.1
satisfied with relationship?	8.6	8.6	9.8	7.3

Social norms

1. Questions are framed in terms of social norms
2. Respondents …
   a) recognize the norms
      on TV watching
      on sexual behavior
   b) make judgments based on these norms
      of satisfaction with leisure activity
      of satisfaction with their current relationship

Decision frames

Framing influences decisions

How does framing of a decision influence people's choice?

Classic demonstration by Tversky, Kahneman (1981)

One problem, two framings

1. Positive framing
2. Negative framing

Asian disease: Positive framing

Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed.

Assume that the exact scientific estimate of the consequences of the programs are as follows:

If ***Program A*** is adopted, 200 people will be saved.

If ***Program B*** is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved.

Which of the two programs would you favor?

A 72%

B 28%

Asian disease: Negative framing

Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed.

Assume that the exact scientific estimate of the consequences of the programs are as follows:

If ***Program C*** is adopted 400 people will die.

If ***Program D*** is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.

Which of the two programs would you favor?

C 22%

D 78%

Two treatments for lung cancer

Survival frame

Surgery: Of 100 people having surgery

- 90 live through the post-operative period,
- 68 are alive at the end of the first year and
- 34 are alive at the end of five years.

Radiation Therapy: Of 100 people having radiation therapy

- all live through the treatment,
- 77 are alive at the end of one year, and
- 22 are alive at the end of five years.

Two treatments for lung cancer

Mortality frame

Surgery: Of 100 people having surgery

- 10 die during surgery or the post-operative period,
- 32 die by the end of the first year and
- 66 die by the end of five years.

Radiation Therapy: Of 100 people having radiation therapy,

- none die during treatment,
- 23 die by the end of one year and
- 78 die by the end of five years.

Preferences for treatment

Survival frame

Surgery	82%
Radiation therapy	18%

Mortality frame

Surgery	56%
Radiation therapy	44%

Framing in decisions

Tversky, Kahneman:

"Outcomes are commonly perceived as positive or negative in relation to a reference outcome that is judged neutral.

Variations of the reference point can therefore determine whether a given outcome is evaluated as a gain or as a loss."

Same effects in …

medical diagnoses

choice of medical treatments

choices in union bargaining

Framing

Two common alterative framings:

positive ➔ base, normal state

"The boy is sad"

"400 people will live"

negative ➔ not-base, abnormal state

"The boy isn't happy"

"200 people will die"

Positive, negative framings differ in …

meaning, processing

decisions, undoing, regret

Conclusions