



Ethics: Choices and Values

QUALITY

5.0

DIFFICULTY

1.0



CS101



AWESOME

May 21st, 2015

Attendance: **Not Mandatory** Grade: **A** Textbook: **Yes** Online Class: **Yes**

This class was awesome. A beginner like me that ~~has never done~~ anything further than facebook on a computer, Professor Nick was very clear and easy to listen to. I very much enjoyed the lectures and how easy it was to learn from such a great teacher. Thank you for all that you do



2



1



You Have The Power to Find Out!



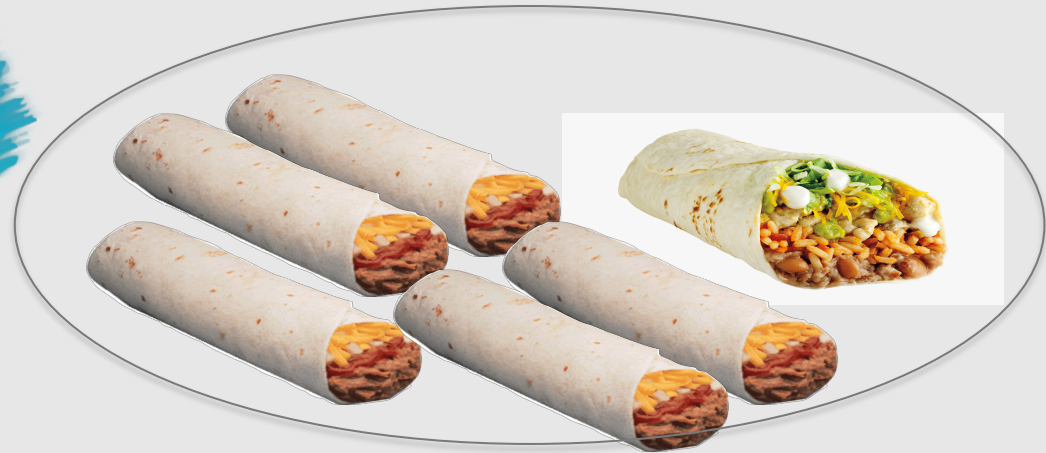
A large, diagonal teal brushstroke graphic with a white rectangular border, positioned on the left side of the slide.

What is Bias?

Difference between measured results and “true” value

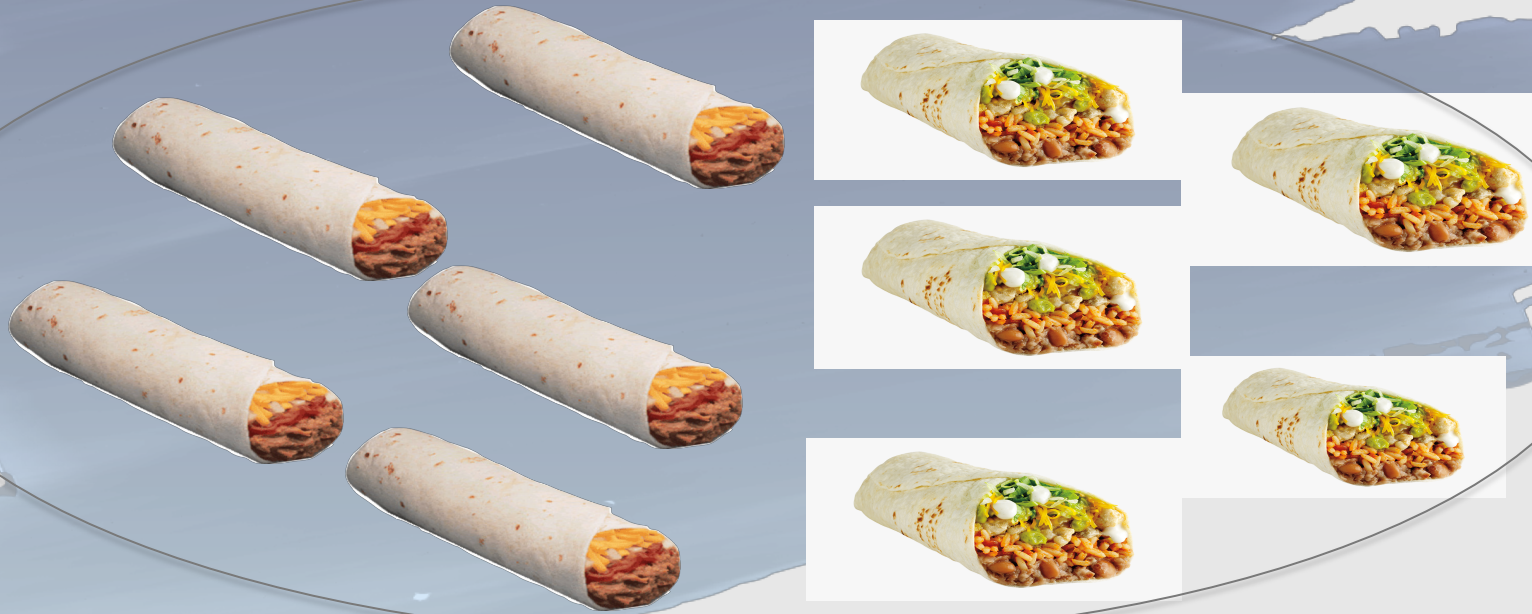
What is Bias?

Difference between measured results and “true” value





Sampling Bias: Learn More in Future CS Classes!



What Kinds of Bias Raise
Ethical Concerns?






Discriminatory
Bias

**Biased Measurement or
Classification**

**+ use of that bias to compound
existing injustice or fail to treat
all as having equal moral worth**

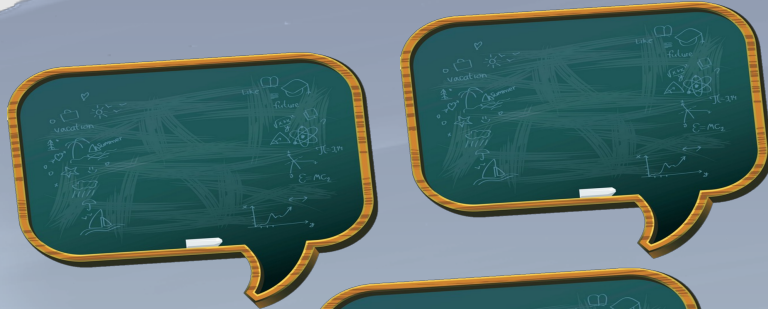
=> Unfair Bias

The image features a light gray background. Overlaid on this is a large, horizontal, textured purple brushstroke that has a rough, painterly edge. Centered within this purple stroke is a white rectangular frame with a thin border. Inside the frame, the text "How might this definition of bias help us understand ratings?" is written in a white, sans-serif font, arranged in three lines.

How might this definition
of bias help us
understand ratings?

Equality of Opportunity:

everyone has same opportunity to develop skills needed for the job, apply for the job, and get promoted.



Parity: Everyone is equally likely to be a good teacher, so we should expect to end up with number of good teachers (and high rankings) proportionate to population.



Simulating loan decisions for different groups

Drag the black threshold bars left or right to change the cut-offs for loans.
Click on different preset loan strategies.

Loan Strategy

Maximize profit with:

MAX PROFIT

No constraints

GROUP UNAWARE

Blue and orange thresholds
are the same

**DEMOGRAPHIC
PARITY**

Same fractions blue / orange loans

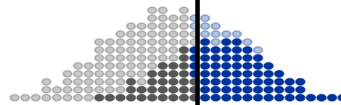
**EQUAL
OPPORTUNITY**

Same fractions blue / orange loans
to people who can pay them off

Blue Population

0 10 20 30 40 50 60 70 80 90 100

loan threshold: 59

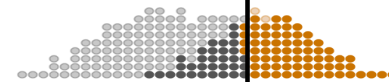


denied loan / would default denied loan / would pay back granted loan / defaults granted loan / pays back

Orange Population

0 10 20 30 40 50 60 70 80 90 100

loan threshold: 53



denied loan / would default denied loan / would pay back granted loan / defaults granted loan / pays back

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FAIRNESS BEYOND THE NUMBERS

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CS



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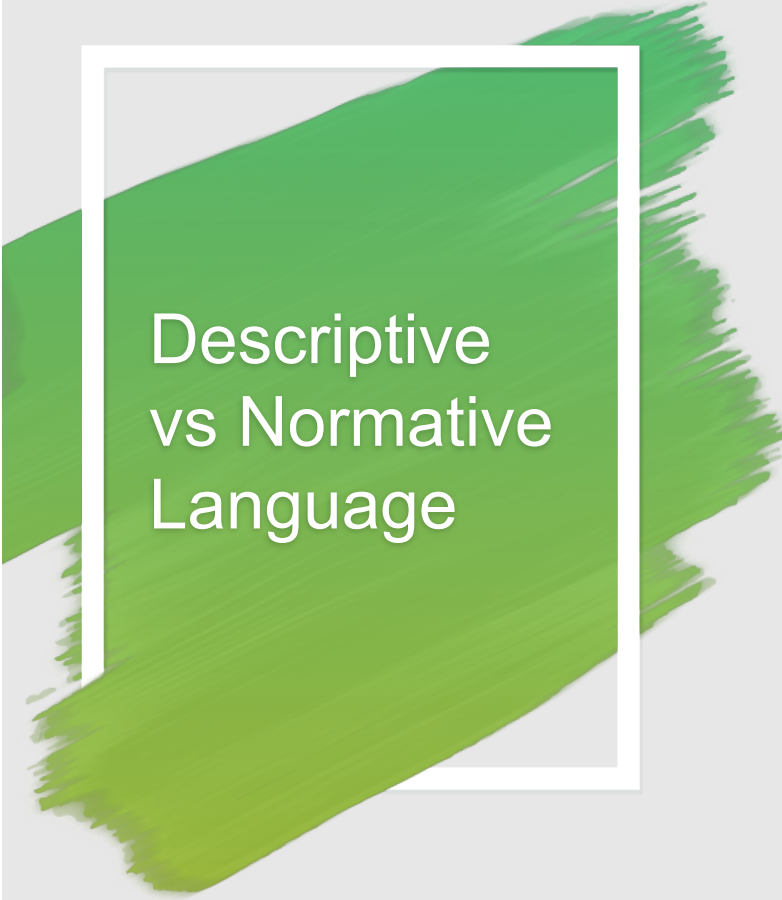
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GREAT TEACHER





Descriptive vs Normative Language

Descriptive Language:

- is
- was
- what happened
- what people did

Normative Language:

- right
- Wrong
- Good
- Bad
- Should
- Should not

Descriptive or Normative?

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Descriptive

Normative



Thick Normative Terms

“Thick”
normative
terms are both
descriptive and
normative

Examples:

- Cowardly :
cautious
- Polite : (?)
- Rude : (?)
- Chill
- Kind
- etc



Thick Normative Terms & Fairness

- We compare people in many ways, not just numerically
- Thick normative terms express “loaded” judgments



Descriptive or Normative?

Mark Zuckerberg on whether Facebook would fact-check false claims about election suppression:

1. “We have a different policy, I think, than Twitter on this.”
2. “You know, I just believe strongly that Facebook shouldn’t be the arbiter of truth of everything that people say online.”
3. “I think in general private companies probably shouldn’t be—or, especially these platform companies—shouldn’t be in the position of doing that.”



Descriptive or Normative?

Not surprising that statements setting the policy for platforms would be normative.

What about the programs behind the platforms themselves?

Do programs like the ones you are writing contain normative claims or values?



“

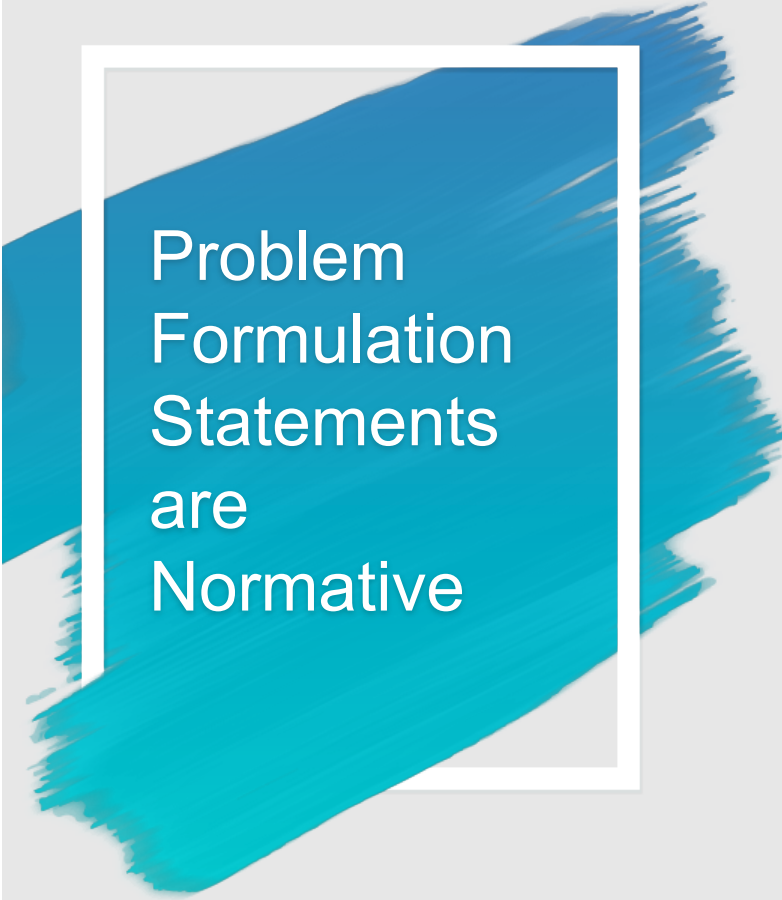
How are values
embedded in design?

”



1. Problem Formulation Embeds Values

Formulating a problem means describing
the desired solution as good or worthy
of being done.

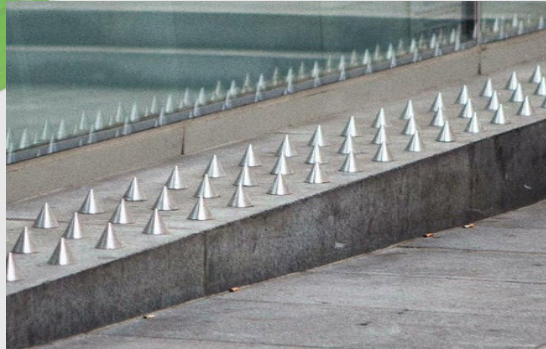


Problem Formulation Statements are Normative

- Formulating a problem means describing the desired solution as good or worthy of being done.
- What is the problem to be solved?
- For whom is this a problem? Who would benefit from its solution?
- Who can agree that this is a problem worth solving?

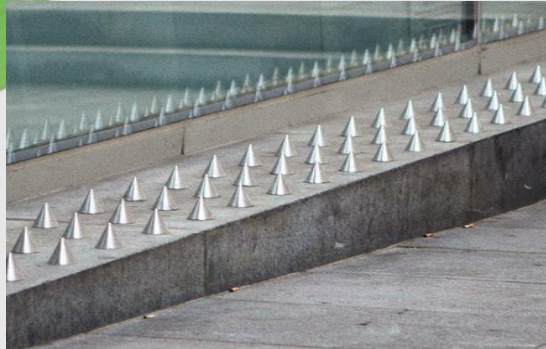
What is the
Problem to
be Solved?

“Homeless people are
sleeping here and we
(who is we?) want them
to stop”



What is the Problem to be Solved?

“Homeless people are sleeping here and we (who is we?) want them to stop”



“Some people in our community don’t have a place to sleep and we (who is we?) think they should”



Problem Formulation: Ratings & Search

RATE A
professor



A large, diagonal yellow brushstroke graphic with a white border, containing the text 'Formulating a Ratings Problem'.

Formulating a Ratings Problem

A blue rectangular box with a black inner rectangle containing the text 'RATE A professor'.

RATE A
professor

- What are the problem(s) to be solved?
- For whom are these problems? Who would benefit from their solution(s)?
- For each problem, who can agree that the problem is worth solving?

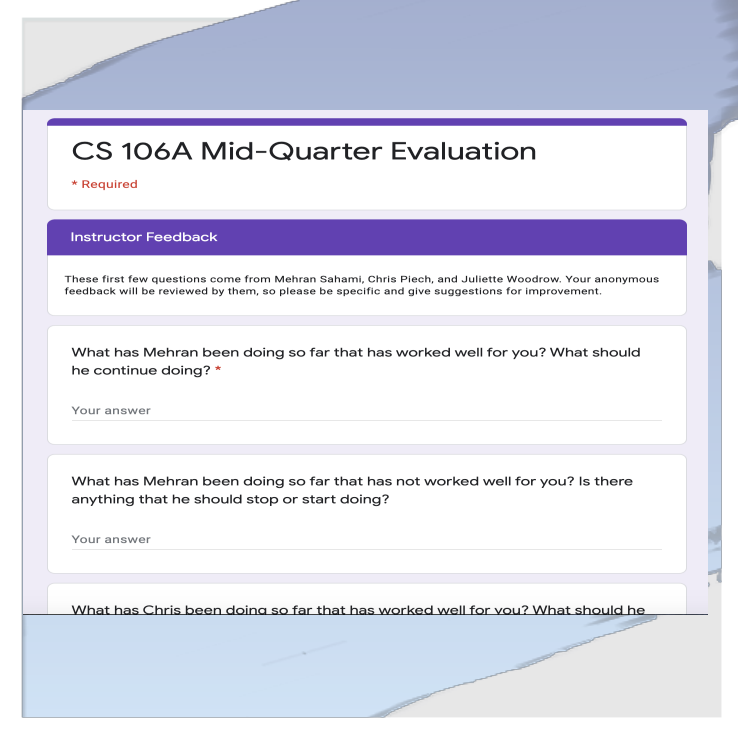
Formulating a Search Problem



- What are the problem(s) to be solved?
- For whom are these problems? Who would benefit from their solution(s)?
- For each problem, who can agree that the problem is worth solving?

2. Choice of Data Embeds Values

- Surveys are cheap to run
- They measure opinions
- What are other ways to measure quality of professors?



The image shows a screenshot of a survey form titled "CS 106A Mid-Quarter Evaluation". The form is overlaid on a background of blue and purple brushstrokes. The survey is divided into sections with purple headers. The first section is titled "CS 106A Mid-Quarter Evaluation" and includes a red asterisk and the word "Required". The second section is titled "Instructor Feedback" and contains a paragraph of text: "These first few questions come from Mehran Sahami, Chris Piech, and Juliette Woodrow. Your anonymous feedback will be reviewed by them, so please be specific and give suggestions for improvement." The third section is titled "What has Mehran been doing so far that has worked well for you? What should he continue doing? *" and includes a text input field labeled "Your answer". The fourth section is titled "What has Mehran been doing so far that has not worked well for you? Is there anything that he should stop or start doing?" and includes a text input field labeled "Your answer". The fifth section is titled "What has Chris been doing so far that has worked well for you? What should he" and is partially cut off.

CS 106A Mid-Quarter Evaluation

* Required

Instructor Feedback

These first few questions come from Mehran Sahami, Chris Piech, and Juliette Woodrow. Your anonymous feedback will be reviewed by them, so please be specific and give suggestions for improvement.

What has Mehran been doing so far that has worked well for you? What should he continue doing? *

Your answer

What has Mehran been doing so far that has not worked well for you? Is there anything that he should stop or start doing?

Your answer

What has Chris been doing so far that has worked well for you? What should he

Under- representation and the Long Tail

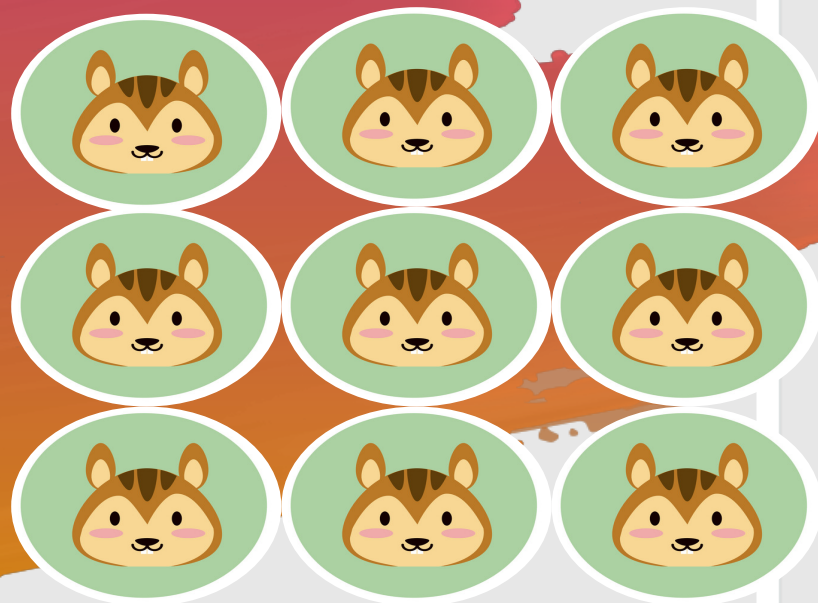
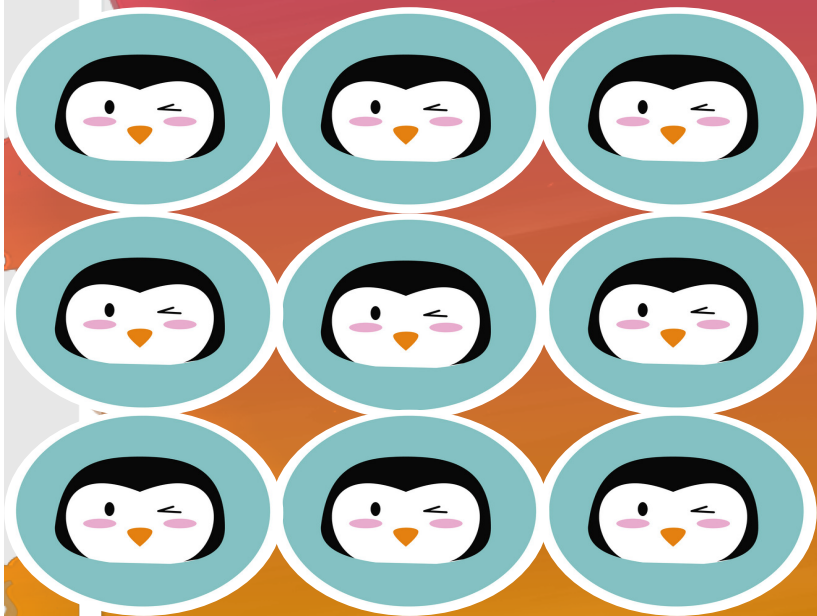


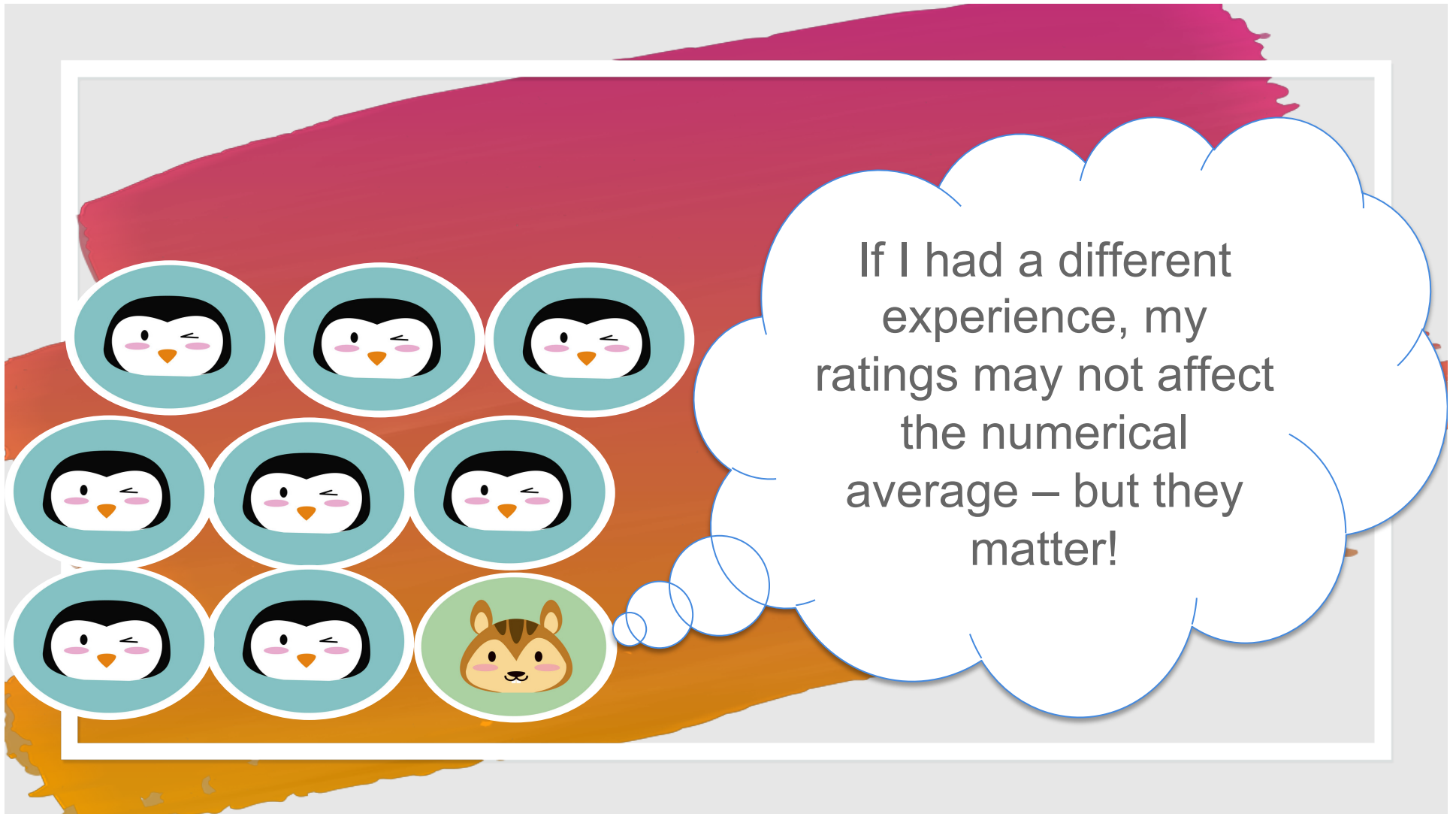
Unicode covers
over 1 million symbols,
Full coverage of 90 languages,
basic coverage for 200 languages

The screenshot shows the Unicode website's 'Adopt a Character' page. On the left is a navigation menu with links: 'Adopt a Character', 'Emoji', 'Basic Info', 'News', 'Events', 'Connect', 'Membership', and 'Press'. The main content area features a grid of character cards, each with a symbol and its Unicode point. The first row includes U+30ED, U+15D2, U+2666, U+043E, U+2690, and U+2B07. The second row includes U+FF0F, U+2B1C, U+1F490, U+2639, U+263B, and U+13EA. Below the grid, there is a section for 'Everyone in the world should be able to use their own language on phones and computers.' with a link to 'LEARN MORE ABOUT UNICODE'. The bottom row of the grid includes U+0994, U+05E9, U+0E07, U+1D25, U+51F8, and U+0B37. The final row includes U+203F, U+1F60A, U+03CE, U+127F, U+060F, and U+1557.

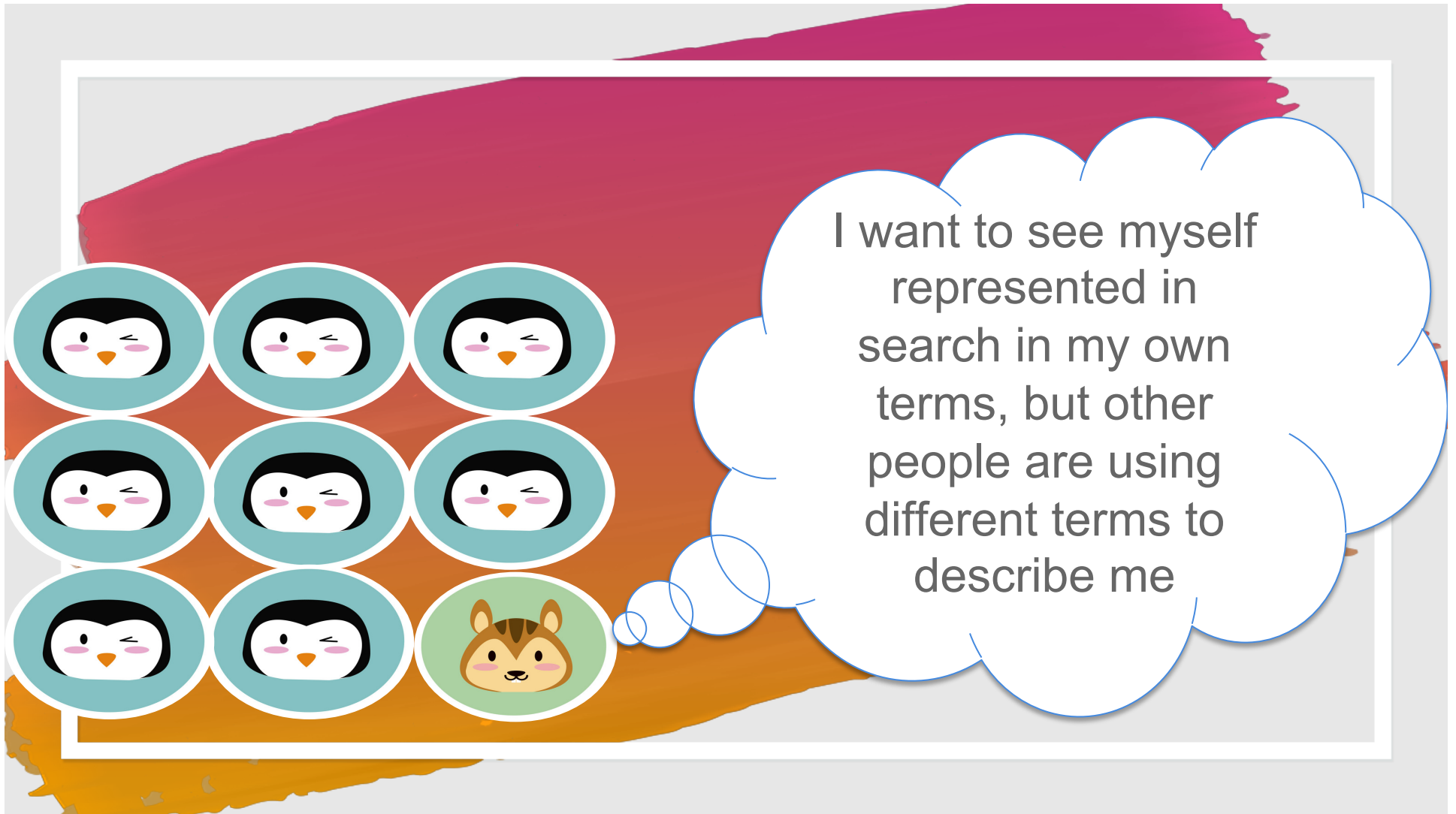
U+30ED	U+15D2	U+2666	U+043E	U+2690	U+2B07
U+FF0F	U+2B1C	U+1F490	U+2639	U+263B	U+13EA
Everyone in the world should be able to use their own language on phones and computers. LEARN MORE ABOUT UNICODE					
U+0994	U+05E9	U+0E07	U+1D25	U+51F8	U+0B37
U+203F	U+1F60A	U+03CE	U+127F	U+060F	U+1557

Representation & Surveys

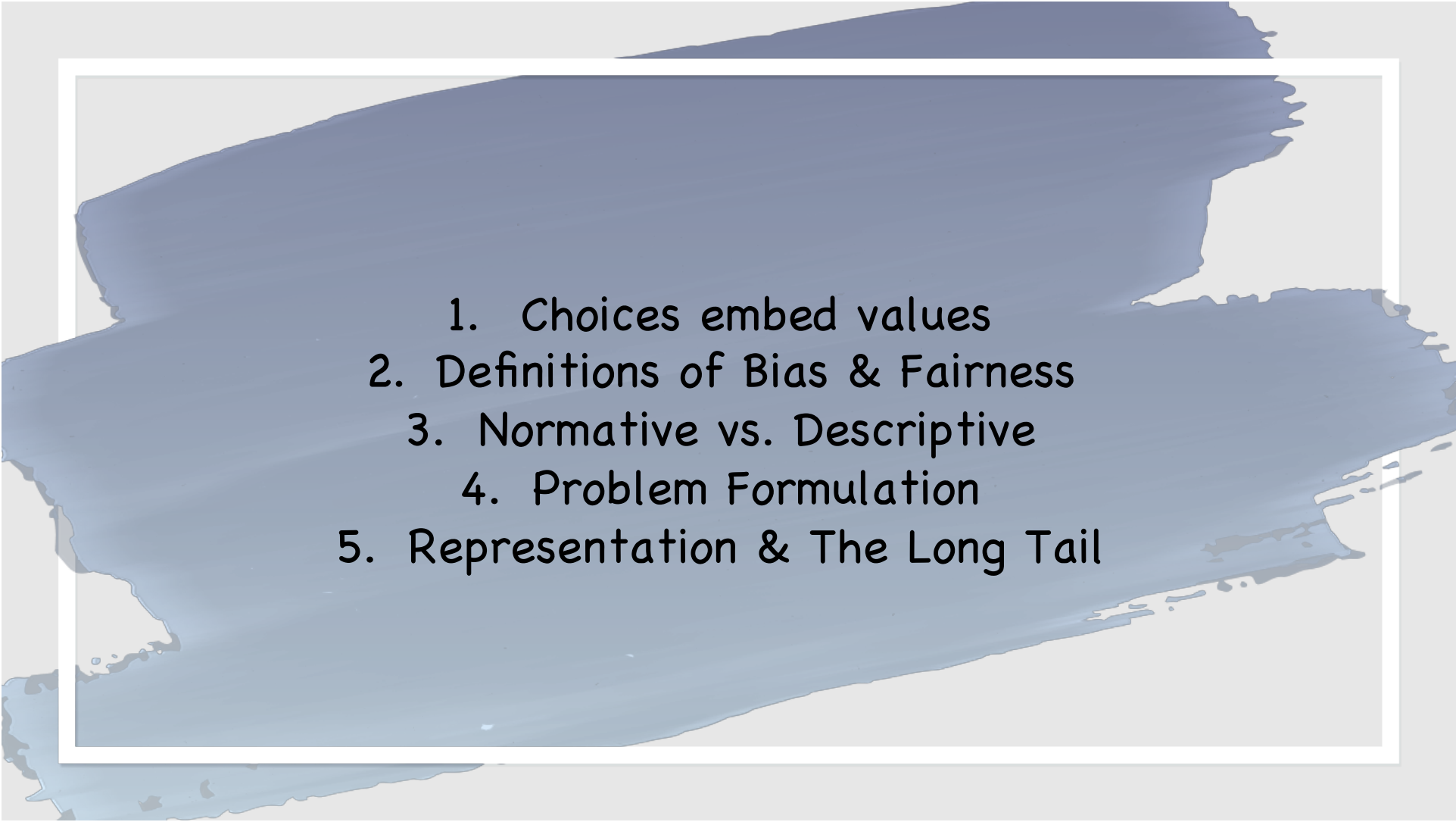




If I had a different
experience, my
ratings may not affect
the numerical
average – but they
matter!



I want to see myself represented in search in my own terms, but other people are using different terms to describe me

- 
1. Choices embed values
 2. Definitions of Bias & Fairness
 3. Normative vs. Descriptive
 4. Problem Formulation
 5. Representation & The Long Tail



Questions?

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