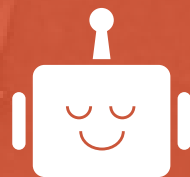




DESIGNING FOR BRAINS: THE PSYCHOLOGY OF UX DESIGN

MARISSA EPSTEIN

Marissa



Lullabot

STRATEGY // DESIGN // DEVELOPMENT

DESIGNING FOR BRAINS

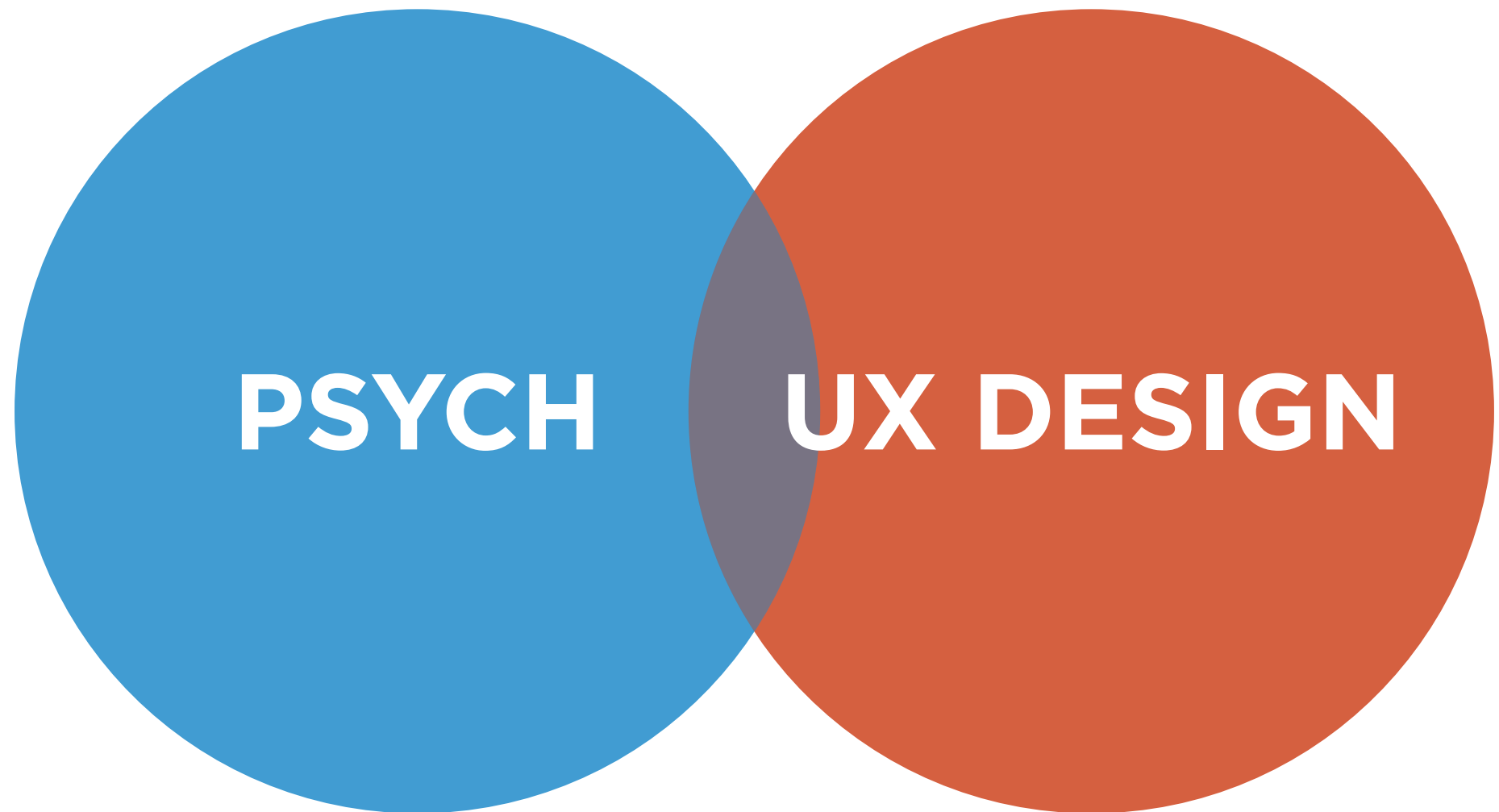




UX DESIGN



UXReactions

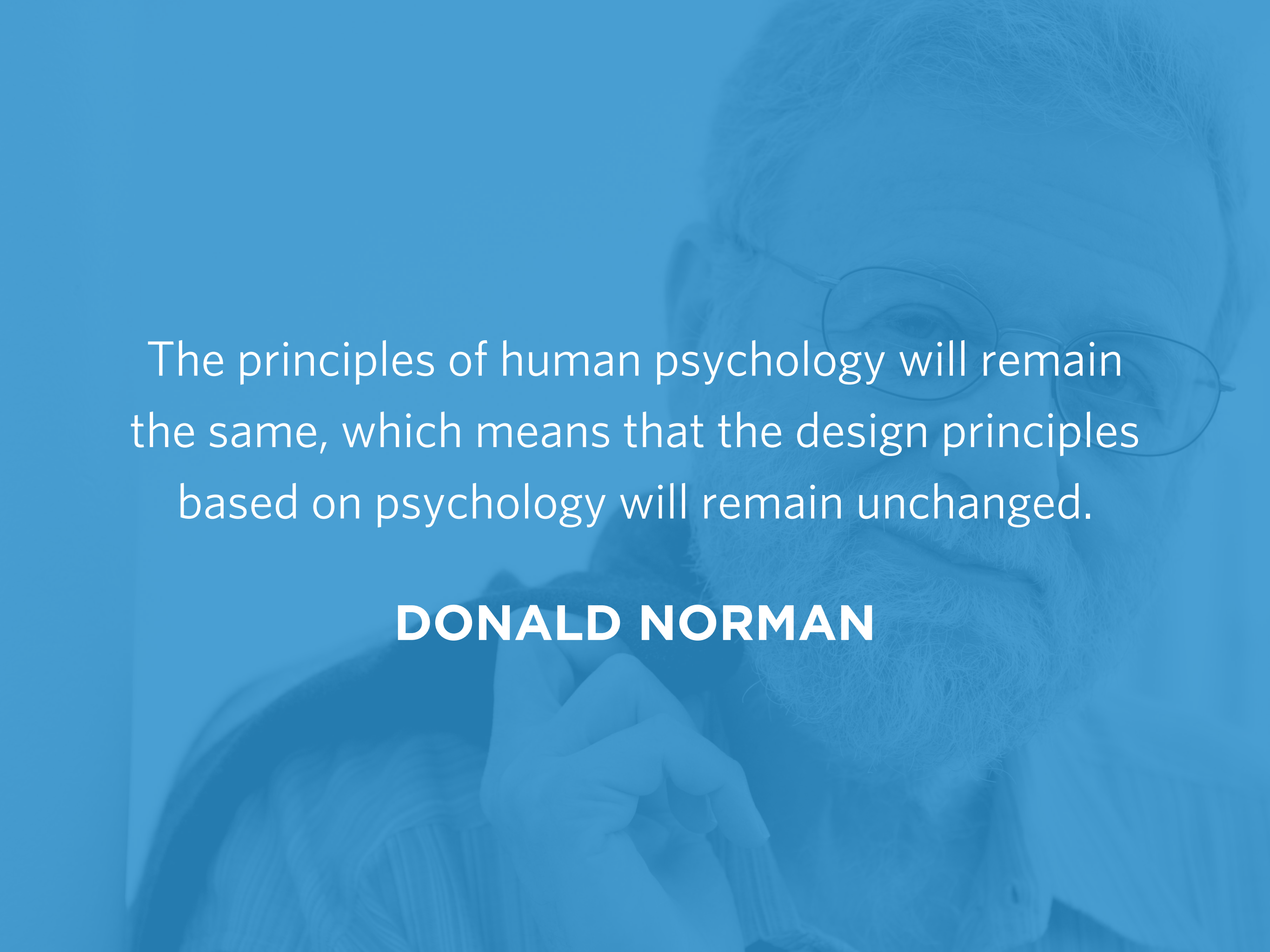


A large, solid orange circle is centered on a white background. Inside the circle, the text "UX DESIGN" is written in a bold, white, sans-serif font.

UX DESIGN



DONALD NORMAN



The principles of human psychology will remain the same, which means that the design principles based on psychology will remain unchanged.

DONALD NORMAN



PSYCH

“PSYCHOLOGIST HAT”



**KNOW YOUR USERS'
ERRORS, BIASES,
& LIMITS**

SORRY I'M NOT SORRY



PERSONA 1



Elderly
Eleanor

"I don't even know what that is, but don't worry about it."

Age: 82

Location: Madison, ME

Education: High School

Occupation: Retired

Starting MS-DOS...

C:\>_



PERSONA 2



Average
Joe

*"I'm still figuring out how to
set it up."*

Age: 57

Location: Boca Raton, FL

Education: Bachelors

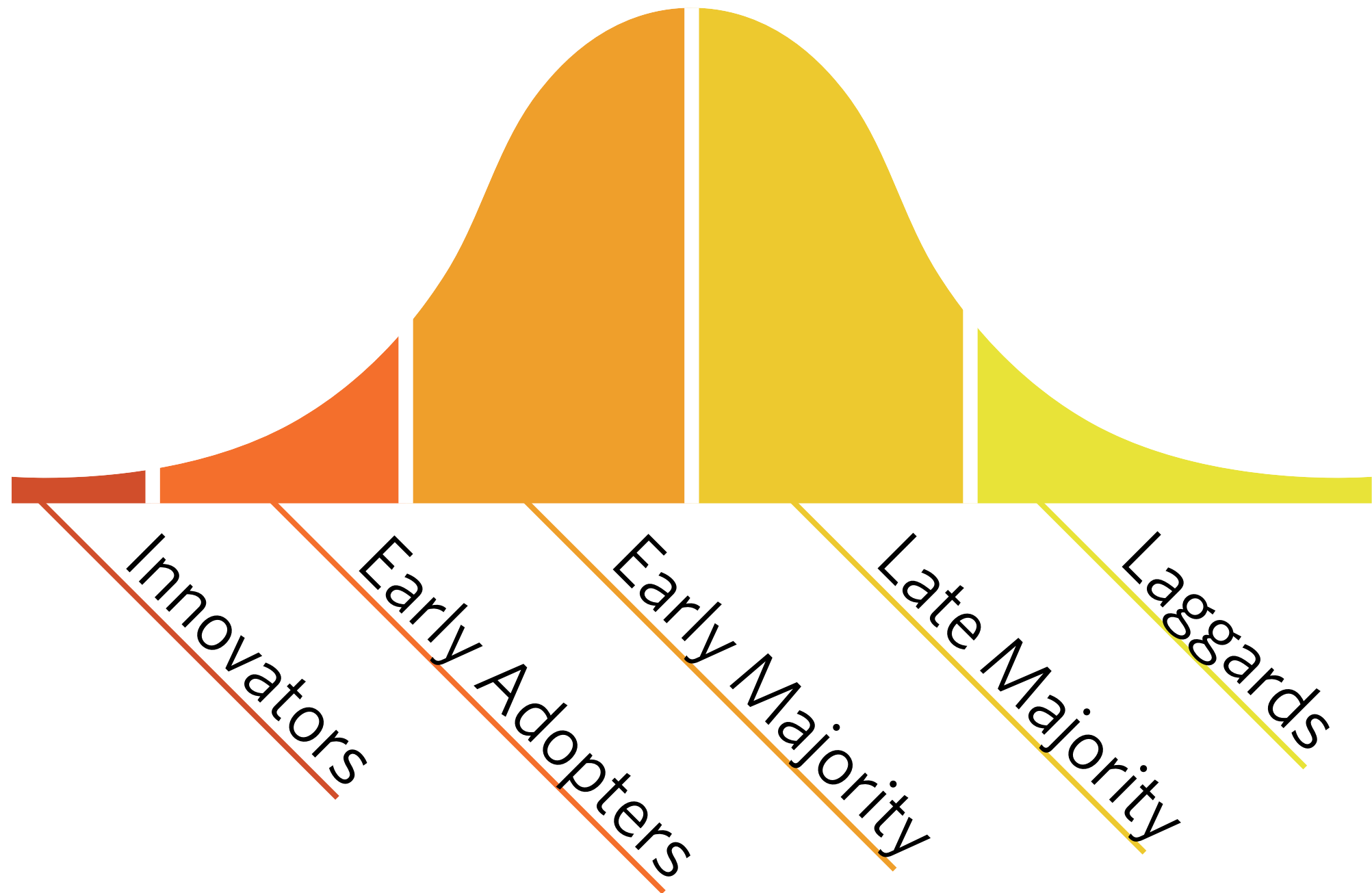
Occupation: Architect

A



B

TECHNOLOGY ADOPTION CYCLE



Rogers, Bohlen, Beal, 1957

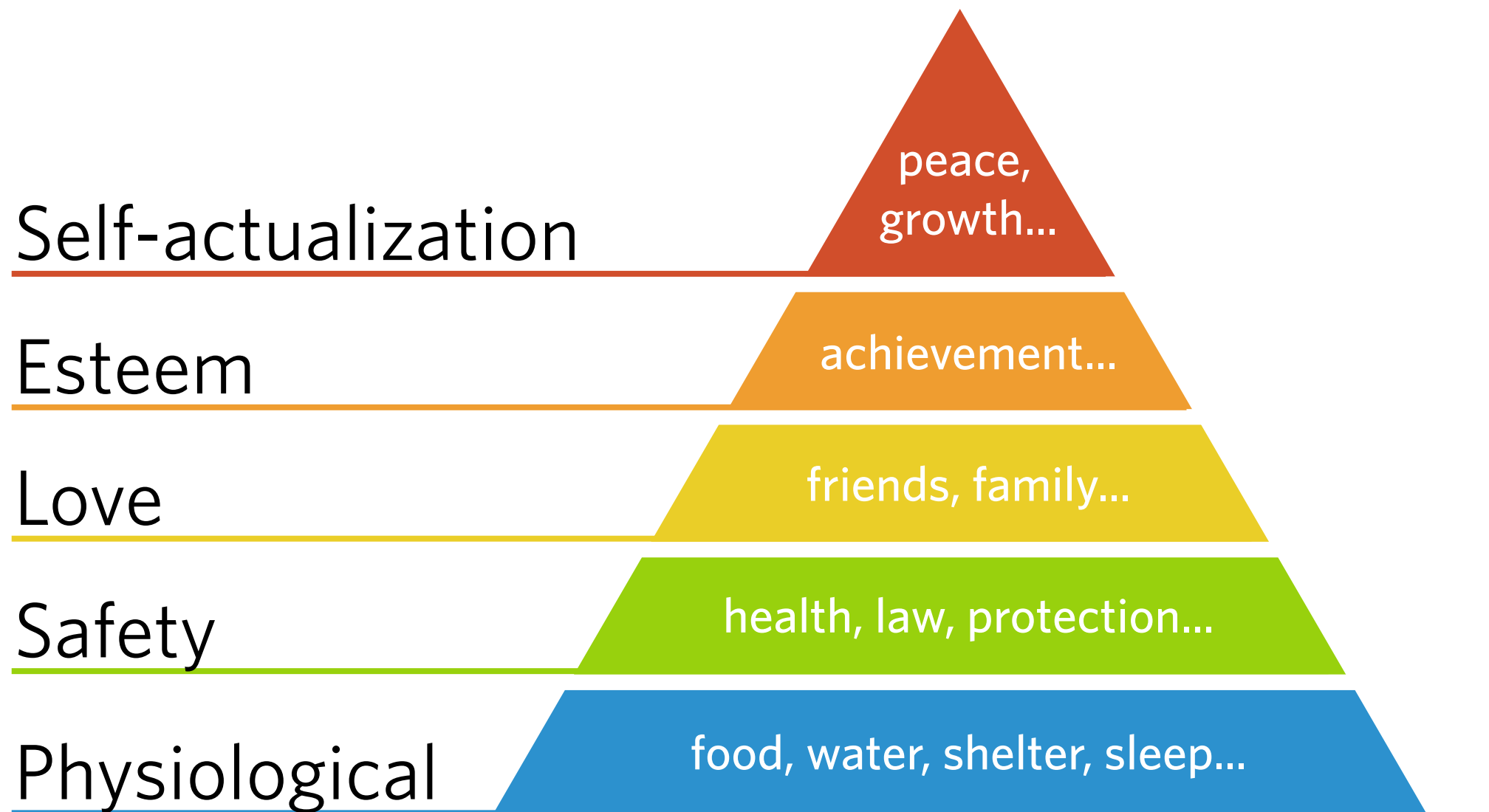
**ENHANCE
ACCESSIBILITY &
USABILITY**



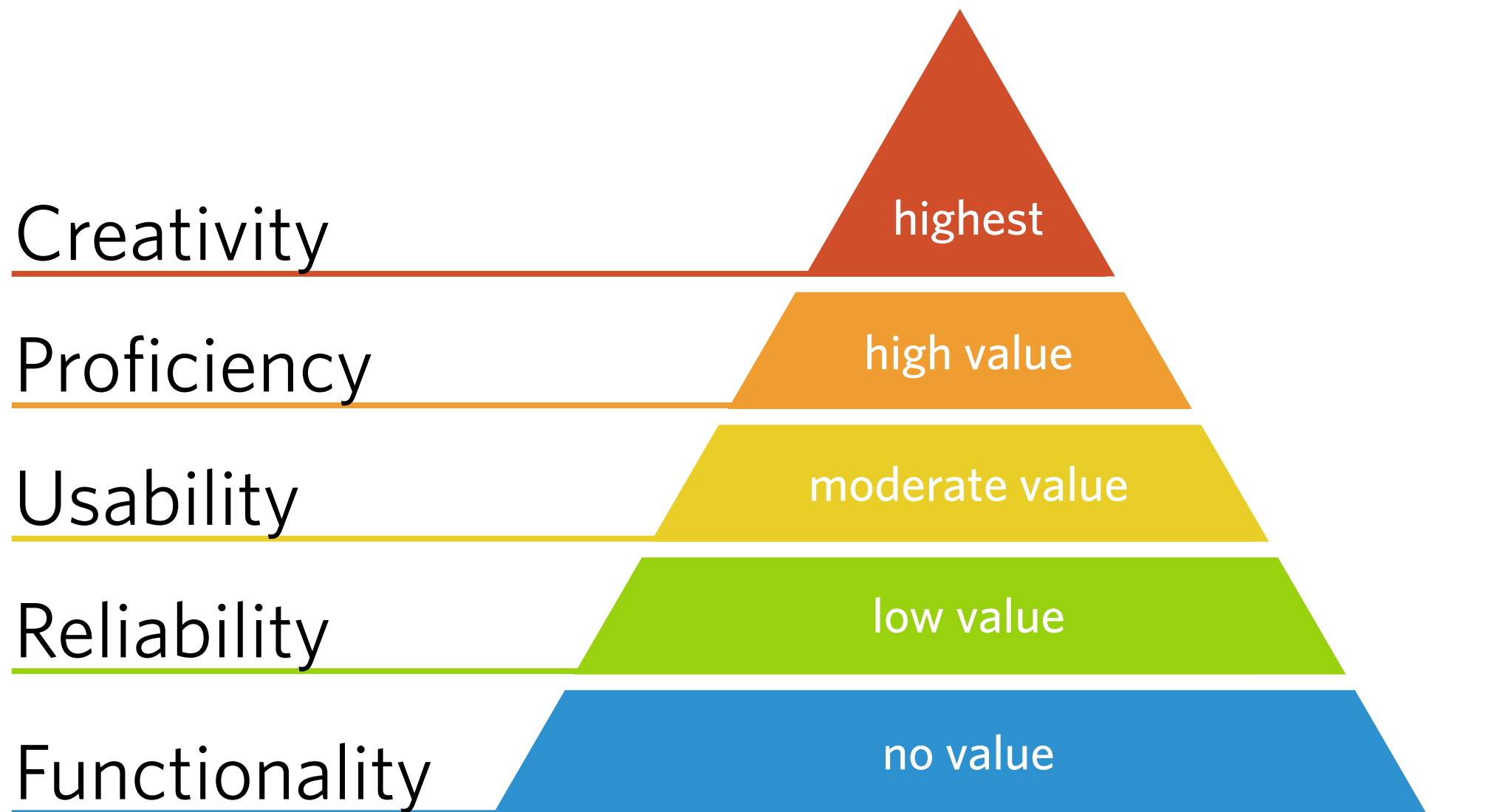
CURB CUTS

SHALL WE?

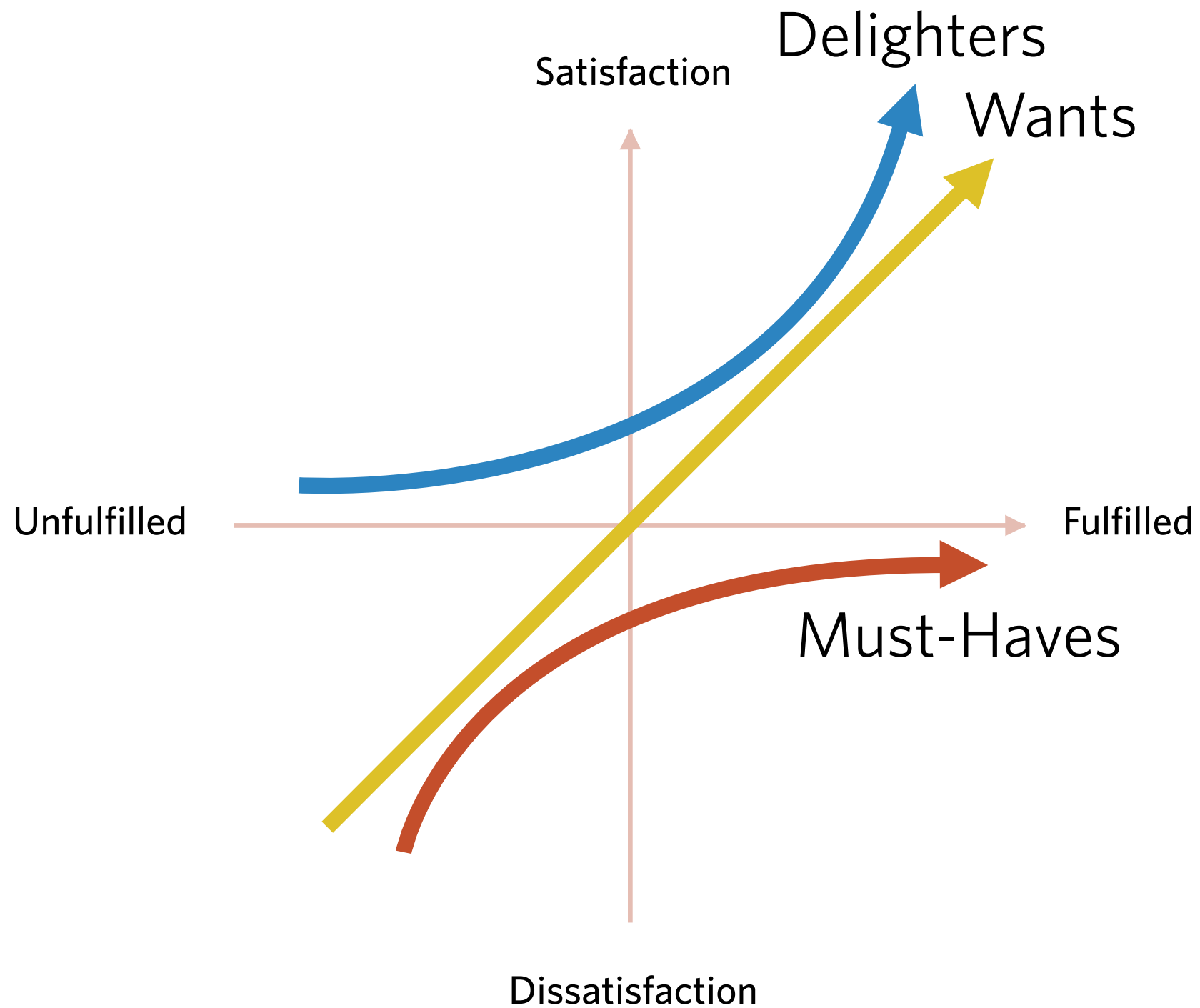
HIERARCHY OF NEEDS



DESIGN HIERARCHY OF NEEDS



KANO MODEL





PSYCH



Warning: Obscure Pee-wee's Big Adventure Reference

HOW WE WORK




Discover &
experience

Think &
understand

Decide
& act

1. DISCOVER & EXPERIENCE



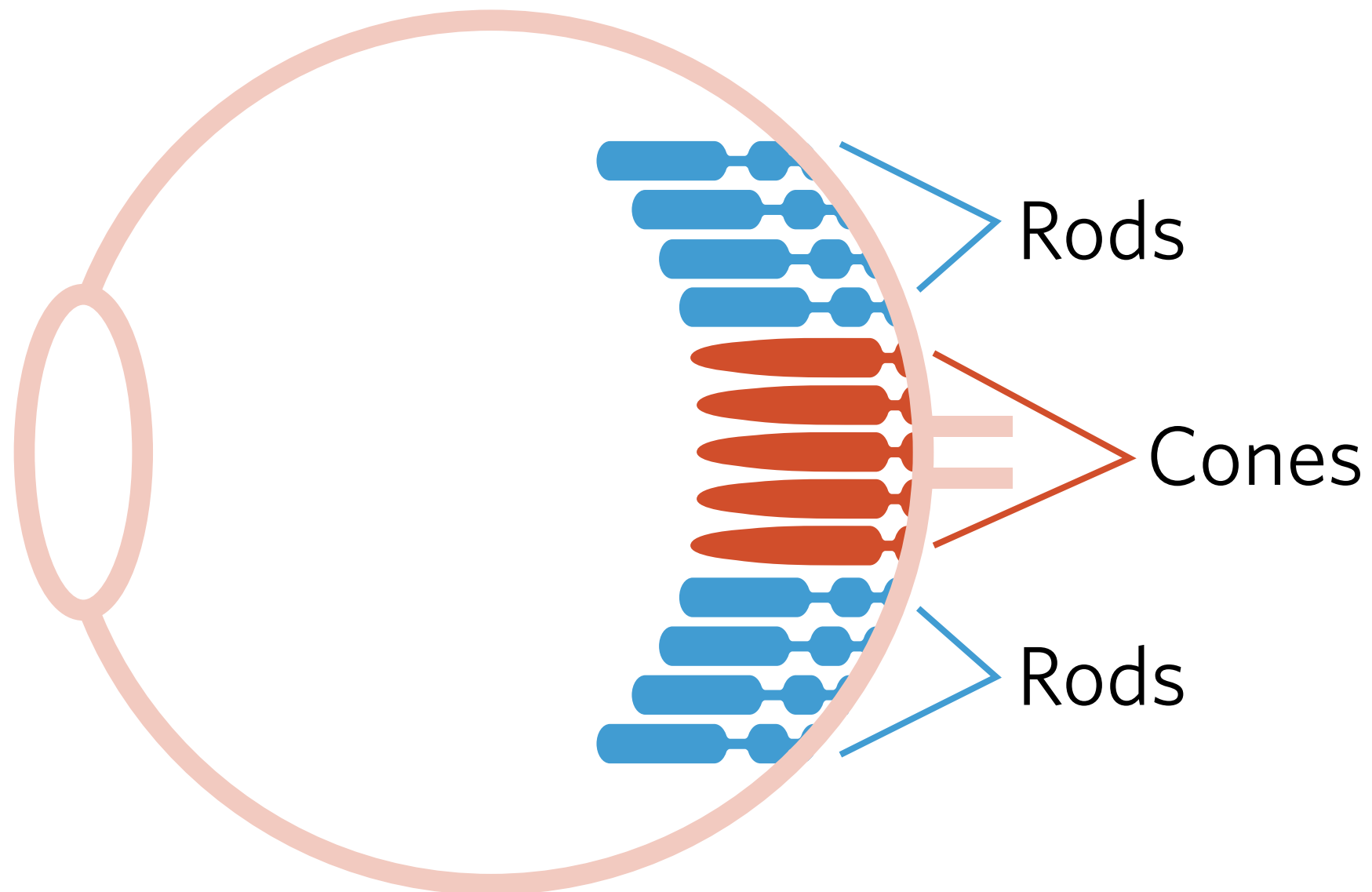


We're thinking "great literature"... the user's reality is much closer to "billboard going by at 60 miles an hour".

STEVE KRUG

**LOTS OF THINGS CAN
GO WRONG**

PHOTORECEPTORS OF THE EYE



**WE OFTEN DON'T NOTICE
UPDATES AND OTHER STUFF
ON A PAGE**

**CREATE SCANNABLE
HIERARCHIES**

**DRAW ATTENTION
THOUGHTFULLY**

**KEEP FEEDBACK
WITHIN THE
FOVEAL AREA**

**ADD ANIMATION OR
SOUND CUES**

**1/2 OF USERS WILL GIVE UP
IF SOMETHING TAKES 3+
SECONDS**

A blue-tinted photograph of comedian Louis CK. He is shown from the chest up, looking directly at the camera with a serious expression. He has a beard and is wearing a dark shirt. A microphone is visible at the bottom center of the frame. The background is a solid blue color.

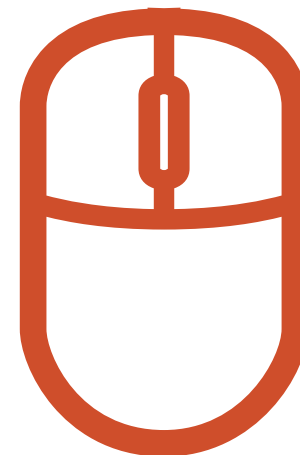
GIVE IT A SECOND!! It's going to space! Will you
give it a second, to get back from space?

LOUIS CK

**OUR ATTENTION ONLINE
SPANS JUST A FEW MINUTES,
IN 8 SECOND CHUNKS**



VS



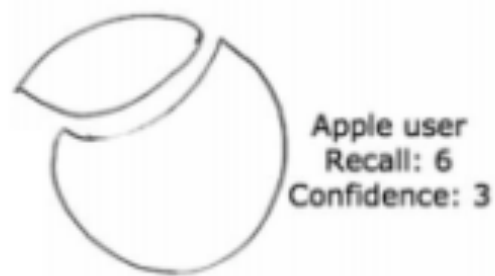
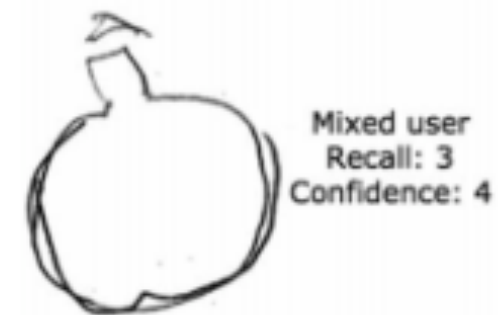
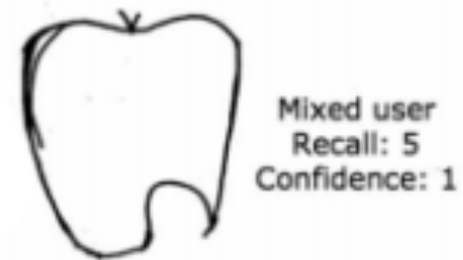
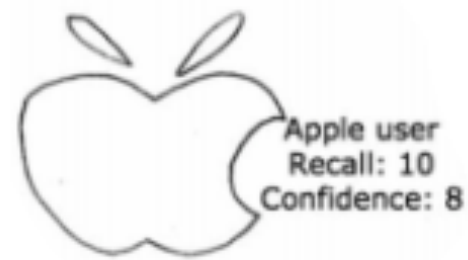


CART ABANDONMENT

67%

**WE “FOCUS” TO A MINIMUM
AND RELY ON INCOMPLETE
INFORMATION**





**SALIENT CUES HELP US
GENERALIZE**



**EMBRACE &
ACCOMMODATE
LIMITED ATTENTIONS**

**SIMPLIFY DESIGNS
TO REDUCE THINKING**

USE WHITE SPACE

**BREAK STUFF
(INTO CHUNKS)**

**FORCE FOCUS WITH
LESS OPTIONS**

A faded, blue-tinted portrait of Jakob Nielsen, a man with glasses and a suit, serves as the background for the slide.

How users read on the web: they don't.

JAKOB NIELSEN

WE'RE SKIMMERS

**USERS HAVE TIME TO READ
20% OR LESS OF THE PAGE**

**HUMANS AREN'T WIRED
FOR READING**

**43% OF THE U.S. HAS
LOW LITERACY**

**USE VISUALS
OVER COPY**

KEEP COPY LEGIBLE

JASON'S WEB TYPE SCALE

Body Size Line height Line Length	Desktop 16px(1em) 1.375em 60-75	Tablet 16px(1em) 1.375em 60-75	Phone 16px(1em) 1.25em 35-40
H1 Size Line height	48px(3em) 1.05em	40px(2.5em) 1.125em	32px(2em) 1.25em
H2 Size Line height	36px(2.25em) 1.25em	32px(2em) 1.25em	26px(1.625em) 1.15384615em
H3 Size Line height	28px(1.75em) 1.25em	24px(1.5em) 1.25em	22px(1.375em) 1.13636364em

**NO CURLZ MT,
PLEASE**

SIMPLIFY MESSAGING

**TARGET YOUR
AUDIENCE**

2. THINK & UNDERSTAND



MENTAL MODELS

MENTAL MODELS

Conceptual models people hold in their minds,
formed by how a person believes things work





**USE EXISTING
MODELS TO TEACH
SOMETHING NEW**



**EXISTING SITE
PATTERNS ENHANCE
COMMUNICATION**

INVERTED PYRAMID



**PUT IMPORTANT
STUFF AT THE TOP**

**USE EXPECTED
NAVIGATION**

USE EXPECTED NAVIGATION

(Or card-sorting)

AFFORDANCES

AFFORDANCES

Actionable properties between the
world and a person





PERCEIVED AFFORDANCES

Qualities of an object that suggest how
it might be used

SIGNIFIERS

SIGNIFIERS

Some sort of indicator or signal in the physical or social world, that can be meaningfully interpreted



**MAKE AFFORDANCES
PERCEIVABLE, OR
ADD SIGNIFIERS**



CLICK ME

Ceci n'est pas une button.

**DRAWING OUR OWN MAPS
CAN LEAD US TO
MISUNDERSTANDING**

**DO YOUR
HOMEWORK**

**MAKE SURE YOUR
AUDIENCE HAS THE
RIGHT CONTEXT**

MENTAL MODELS





RELATIONSHIPS ARE HARD

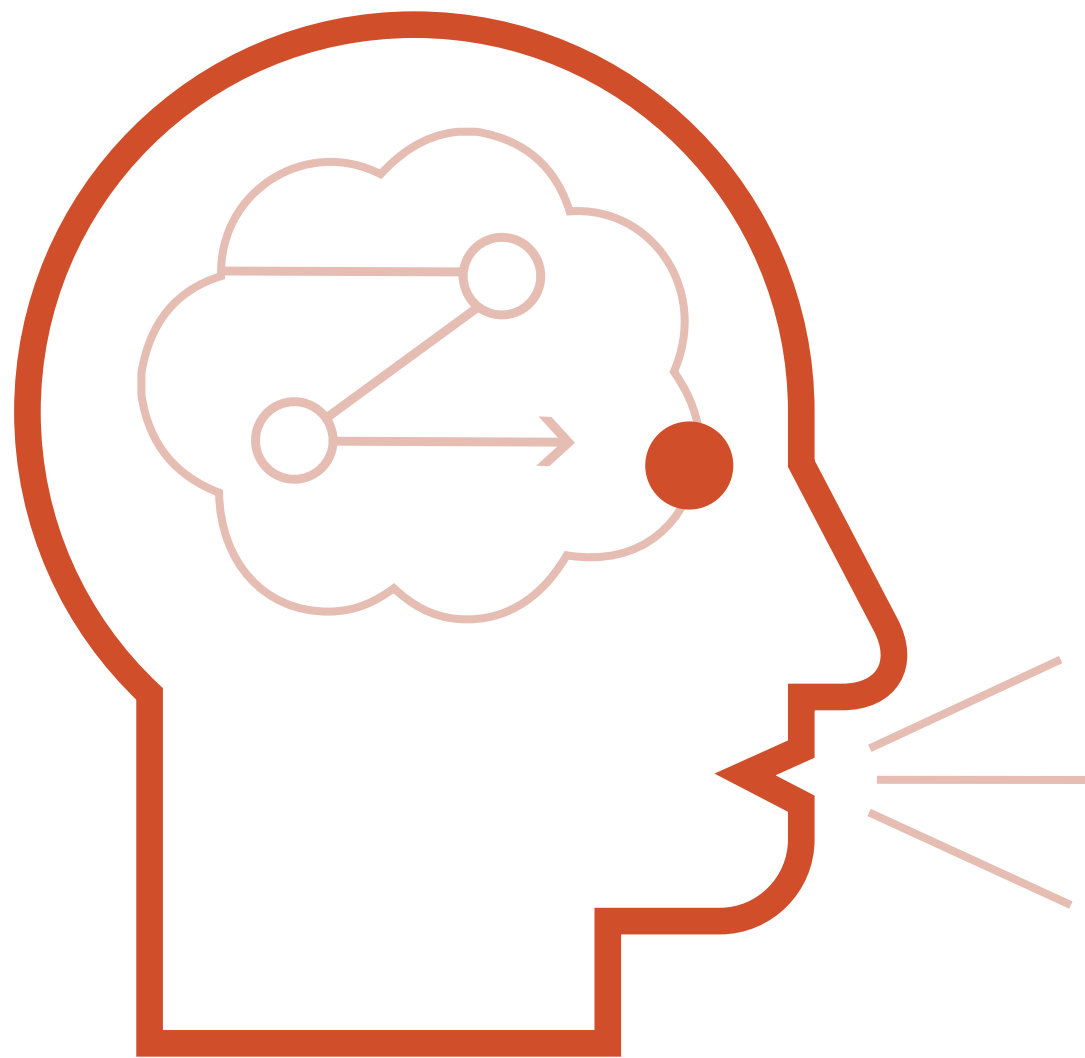
.15- SECONDS



CAUSE & EFFECT

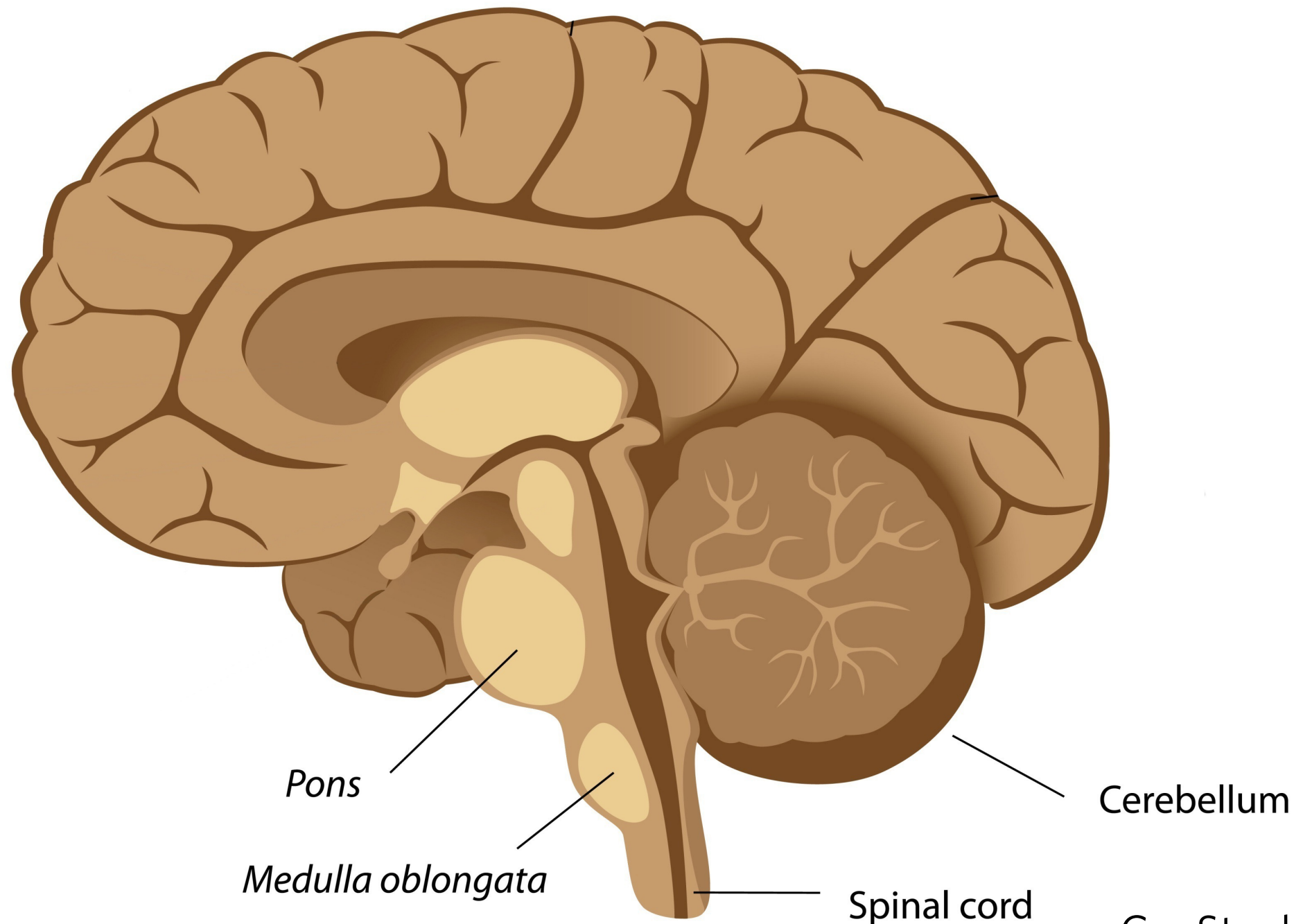
**CLARIFY WITH
INFORMATIVE
FEEDBACK**

3. DECIDE & ACT

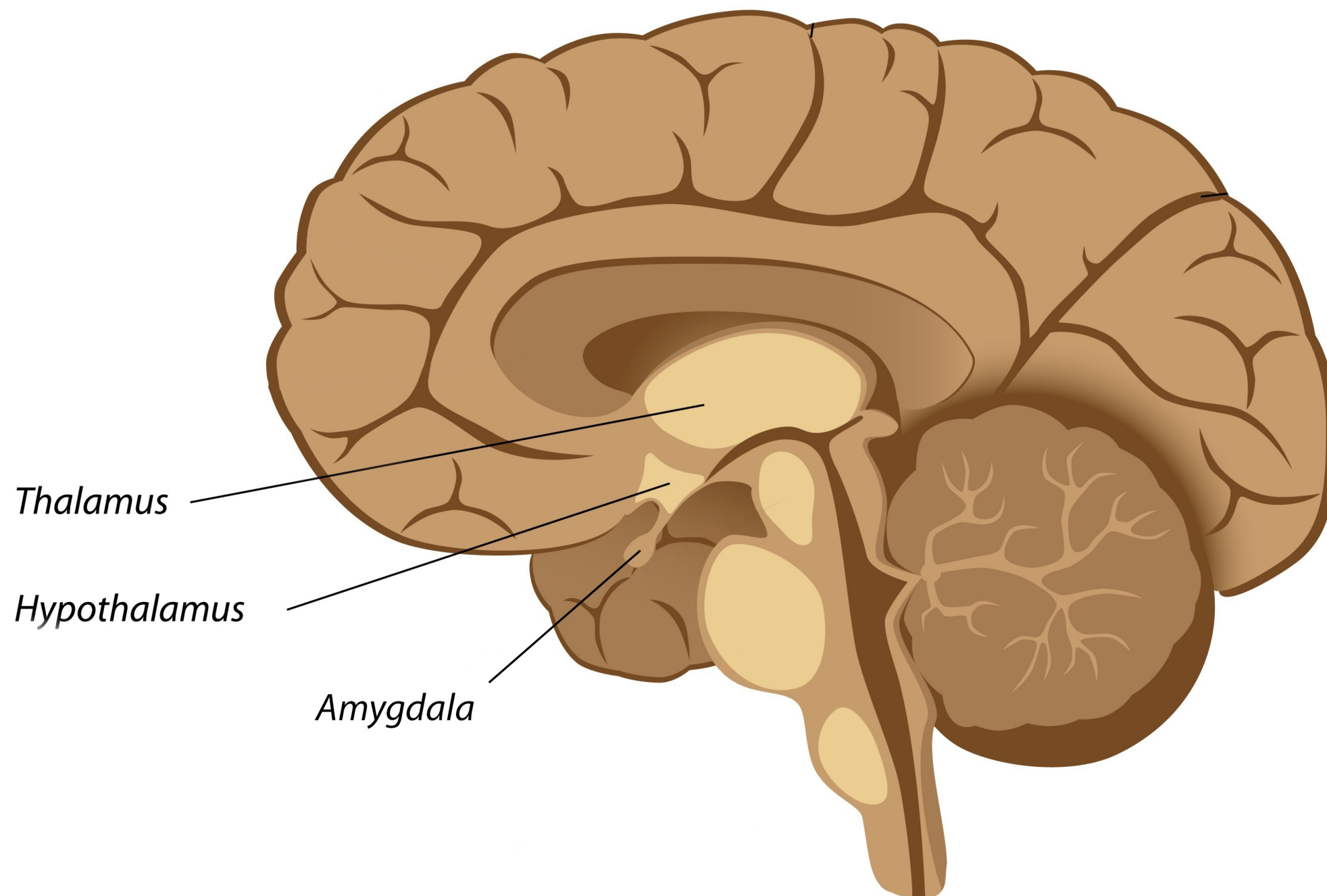


WE'RE IRRATIONAL

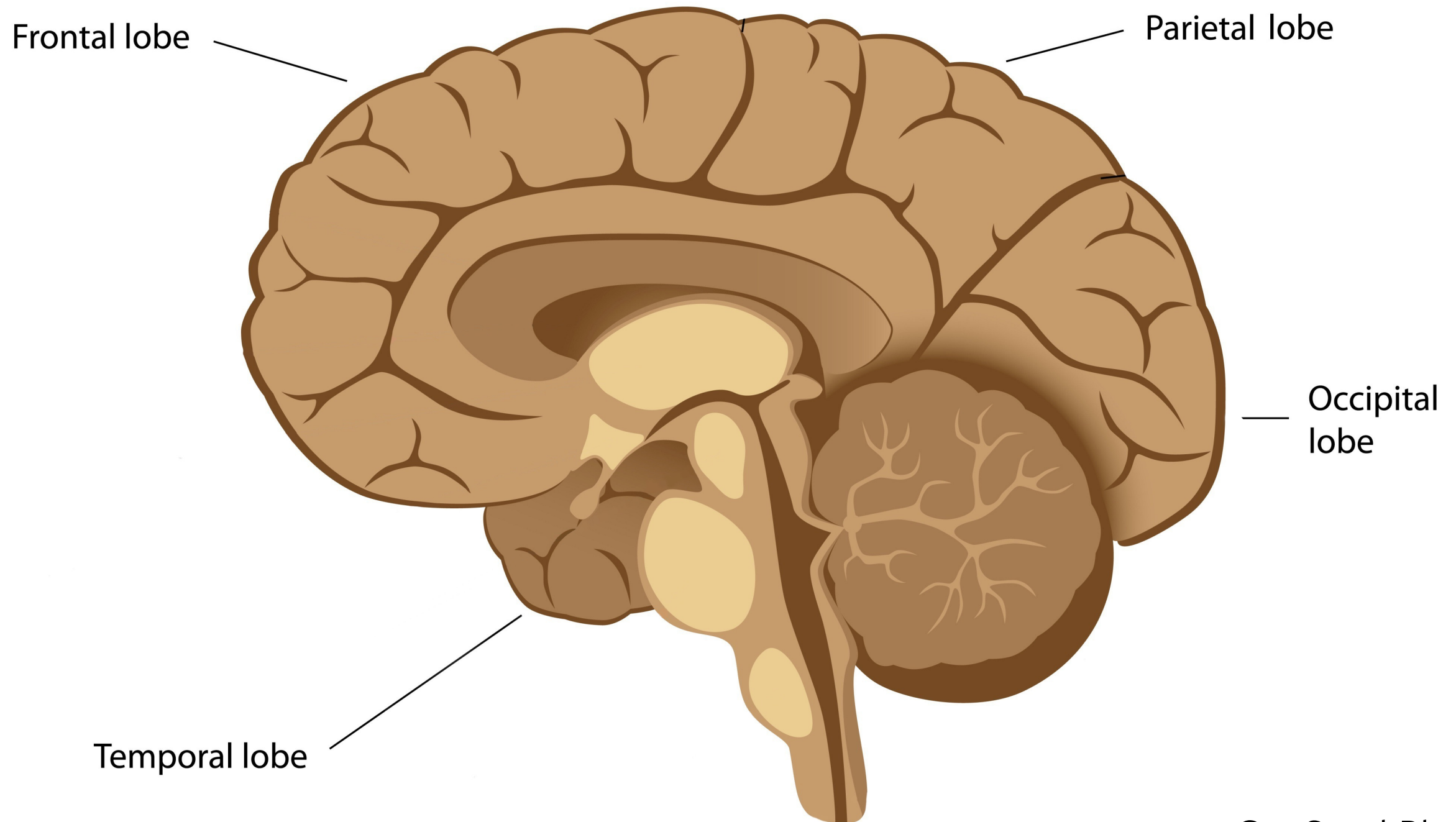
SECTIONS OF THE BRAIN



SECTIONS OF THE BRAIN



SECTIONS OF THE BRAIN



**WE PROCESS MOST
INFORMATION OUTSIDE OF
OUR AWARENESS**

**CRITICAL DECISIONS
TAKE 100 SECONDS
TO MAKE**

**WE USE LOGIC AFTER THE
FACT TO JUSTIFY DECISIONS**

WE'RE JUDGMENTAL

**IT TAKES .2 SECONDS TO
FORM A FIRST IMPRESSION**

**APPEALING VISUAL
DESIGN**



A CREDIBLE WEBSITE

WE LOVE SHORTCUTS

SATISFICING

Choosing the first reasonable option,
not the best one

MISTAKES

Made when we misunderstand rules
or knowledge

SLIPS

Made with memory or motor malfunctions

**WE BLAME OURSELVES FOR
POOR USER EXPERIENCES**

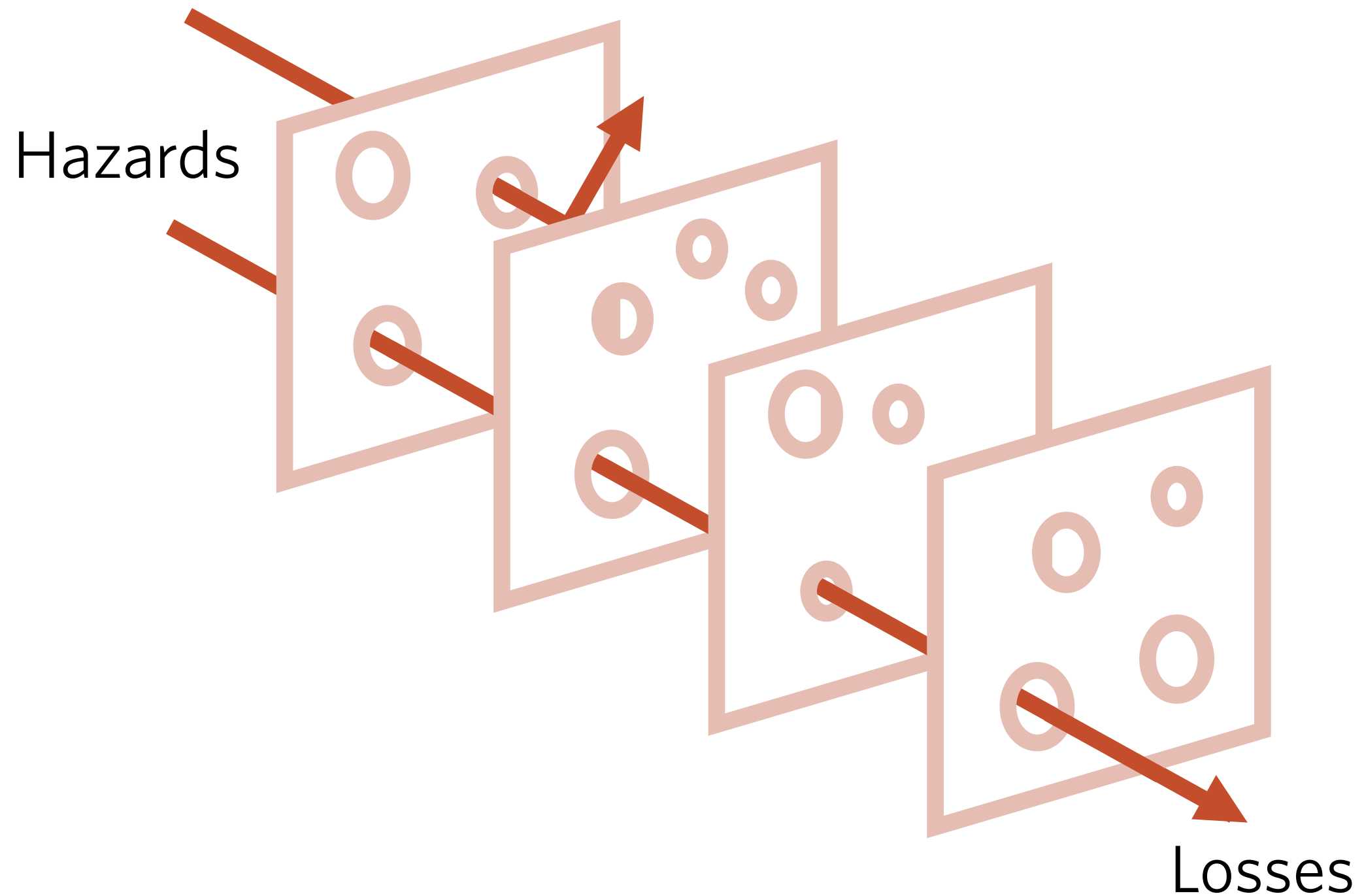
LEARNED HELPLESSNESS

A condition in which a person suffers from a sense of powerlessness, arising from a persistent failure to succeed

**REDUCE MISTAKES &
KEEP THEM CHEAP**

LET THEM GO BACK

SWISS CHEESE MODEL



Reason, 2000

**DESIGN REDUNDANT
LAYERS OF DEFENSE**

HOW WE WORK



Discover &
experience

Think &
understand

Decide
& act

**WE NEED TO ADAPT
AS DESIGNERS**



PERSONA 3



Millennial
Marissa

"Clicking the logo takes you home, it's common sense!"

Age: 26

Location: Providence, RI

Education: Bachelors

Occupation: UX Designer

**DON'T DESIGN
FOR US**

DESIGN FOR THEM

SIMPLIFY

DO NOT
MAKE



REDUCE FRICTION

REDUCE FRICTION

Clarity

Consistency

Common Sense

REDUCE CHOICES

THE JAM STUDY



Iyengar, Lepper, 2000

MORE CHOICES



HARDER DECISIONS

**UNDERSTAND &
PRIORITIZE NEEDS**

“WHY?”



People don't want to buy a quarter-inch drill.
They want a quarter-inch hole!

THEODORE LEVITT

DESIGN INVISIBLE EXPERIENCES

CREATE DELIGHT

CREATE DELIGHT

Aesthetics

Humor

Flow

Novelty

ENJOYMENT



EASE & EFFICIENCY

HAD ENOUGH?

**UNDERSTAND GOALS
HOLISTICALLY WITH
PSYCHOLOGY & UX
DESIGN**



We have to accept human behavior the way
it is, not the way we would wish it to be.

DONALD NORMAN

THANKS!

marissaepstein.com

[@marstoyship](https://twitter.com/marstoyship)



WHAT DID YOU THINK?

EVAULATE THIS SESSION - [LOSANGELES2015.DRUPAL.ORG/SCHEDULE](https://losangeles2015.drupal.org/schedule)

THANK YOU!

APPENDIX

1. Definition of UX design: <http://uxdesign.com/ux-defined>
2. Bounce rate: <https://blog.kissmetrics.com/speed-is-a-killer/>
3. Attention spans
 1. Total task: <http://www.telegraph.co.uk/education/universityeducation/6972191/Students-have-10-minute-attention-span.html>
 2. Micro-task: <http://www.statisticbrain.com/attention-span-statistics/>
4. Online cart abandonment: <http://baymard.com/lists/cart-abandonment-rate>
5. Relying on incomplete descriptions: http://www.amazon.com/Exploring-Psychology-9th-David-Myers/dp/1464111723/ref=la_B000AP7O54_1_3?s=books&ie=UTF8&qid=1431470120&sr=1-3
6. White space & comprehension: <http://www.smashingmagazine.com/2009/09/24/10-useful-usability-findings-and-guidelines/>
7. Skipping web content: <http://www.nngroup.com/articles/how-little-do-users-read/>

APPENDIX, CONT.

8. Wired for language: <http://www.amazon.com/Designing-Mind-Simple-Understanding-Interface/dp/012375030X>
9. Low literacy: <http://www.nngroup.com/articles/writing-for-lower-literacy-users/>
10. Meaning of red: <http://www.colormatters.com/the-meanings-of-colors/red>
11. Cause & effect timing: <http://www.amazon.com/Designing-Mind-Simple-Understanding-Interface/dp/012375030X>
12. Errors & loss: <http://www.amazon.com/The-Design-Everyday-Things-Expanded/dp/0465050654>
13. Sections & functions of the brain: http://www.amazon.com/Exploring-Psychology-9th-David-Myers/dp/1464111723/ref=la_B000AP7O54_1_3?s=books&ie=UTF8&qid=1431470120&sr=1-3
14. Unconscious processing: http://www.amazon.com/Exploring-Psychology-9th-David-Myers/dp/1464111723/ref=la_B000AP7O54_1_3?s=books&ie=UTF8&qid=1431470120&sr=1-3

APPENDIX, CONT.

15. Critical decisions: <http://www.amazon.com/Designing-Mind-Simple-Understanding-Interface/dp/012375030X>
16. Justifying decisions: http://westsidetoastmasters.com/resources/laws_persuasion/chap14.html
17. First impressions
 1. Speed: <http://www.dryfive.com/first-impressions-in-2-seconds>
 2. Credible sites: <https://credibility.stanford.edu/guidelines/>
18. Blaming ourselves: <http://www.amazon.com/The-Design-Everyday-Things-Expanded/dp/0465050654>
19. Back button: <http://dubroy.com/research/chi2010-a-study-of-tabbed-browsing.pdf>
20. Loss & mistakes: <http://www.amazon.com/The-Design-Everyday-Things-Expanded/dp/0465050654>
21. Enjoyable experiences: <http://abookapart.com/products/designing-for-emotion>