

Cognitive UX

Using cognitive science and psychology to drive UX design



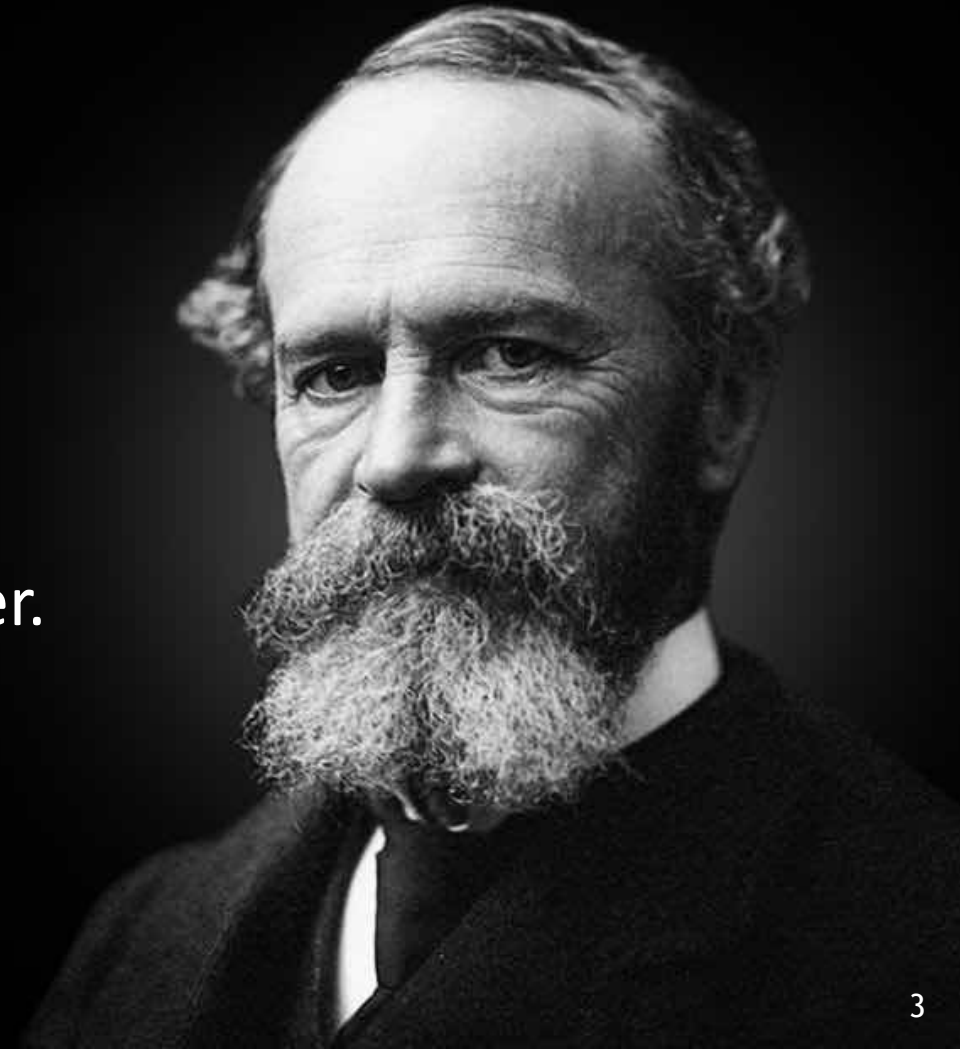
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UX and Product Manager



“

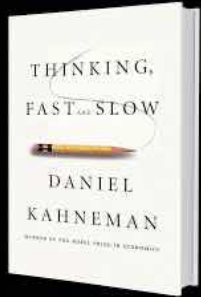
The greatest weapon
against stress is our
ability to choose one
thought over the other.

William James, 1842 - 1910



“

Intuition is nothing more and nothing less than recognition.



Daniel Kahneman

“Thinking fast and slow”, 2011



Dual Process Model

System 1 - Intuition

Fast

Always on

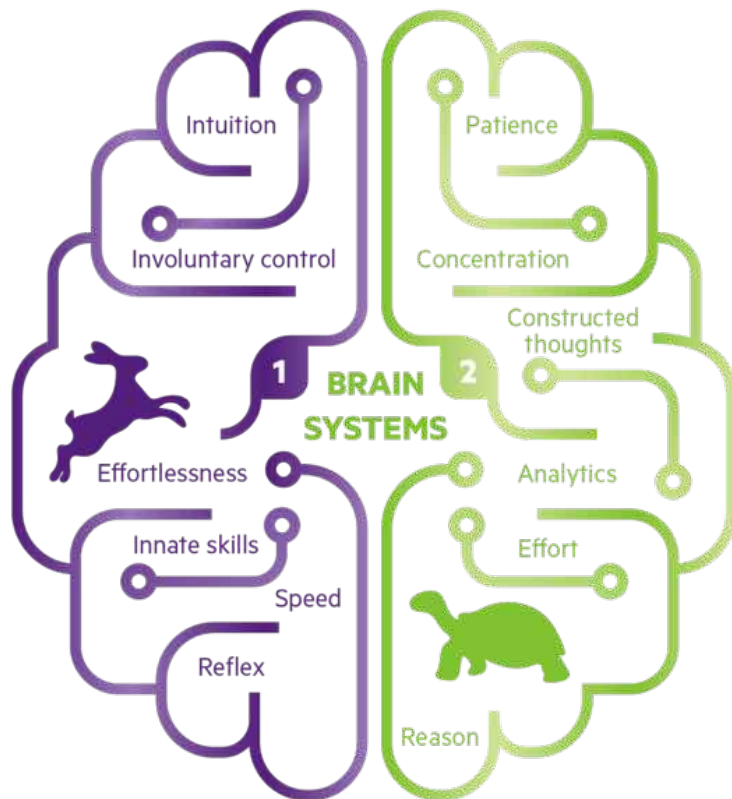
Automatic

Unconscious

Hot

Heuristic

Error prone



System 2 - Reflection

Slow

On demand

Deliberate

Conscious

Cold

Analytic

Reliable

System 1 usually wins the race!



Heuristic



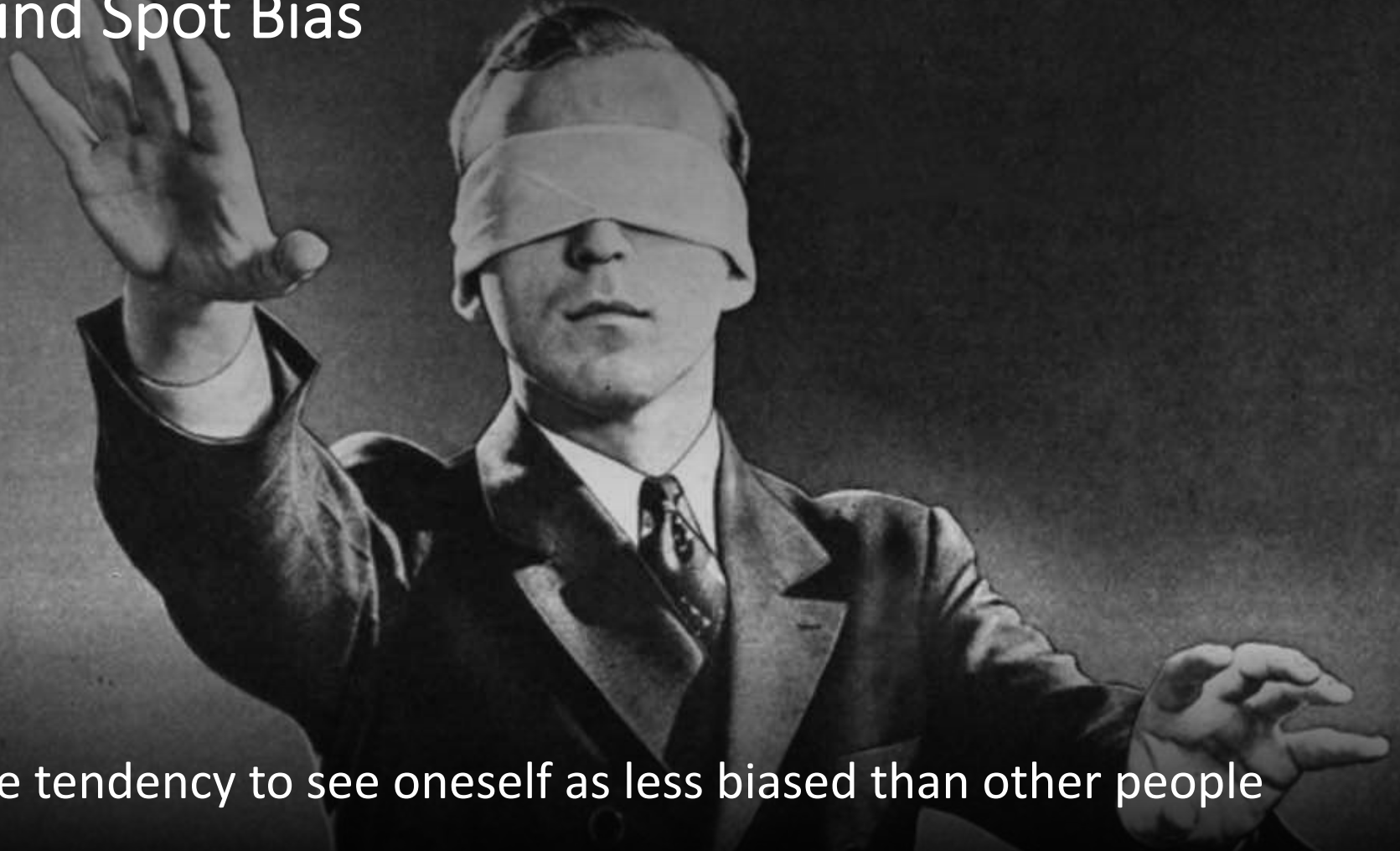
An approach to problem solving that employs a practical method, not guaranteed to be optimal, perfect, or rational, but instead sufficient for reaching an immediate goal.

Cognitive Biases

A hand is shown holding a pair of sunglasses. The sunglasses have dark lenses that reflect a blurred cityscape at night, with many small, bright lights creating a bokeh effect. The background behind the sunglasses is a sunset or sunrise sky with soft, warm colors. The overall image has a dark, moody aesthetic.

Systematic patterns of deviation from norm or rationality in judgment.

Blind Spot Bias

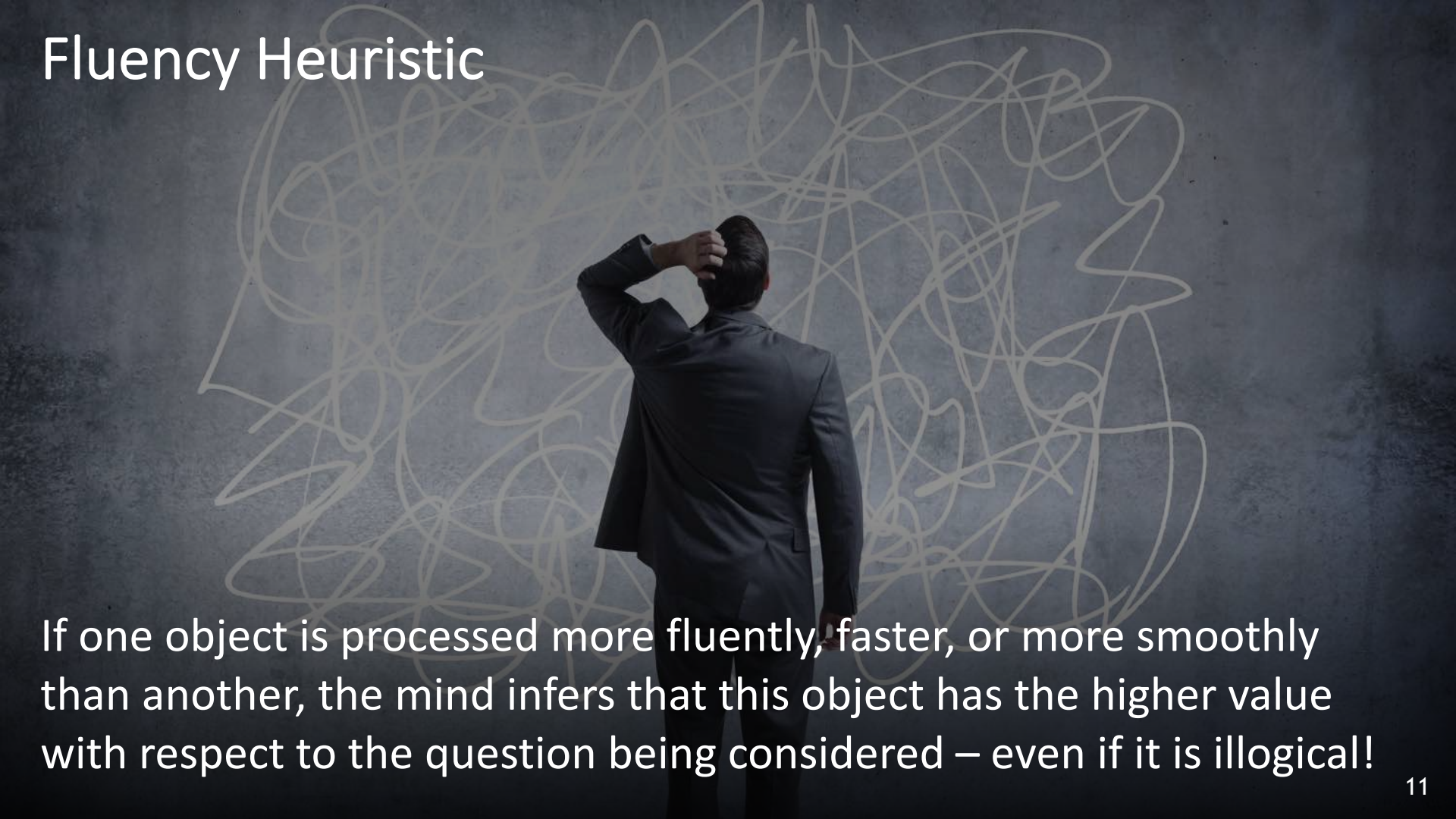


The tendency to see oneself as less biased than other people



Biases and UX Design

Fluency Heuristic

A man in a dark suit is seen from behind, standing in front of a wall covered in dense, chaotic white scribbles. He has his right hand on his head, suggesting confusion or frustration. The background is a dark, textured wall.

If one object is processed more fluently, faster, or more smoothly than another, the mind infers that this object has the higher value with respect to the question being considered – even if it is illogical!

Illusory Truth effect



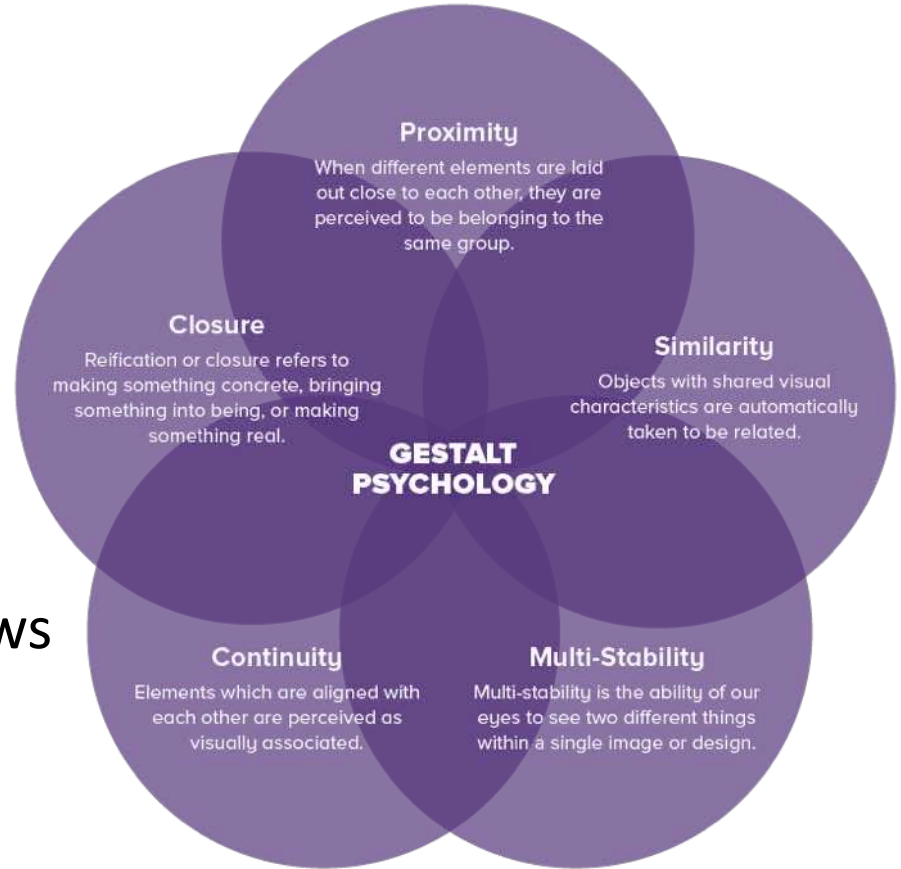
A tendency to believe that a statement is true if it is easier to process, or if it has been stated multiple times, regardless of its actual veracity.



Reduce Cognitive Load

Visual Hierarchy

- Visual hierarchy is one of the core techniques which are applied to the design process.
- It is initially based on Gestalt psychological theory which examines users' visual perception of elements in relation to each other and shows how people tend to unify the visual elements into groups.



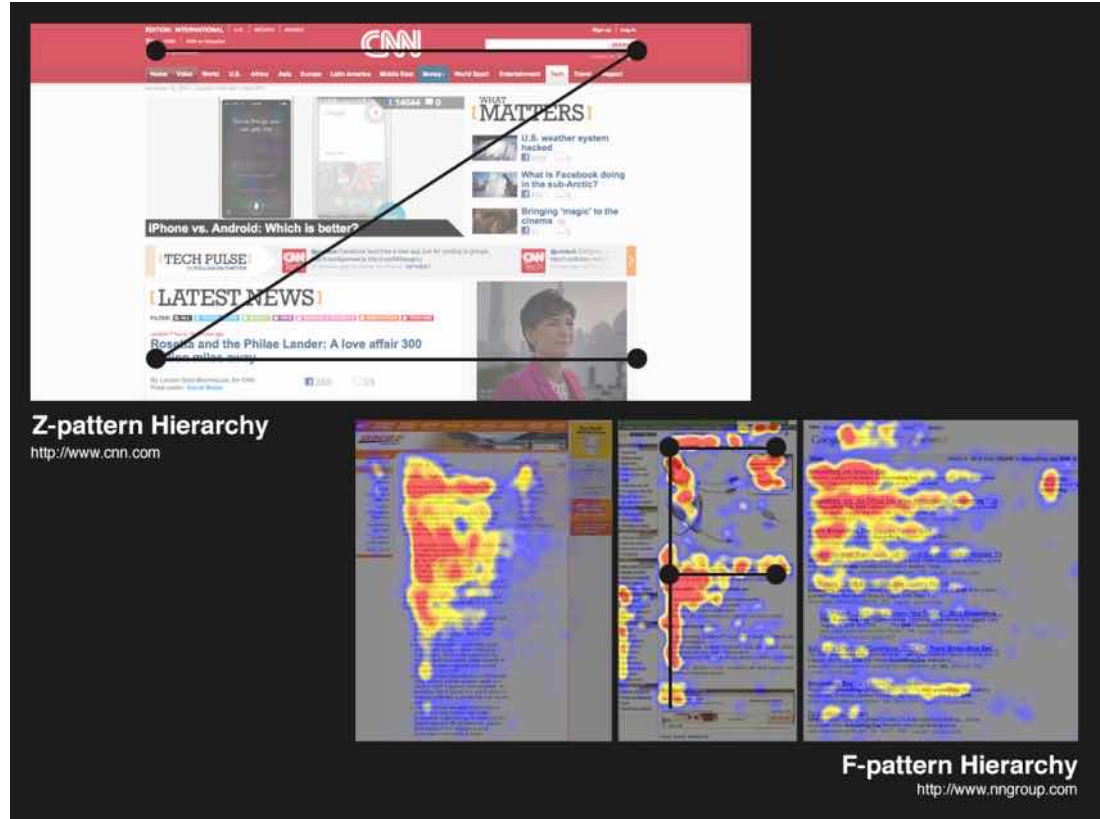
Visual hierarchy tools

- Size
- Color
- Contrast
- Negative space
- Proximity
- Repetition
- Texture and style
- Typography hierarchy



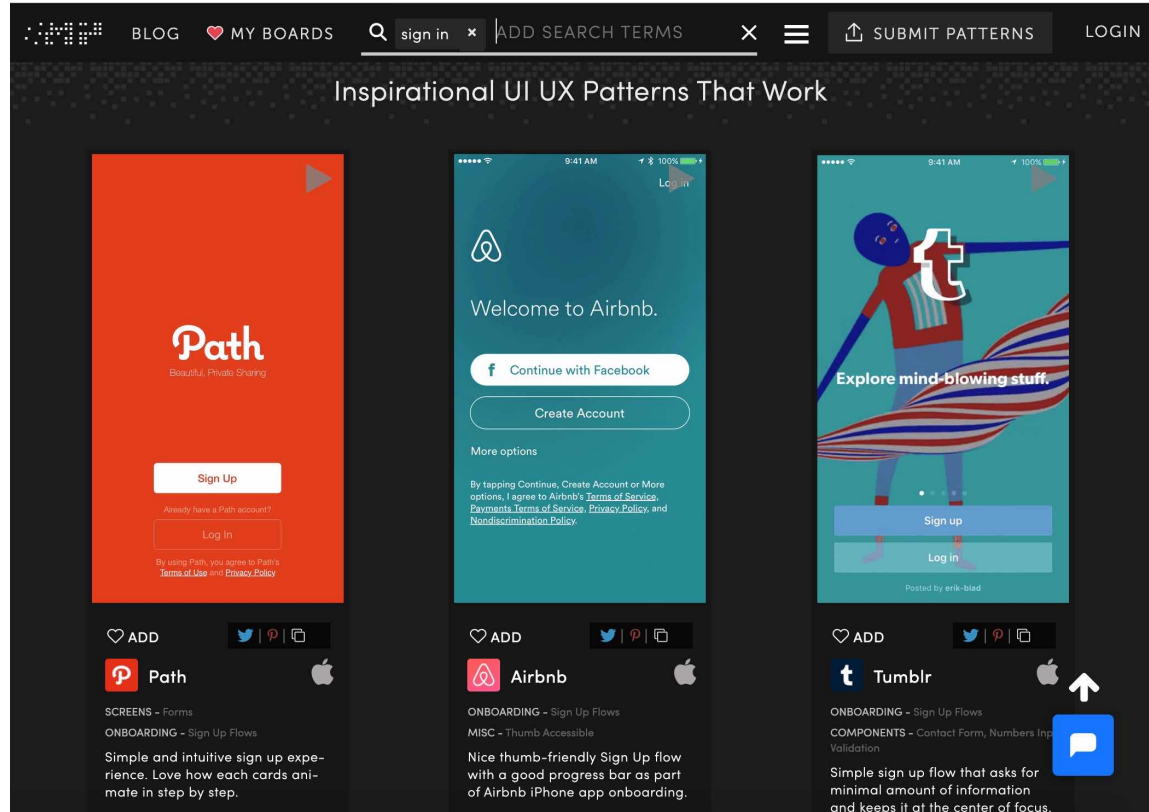
Consider scanning patterns

- Z-shaped pattern takes place on the pages which are not heavily concentrated on copy.
- F-pattern appears on digital pages or screens with big amount of content (blogs, news platforms etc.)
- Put all the core UI elements on the most scanned spots to draw users' attention.



Design Patterns

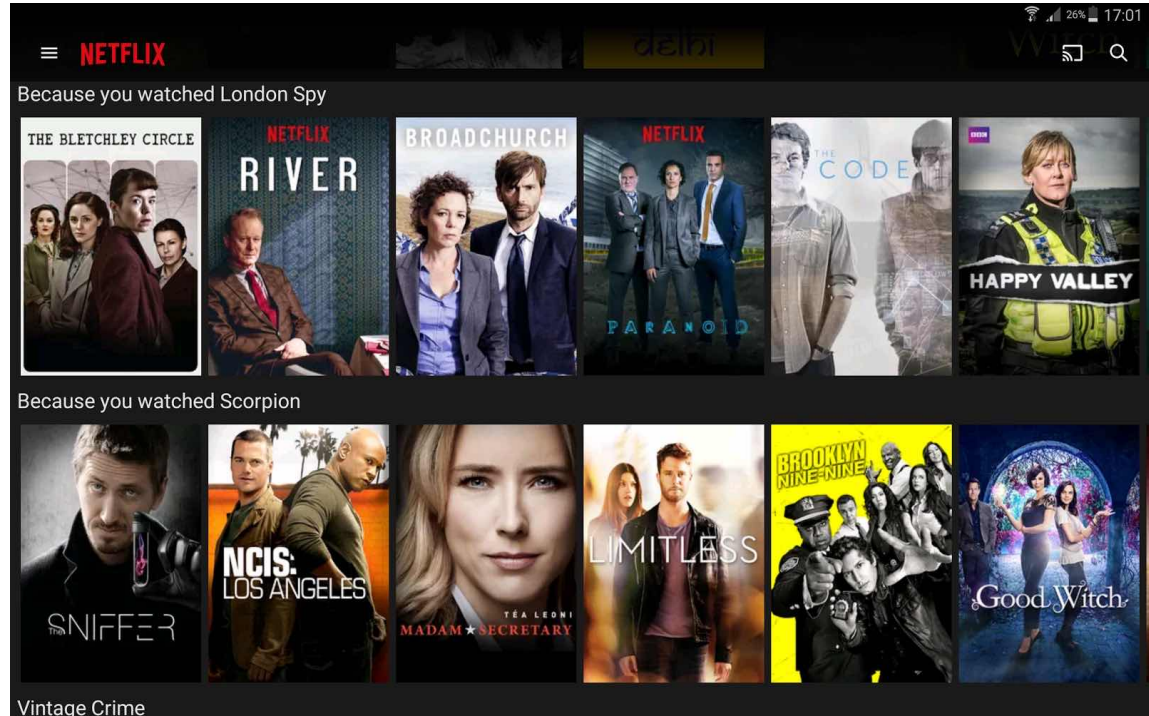
- Leverage common design patterns
- Keep your UIs consistent
- Adopt a design system



<https://www.mobile-patterns.com/>

Less is more

- Avoid unnecessary options
- Reduce number of choices
- Consider personalization and anticipatory design



Aesthetic-usability effect



Users often perceive aesthetically pleasing design as design that's more usable.

Aesthetically pleasing design...



Can make users develop feelings towards the product

Halo Effect



...and it works both ways!

Horn Effect

Aesthetically pleasing design...

- Can make users more tolerant of minor usability issues.
- **Consider tuning down aesthetic values if focus is on usability**



Priming

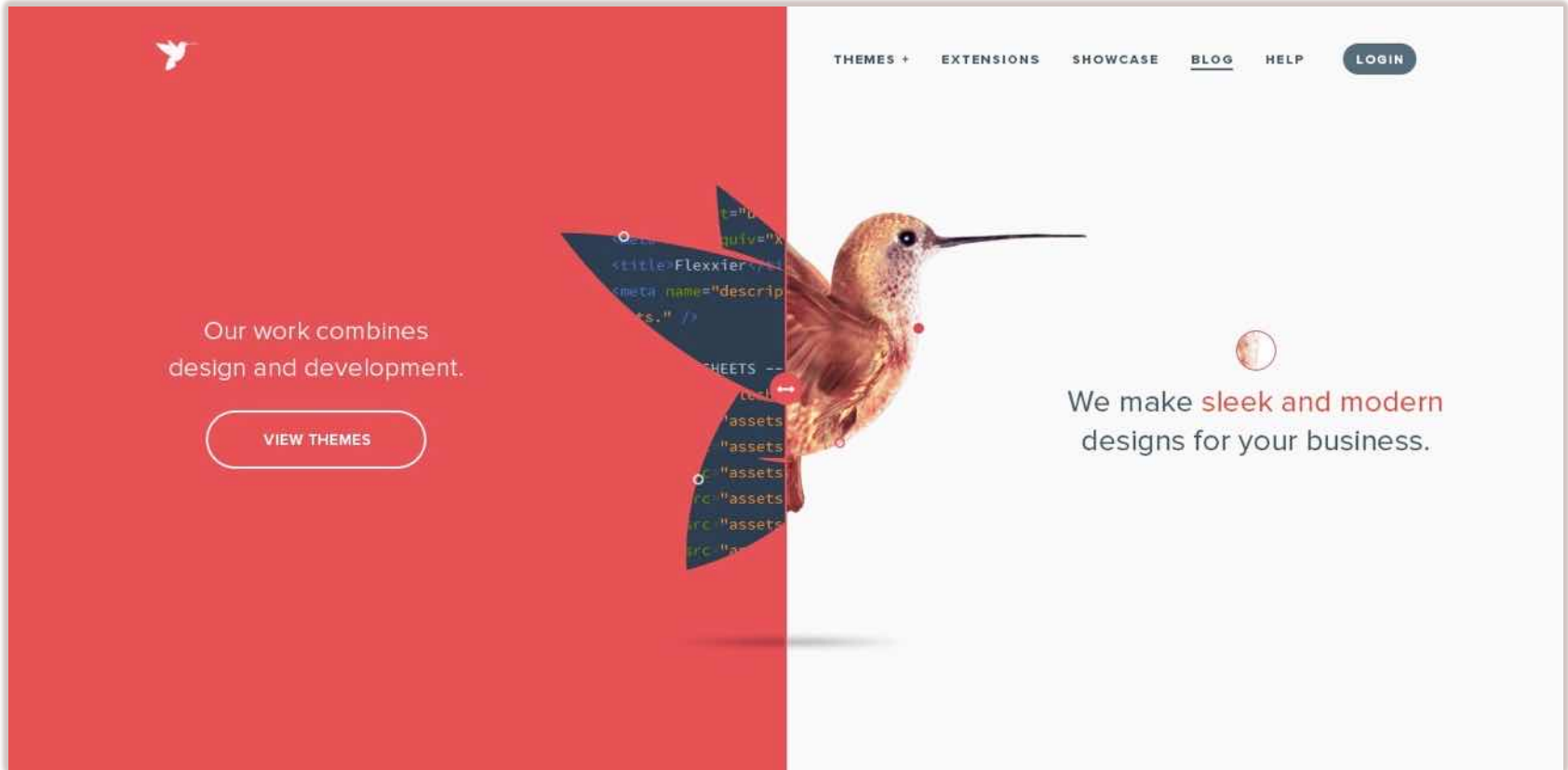


Exposure to a stimulus influences behavior in subsequent, possibly unrelated tasks.

Colors can prime emotions

| | | | | |
|---|--|---|---|--|
| Red Excitement Strength Love Energy | Orange Confidence Success Bravery Sociability | Yellow Creativity Happiness Warmth Cheer | Green Nature Healing Freshness Quality | Blue Trust Peace Loyalty Competence |
| Pink Compassion Sincerity Sophistication Sweet | Purple Royalty Luxury Spirituality Ambition | Brown Dependable Rugged Trustworthy Simple | Black Formality Dramatic Sophistication Security | White Clean Simplicity Innocence Honest |

Metaphors in visual imagery



Typefaces can convey character

- Fonts can elicit different emotions and associations
- Important in logo design



Avoid Dissonant and Accidental Priming

- Study market trends to identify user expectations (prototypicality and beauty-in-averageness effect)
- Avoid 'trigger words' that cause a visceral reaction.

Control:



Join BettingExpert

Username:

Email:

Password:

I accept the [Terms and Conditions](#)

Sign up +

Treatment:



Join BettingExpert

Username:

Email:

Password:

I accept the [Terms and Conditions](#)

100% privacy - we will never spam you!

Sign up +

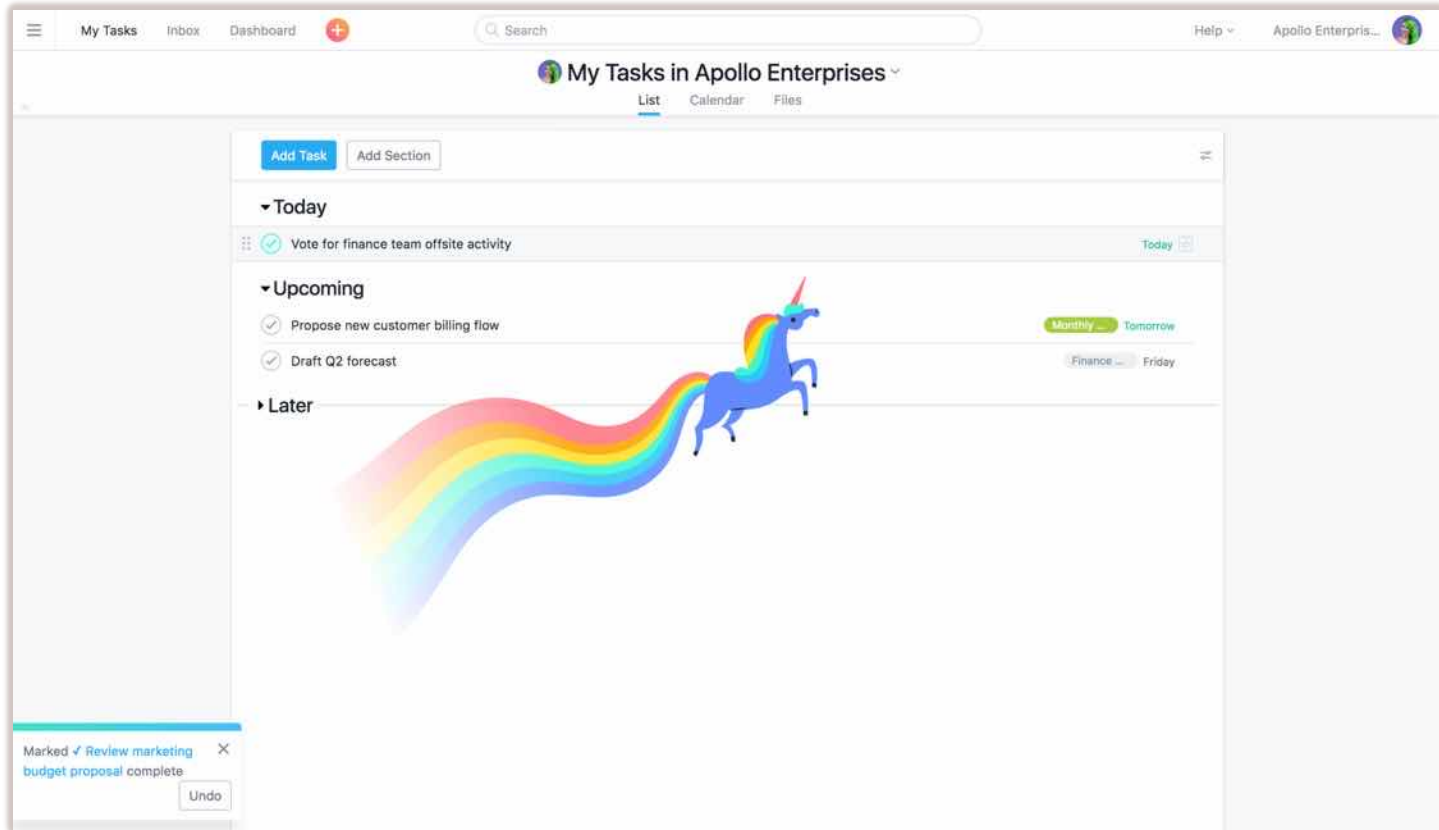
 **18.70% less signups**
Statistical confidence 96%

Peak-end rule

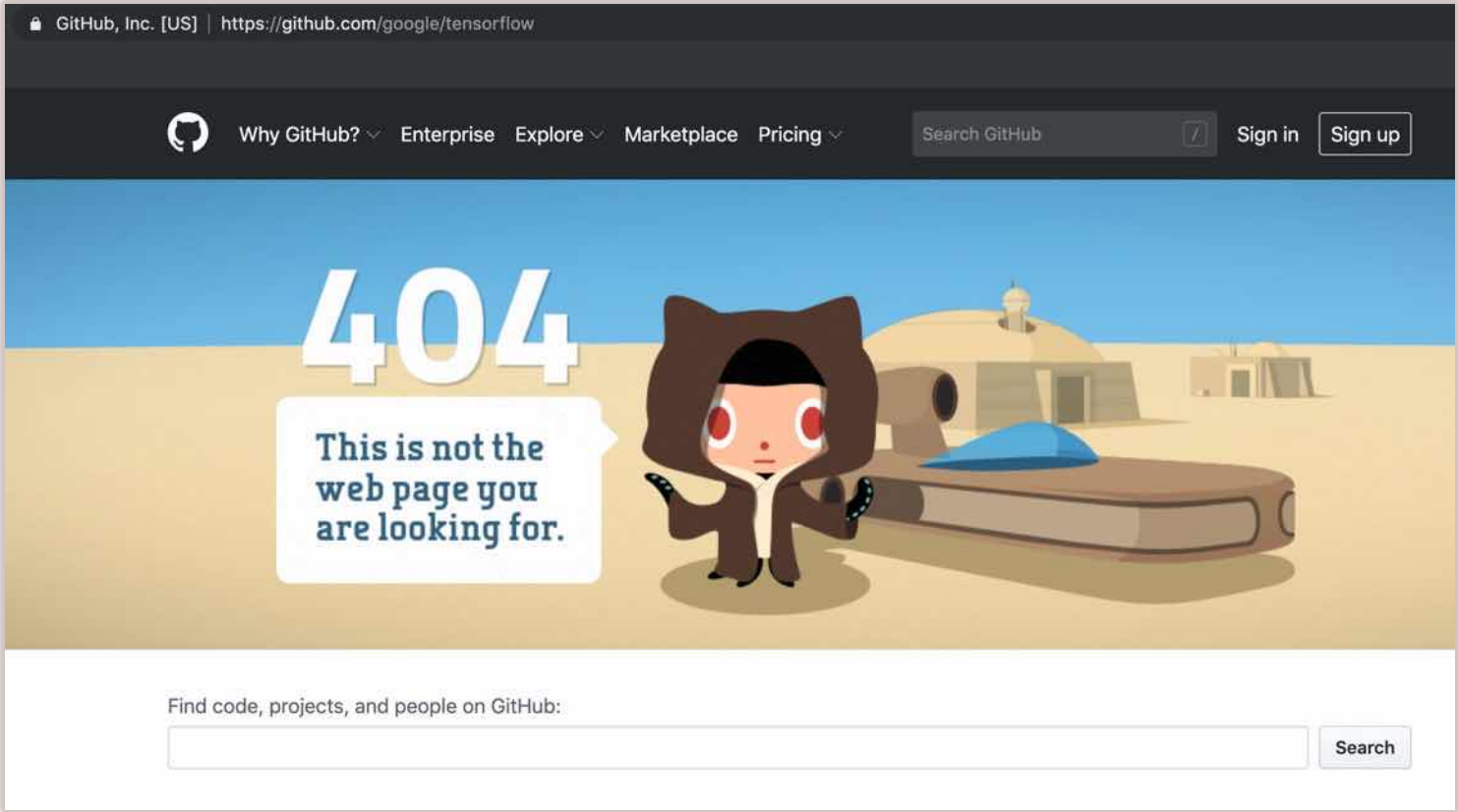
MEMORIES

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

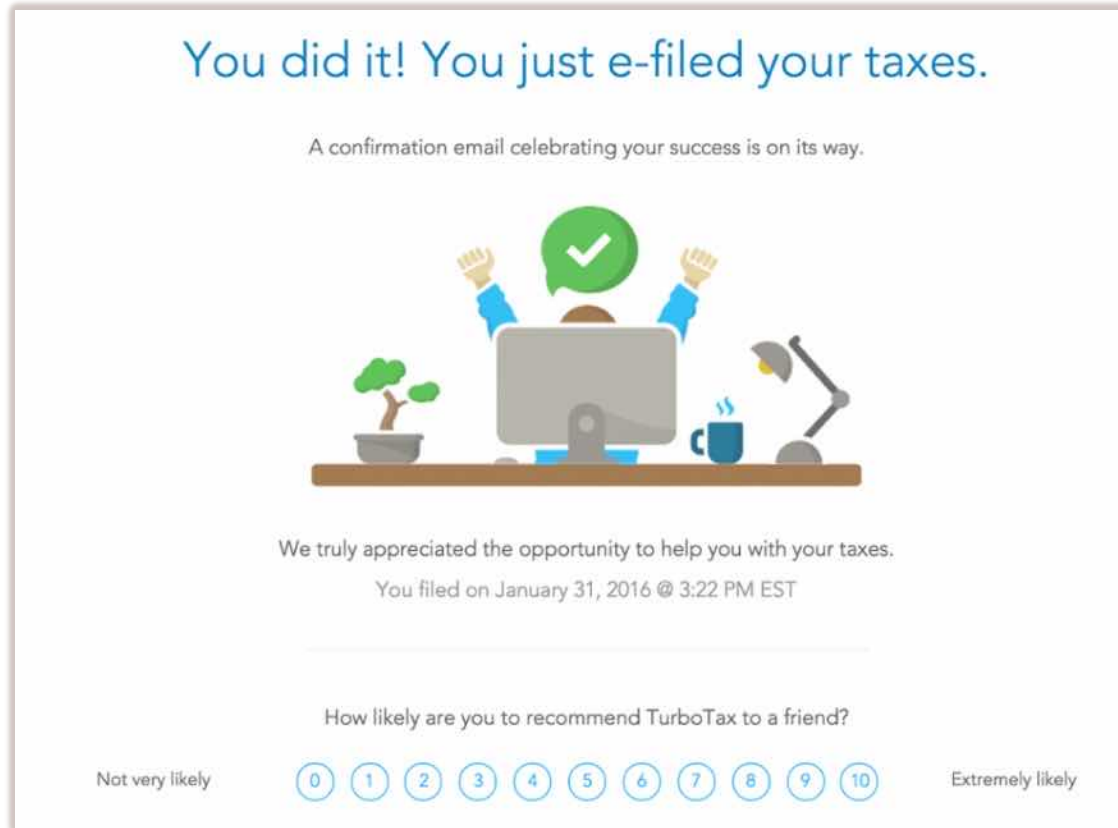
Creating positive peaks



Reduce the impact of negative peaks



Leave a memorable last impression



Loss aversion

A top-down photograph of two hands holding a single chocolate-glazed donut with colorful sprinkles. The donut is centered in a white, open cardboard box. The hands are positioned on either side of the donut, with fingers gently gripping it. The background is a light blue surface. The overall scene is brightly lit, highlighting the textures of the donut and the hands.

People will go to great lengths to avoid losing.
In fact, the psychological pain of losing is twice as powerful as the pleasure of winning.

Create an emotional bond with free trial

A screenshot of the Netflix homepage banner. The background is a collage of various Netflix titles including 'Bright', 'Brooklyn Nine-Nine', 'Boss Baby', 'Peppa Pig', 'American Horror Story', 'Iron Fist', 'The Good Place', 'Friends', 'Ozark', 'Maniac', and 'Jack Whitehall: Travels with Wildbeasts'. The Netflix logo is at the top center. A 'Sign In' button is in the top right. The main text 'See what's next.' is in large white font, with 'WATCH ANYWHERE. CANCEL AT ANY TIME.' below it. A red button with white text 'JOIN FREE FOR A MONTH >' is at the bottom center.

NETFLIX

Sign In

See what's next.

WATCH ANYWHERE. CANCEL AT ANY TIME.

JOIN FREE FOR A MONTH >

Create an emotional bond with free trial

The screenshot shows the homepage of the 'Roadrippers' website. The background is a light-colored topographic map. On the right side, there is a large, circular inset image of a coastal landscape with a prominent bridge over a canyon. The main text is centered on the left side of the page.

Navigation links: HOME, MAGAZINE, TRIP GUIDES, TRIP PLANNER. User options: Get Plus, Login, Get Started.

Ready to hit the road? Don't leave without us.

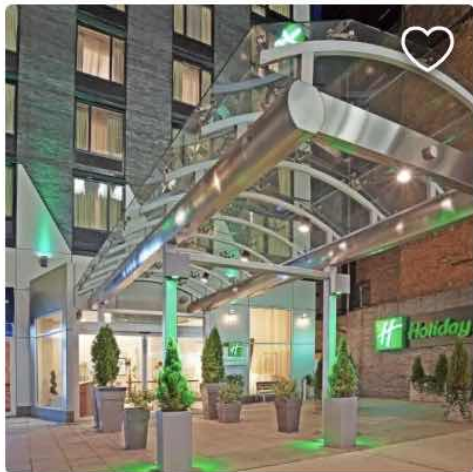
Map your route, discover amazing places, and get out there...

Let's get started

- Plan Your Trip
- Explore Places

STARTING FROM _____ DESTINATION _____ **Plan Trip**

Create FOMO with scarcity



Holiday Inn Manhattan 6th Ave - Chelsea



Good
1,596 reviews **7.5**

[Chelsea, New York – Show on map](#) (1.7 miles from center) –
Subway Access

Booked 2 times for your dates in the last 24 hours on our site

King Room with City View –

Only 6 rooms left on our site!

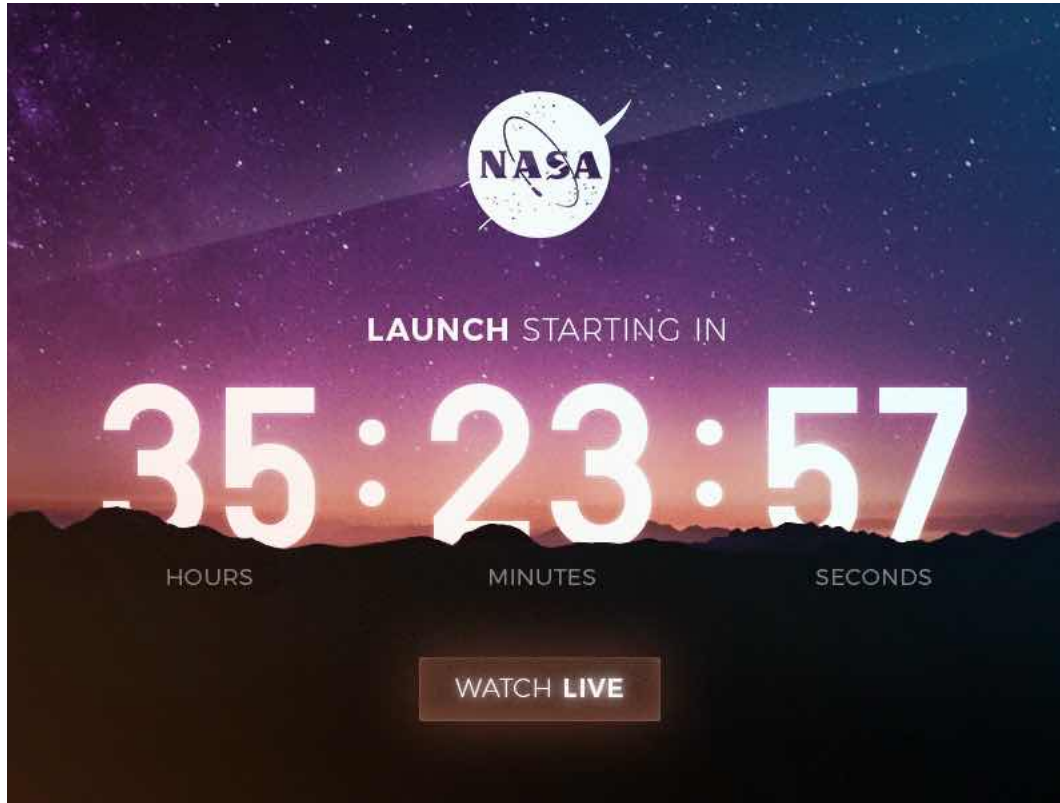
5 nights, 2 adults

US\$871

includes taxes and charges

[See our last available rooms >](#)

Create FOMO with a countdown clock





I'm only human after all!

Designer Biases

- Maslow's Hammer
- Confirmation bias
- Congruence bias
- False consensus bias
- Experimenter's bias
- ...

Acknowledge your biases and counteract!

- Cultivate curiosity
- Don't make assumptions
- Do research with real users
- Test alternative solutions



Source: Crazy Egg

A close-up photograph of a person's hands working at a desk. The left hand holds a blue pen over an open spiral-bound notebook. The right hand is positioned over a silver laptop keyboard. The background is softly blurred, showing a yellow wall and a white cup. An orange semi-transparent banner is overlaid across the middle of the image, containing the text "Embrace UX Research" in white.

Embrace UX Research



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