

Habit Theory

No screens

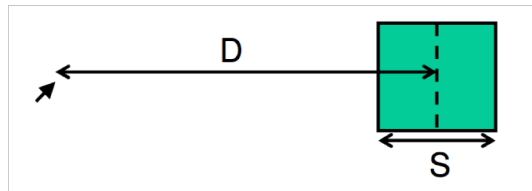


Prof. Lydia Chilton
COMS 4170
11 March 2019

Say your name



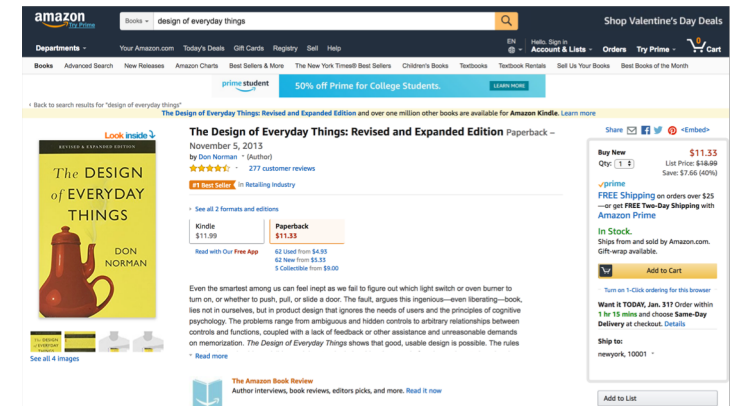
Users interact with the system to accomplish a goal.



Low-level goals:
Clicking, Typing

A screenshot of the 'Secure Payment Info' form on Amazon. The form includes a header with payment logos (MasterCard, VISA, AMEX, DISCOVER, PayPal). Below the logos are four input fields: 'Name (as it appears on your card)', 'Card number (no dashes or spaces)', 'Expiration date' (with dropdown menus for month and year), and 'Security code (3 on back, Amex: 4 on front)'. The security code field is shown with a grey background and a pink border, with the number '1234' visible.

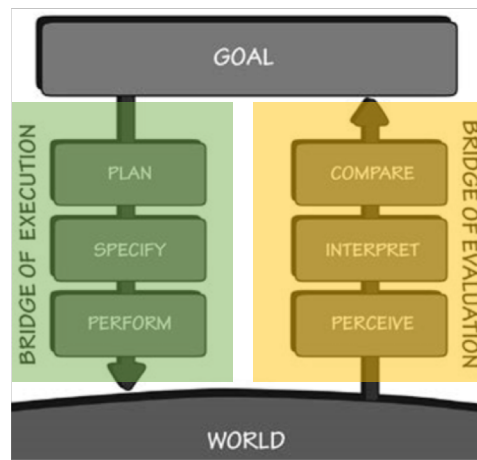
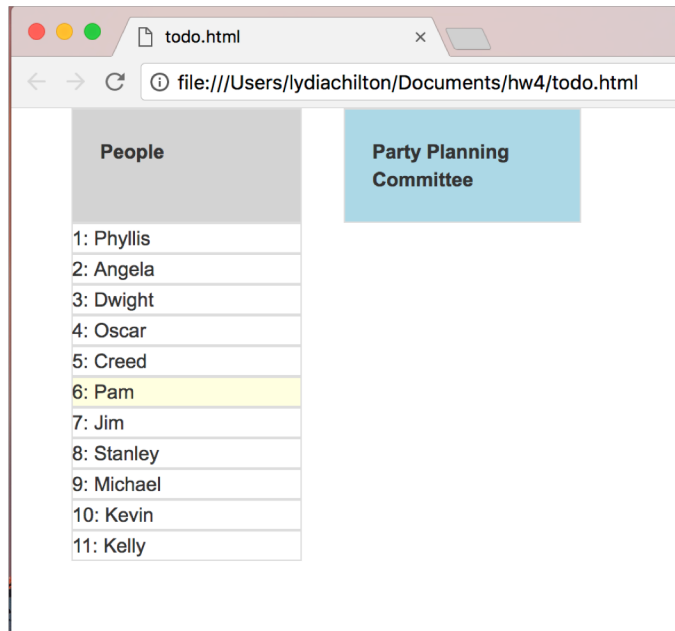
Intermediate goals:
Filling out forms



High-level goals:
Buying a book

Low level user model of how people achieve the goal

There are visible **actions** the user can **execute**



There is visible **feedback** the user can **evaluate**



What brings people to your app?

The screenshot shows the Amazon product page for the book "The Design of Everyday Things: Revised and Expanded Edition" by Don Norman. The page features a search bar at the top with the query "design of everyday things". The main content area includes the book's cover, a "Look inside" button, and a "prime student" banner. The product title is "The Design of Everyday Things: Revised and Expanded Edition Paperback". The author is Don Norman, and the publication date is November 5, 2013. The book has a 4.5-star rating from 277 customer reviews and is a "#1 Best Seller" in the Retailing Industry. The price for the paperback is \$11.33, with a list price of \$18.99. The page also displays shipping options, including Prime Free Shipping, and an "Add to Cart" button. A section for "The Amazon Book Review" is visible at the bottom.

And how do you get them to come back tomorrow?

Habit Formation Theory

People have lots of goals they want to achieve



Eat Healthy



Learn French



Play in the NBA



Watch less TV



Get up when the alarm goes off the first time.
Not after pressing snooze so many times you
are late

Good Intentions \neq Success

Why do some people succeed?

Good habits.

Definition of Habit

The choices that all of us deliberately make at some point, and then **stop thinking about** but continue doing, often every day.

Two theories of action: Conscious Control vs. Habits

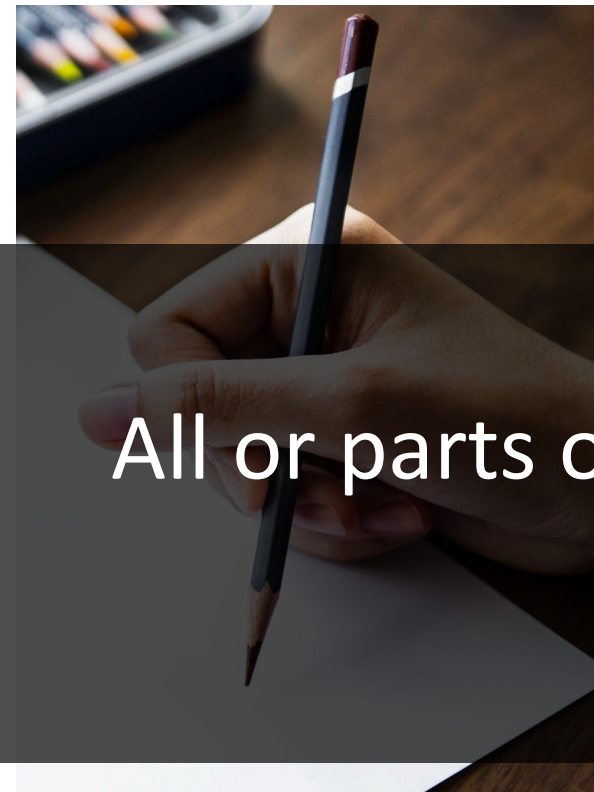
Many people model themselves as agents in control of our decisions.

- “intention”
- “personal responsibility”
- “will power”
- “executive control”

Habits are **unconscious** and determine at least **40% of our behavior.**

Conscious or unconscious?

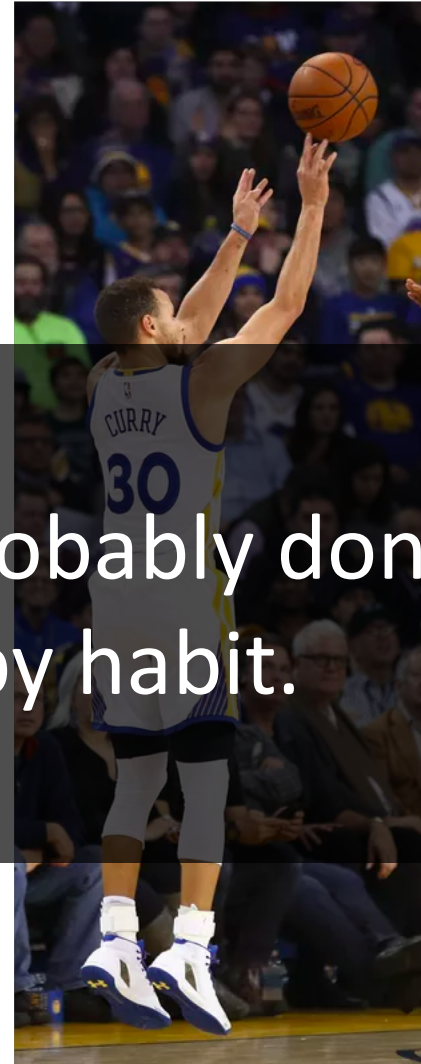
The angle you hold your pencil at?



The way you brush your hair?



Shooting a basketball



Your "decision" to check email



All or parts of these tasks are probably done subconsciously, governed by habit.



Your "decision" where to eat?

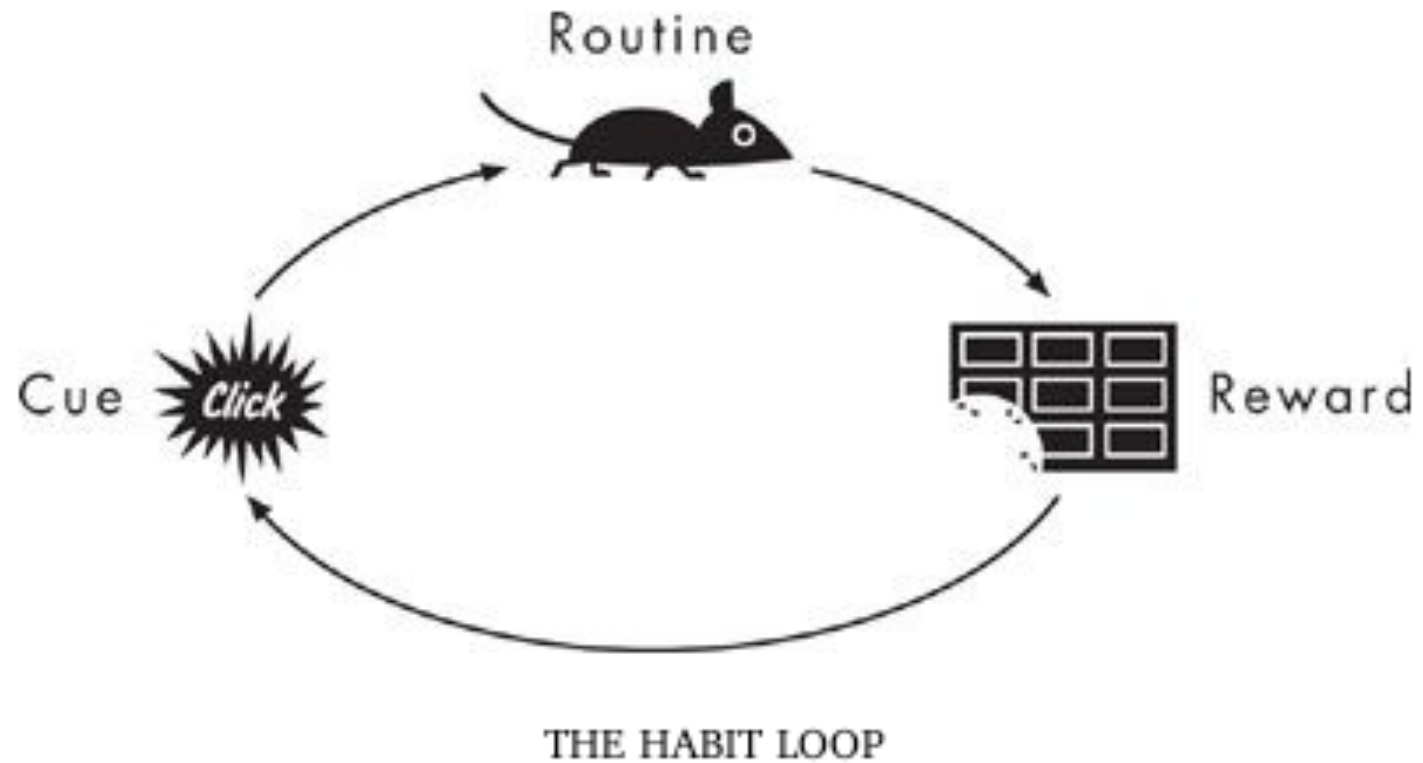


Why do we have habits?

- Habits **save energy** by cutting down on decisions.
- Allows us to do **multiple tasks** (like walk and talk) because we don't have to focus on each one.
- To make **quick decisions**.
 - People are paralyzed by indecision about small things.
 - (Me: when I give talk: What should I do with my arms???)
- Our brains had **existing infrastructure** for it.
 - Habits are stores in the oldest reptilian part of the brain (basal ganglia) to control automatic behavior like breaking and swallowing.

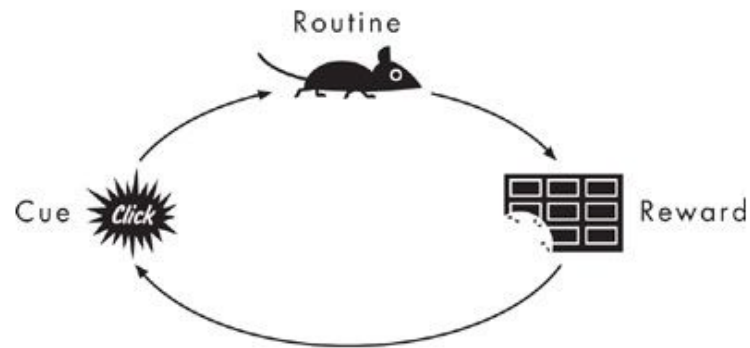
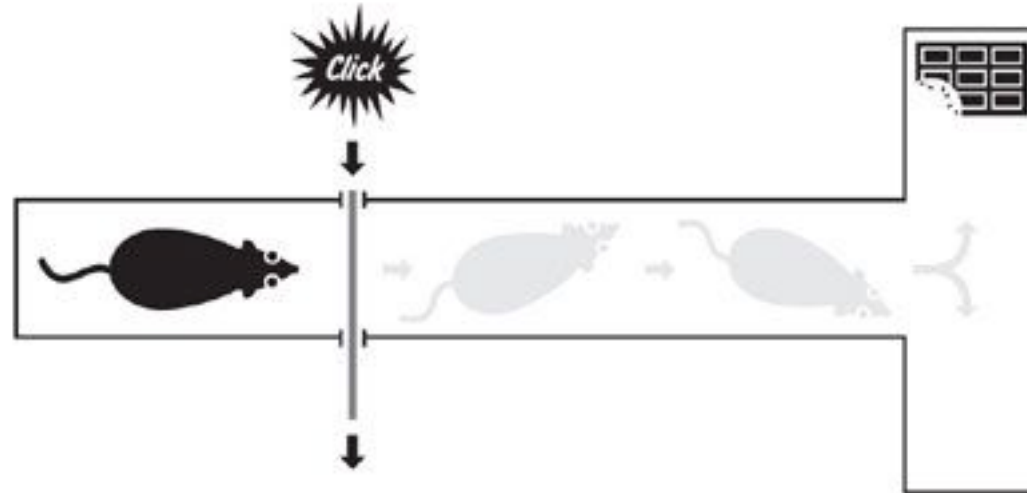
The Habit Loop

Mechanism of Habits



Teaching rats to run a maze:

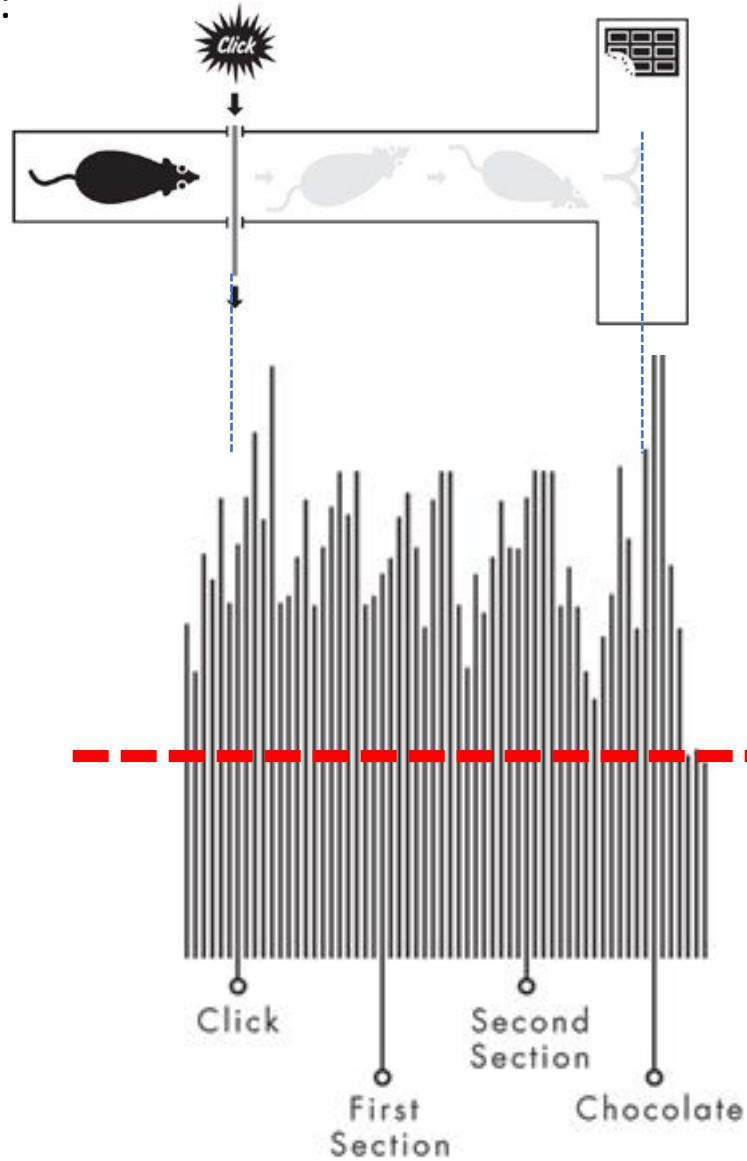
Cue, Routine, Reward



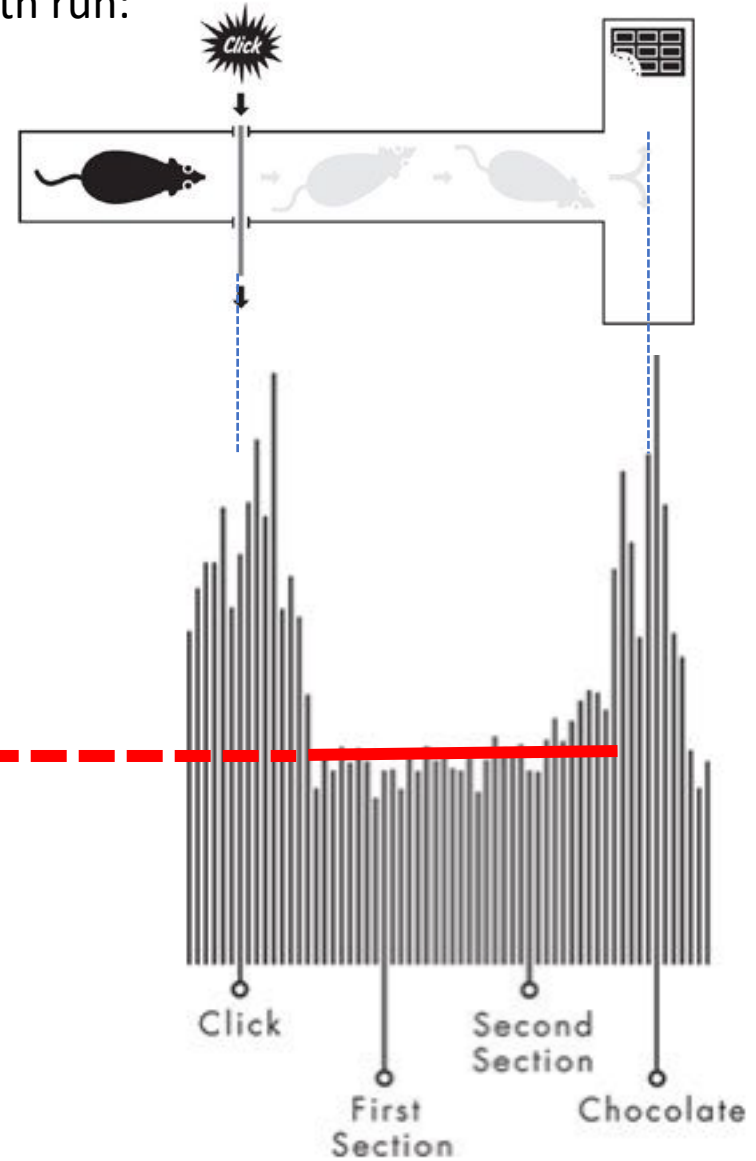
THE HABIT LOOP

Rat brain activity levels

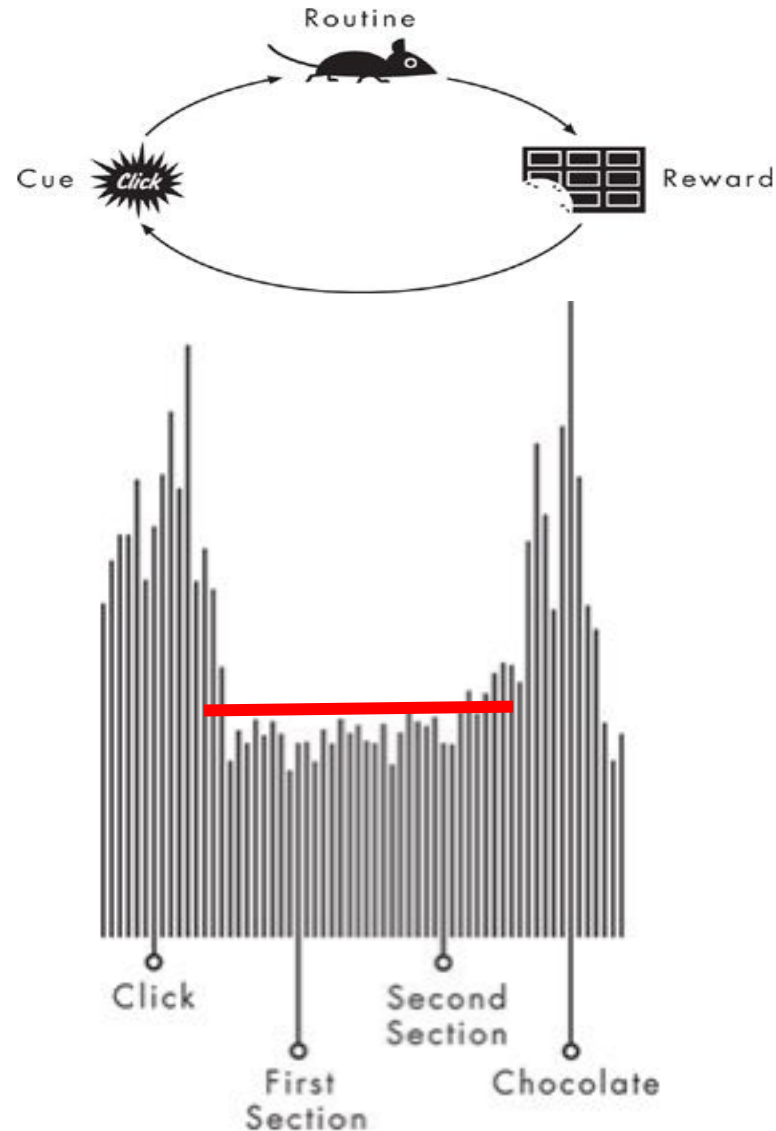
First run:



100th run:

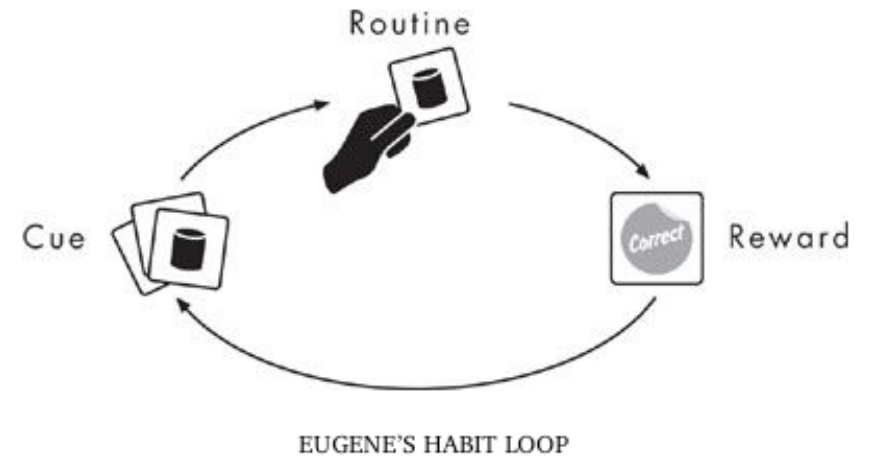


During habitual behavior: the Action becomes routine, and the agent stops thinking about it.



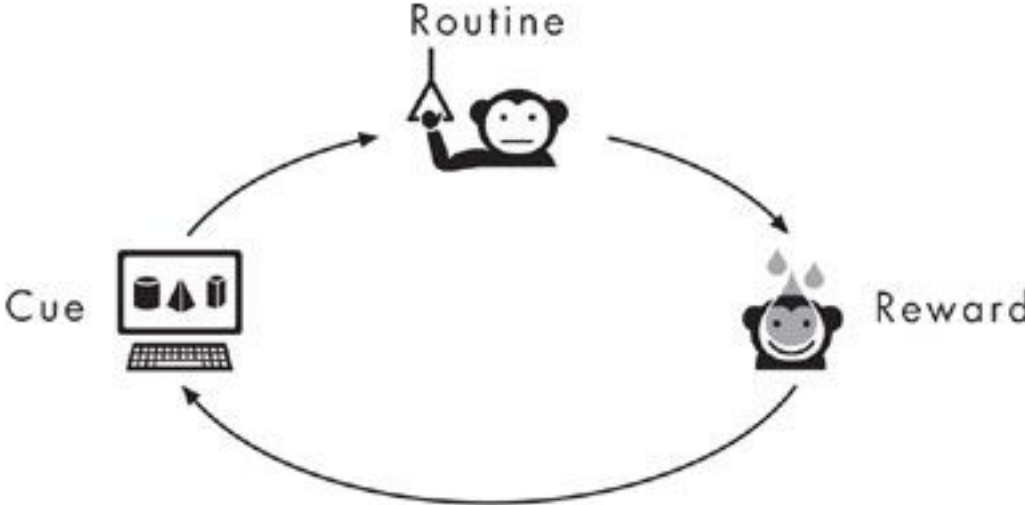
Human Patient: “Eugene”

- Only has a basal ganglia
- No new memory formation
 - Still able to learn



How to Create a Habit

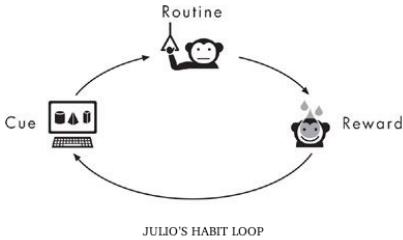
Monkey Experiments on Creating Habits



JULIO'S HABIT LOOP



Monkey Experiments: Neural Firing

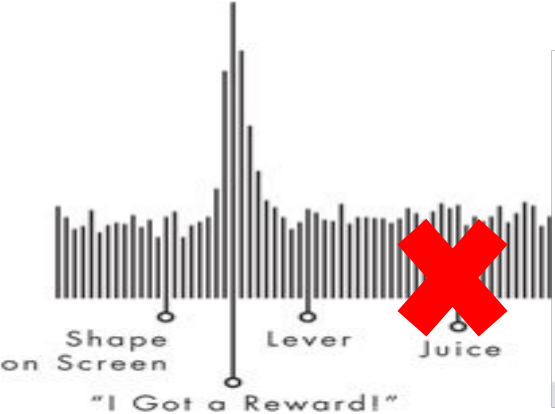


Early Iterations



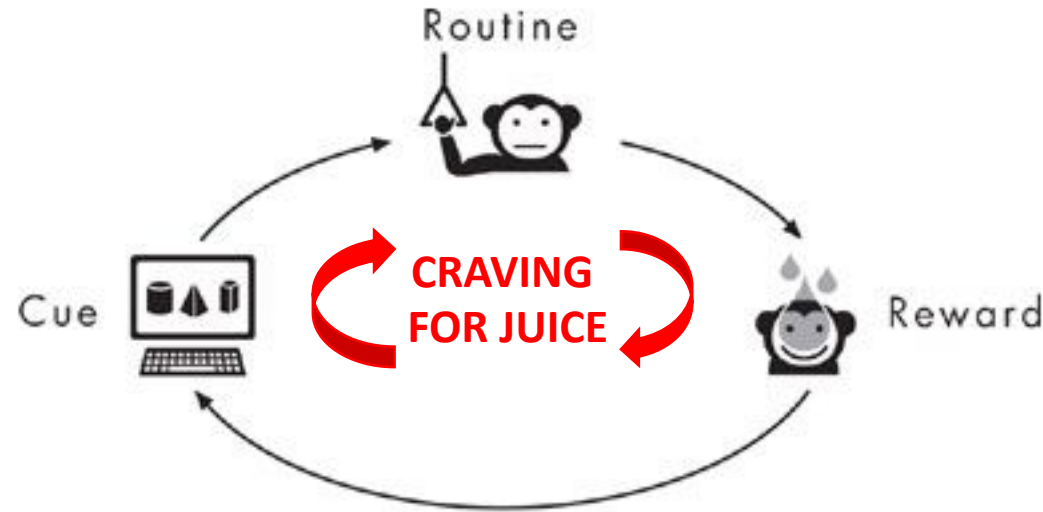
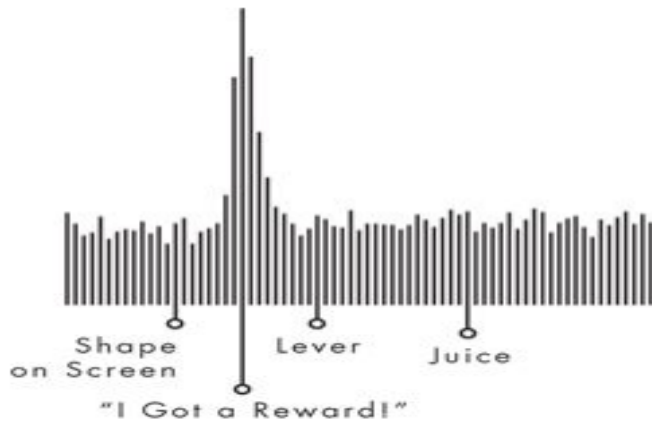
Rational response
to incentives

Late Iterations



Habit – a choice we
make *without thinking*
and continue to do
everyday

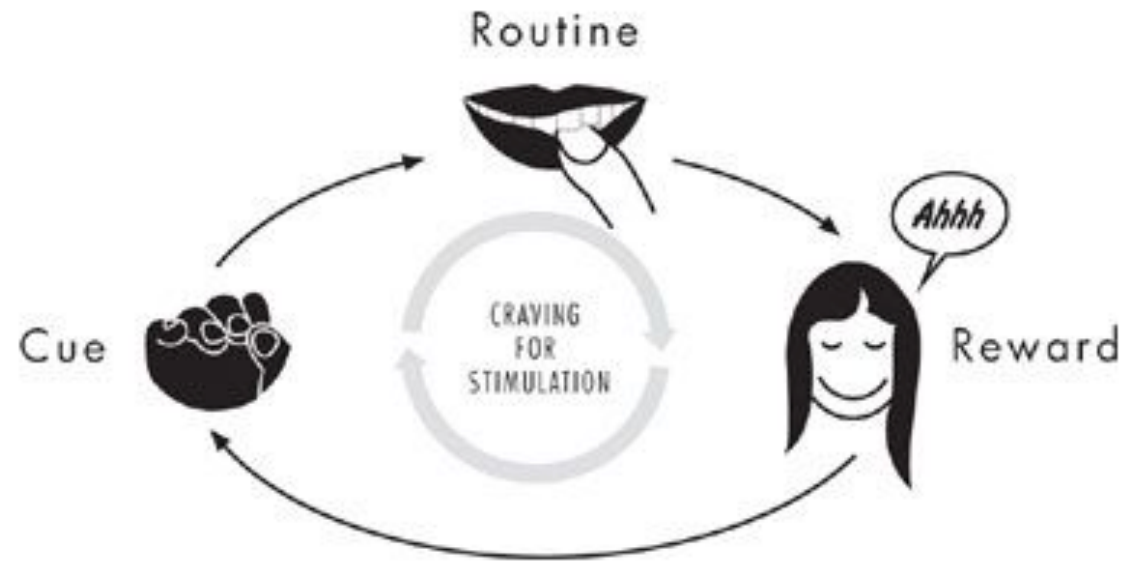
Craving: A strong feeling of desire for something before you get it.



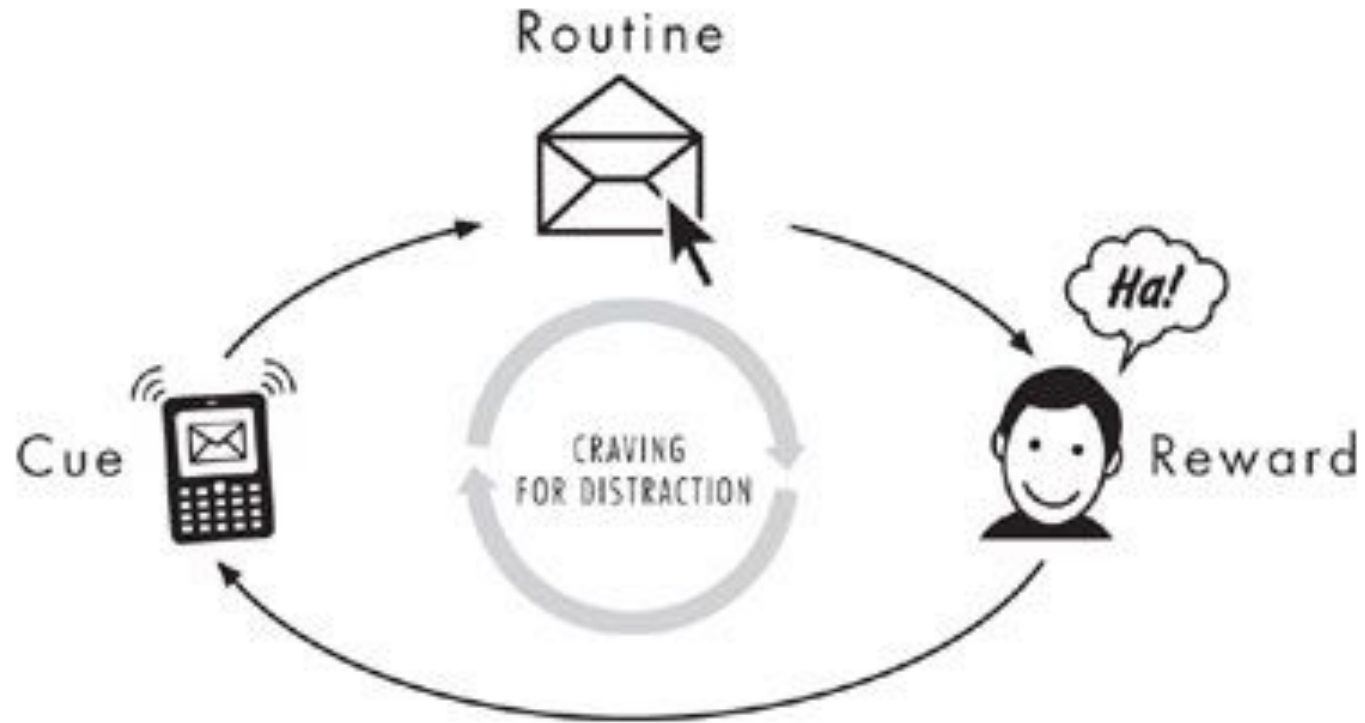
McDonalds: Craving for Taste



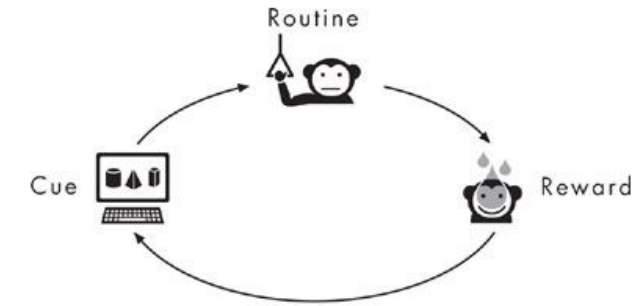
Nail Biting: Craving for Stimulation



Email: Craving for distraction



What happens if you give him juice sometimes but not others?



What draws us to act is **not the sensation** we receive from the reward itself,

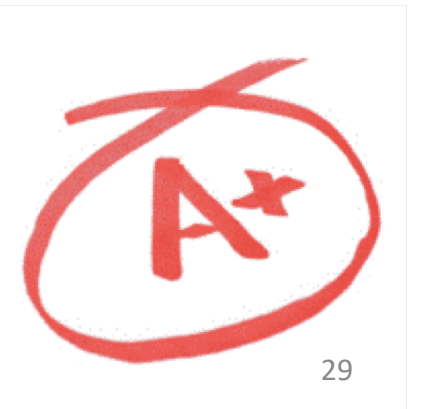
but the need to **alleviate the craving** for that reward.

What else in life has Variable Rewards?



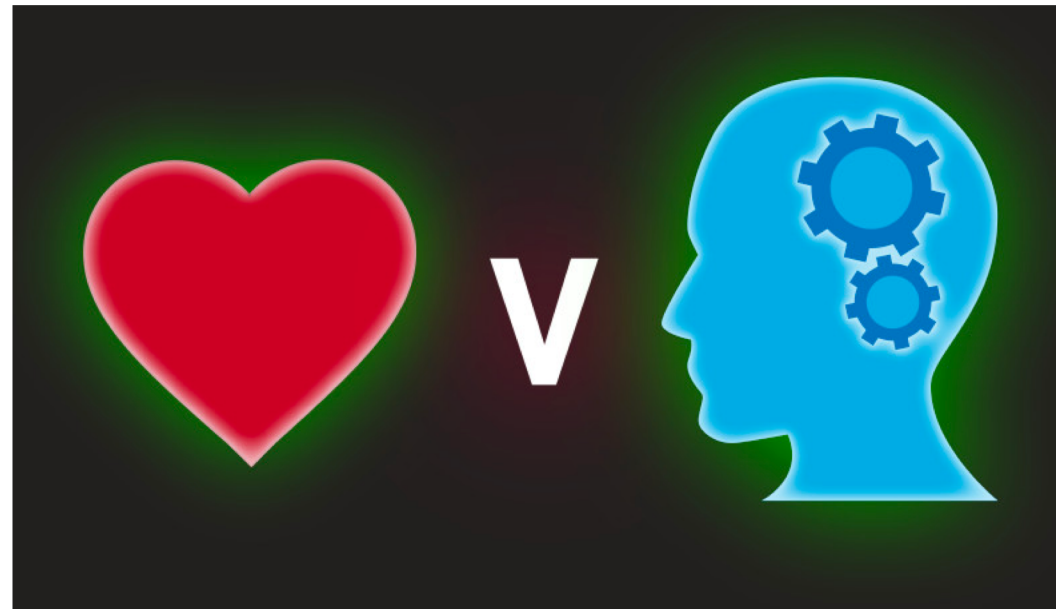
Types of Variable Reward

- Social Acceptance (Group)
- Material Goods, money, information (Hunt)
- Mastery, Competency, Completion, Consistency (Self)

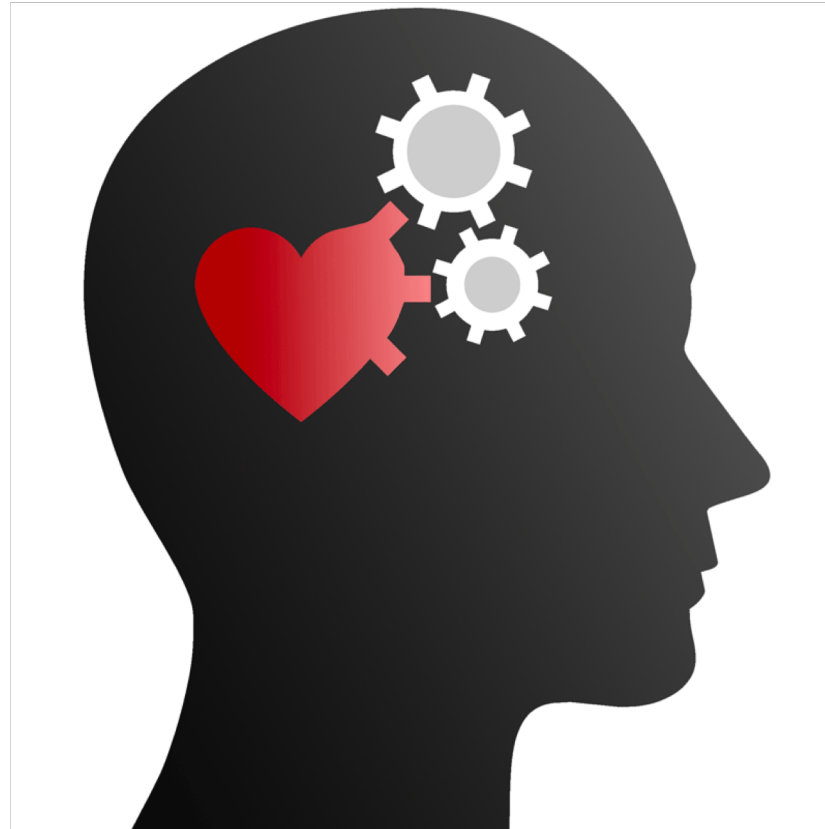


Feelings drive actions

There is a common false notion that **feelings** and **thinking** (rationality) are opposites



Feelings are actually an important part of rational decision making and action



How do you know when to sleep?



You feel tired

How do you know when to run away?



You feel scared

How do you know when to eat?



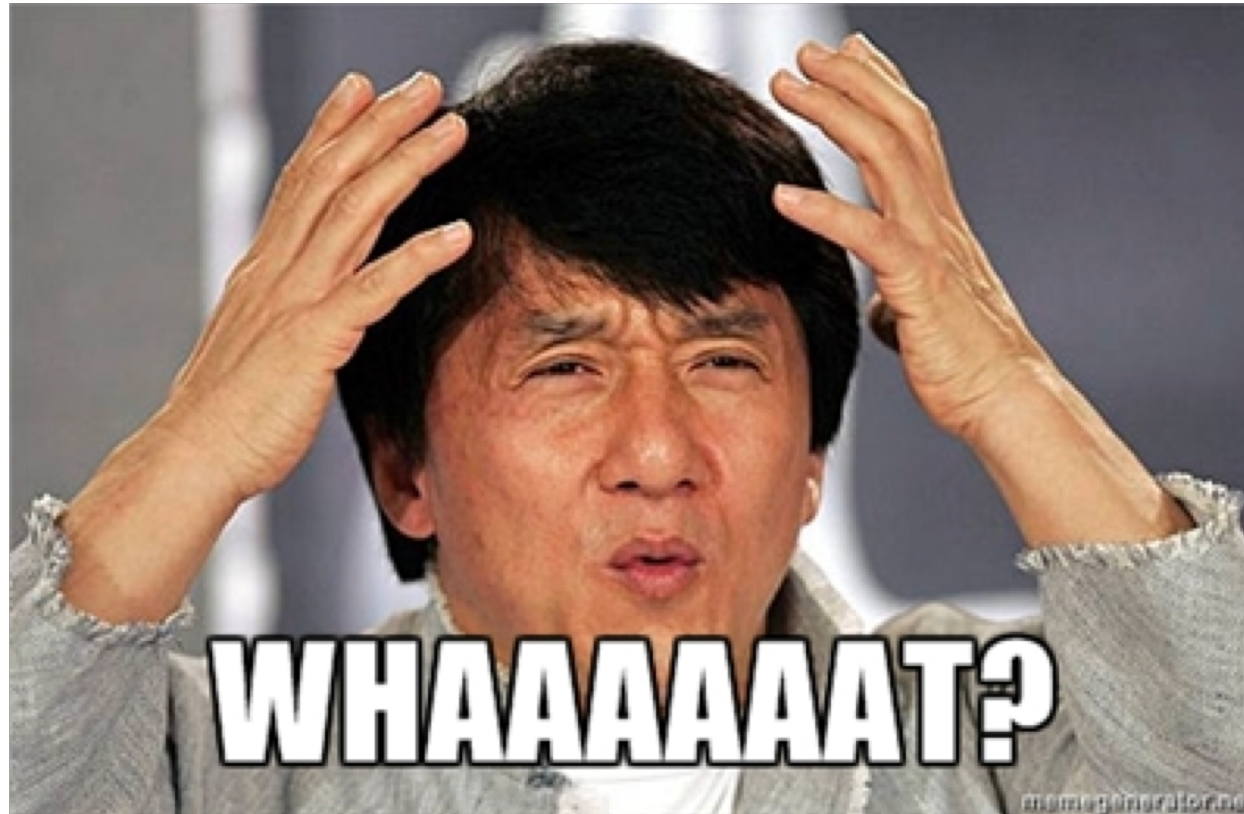
You feel hungry

How do you know when to pee?



You feel antsy?

How do you know when to ask a question?



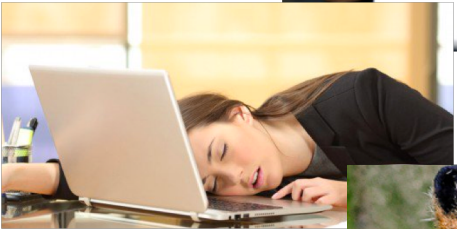
You feel **confused**

Feelings drive behavior



Hungry

Eat



Tired

Sleep



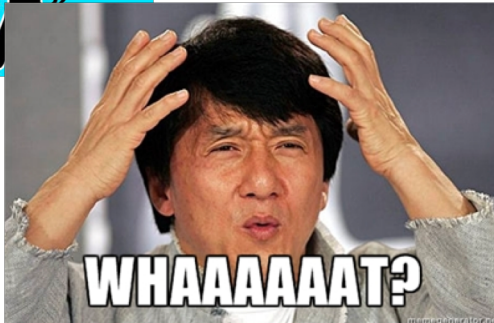
Fear

Run away



Antsy

Pee



Confusion

Ask

Feelings drive behavior



Stressed

Escape: TV, facebook
Comfort: food, friends



Bored

Seek entertainment,
Seek attention



Happy

Celebrate, tell people!

How to build habit-forming products

Goal of a Habit-Forming Product

To solve the user's **pain**
by creating an **association**
so that the user **identifies** the product
as the source of **relief**.

Sources of Pain

- Stanford Habit Psychologist BJ Fogg states that all humans are motivated to:
 - seek **pleasure** and avoid **pain**,
 - seek **hope** and avoid **fear**,
 - seek **social acceptance** and avoid **rejection**.

Examples of Triggers

Boredom
Loneliness
Frustration
Confusion
Indecisiveness
Validation of importance
Fear of missing out

Examples of Triggers

	Facebook/Twitter
Boredom	
Loneliness	
Frustration	
Confusion	
Indecisiveness	
Validation of importance	
Fear of missing out	

Examples of Triggers

	Facebook/Twitter
Boredom	
Loneliness	
Frustration	
Confusion	
Indecisiveness	
Validation of importance	
Fear of missing out	

Examples of Triggers

	Facebook/Twitter	Google
Boredom		
Loneliness		
Frustration		
Confusion		
Indecisiveness		
Validation of importance		
Fear of missing out		

Examples of Triggers

	Facebook/Twitter	Google
Boredom		
Loneliness		
Frustration		
Confusion		
Indecisiveness		
Validation of importance		
Fear of missing out		

Examples of Triggers

	Facebook/Twitter	Google	News
Boredom			
Loneliness			
Frustration			
Confusion			
Indecisiveness			
Validation of importance			
Fear of missing out			

Examples of Triggers

	Facebook/Twitter	Google	News
Boredom			
Loneliness			
Frustration			
Confusion			
Indecisiveness			
Validation of importance			
Fear of missing out			

Examples of Triggers

	Facebook/Twitter	Google	News	Email
Boredom				
Loneliness				
Frustration				
Confusion				
Indecisiveness				
Validation of importance				
Fear of missing out				

Examples of Triggers

	Facebook/Twitter	Google	News	Email
Boredom				
Loneliness				
Frustration				
Confusion				
Indecisiveness				
Validation of importance				
Fear of missing out				

Sources of Pain

- Stanford Habit Psychologist BJ Fogg states that all humans are motivated to:
 - seek **pleasure** and avoid **pain**,
 - seek **hope** and avoid **fear**,
 - seek **social acceptance** and avoid **rejection**.

What others?

Are there other applications you suspect are use underlying needs to trigger engagement?

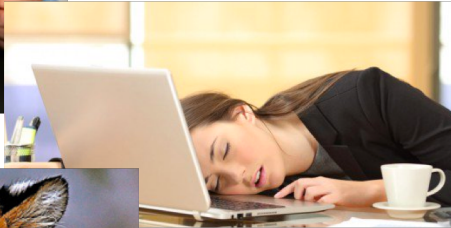
	Facebook/Twitter	Google	News	Email
Boredom				
Loneliness				
Frustration				
Confusion				
Indecisiveness				
Validation of importance				
Fear of missing out				

Are we slaves to our unconscious behavior?

Hungry



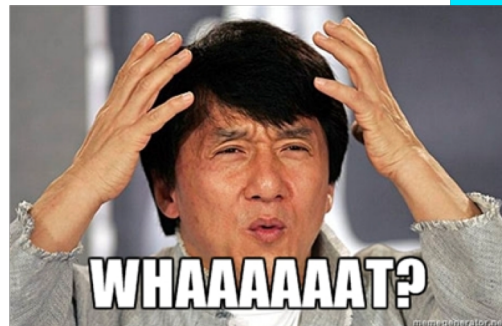
Tired



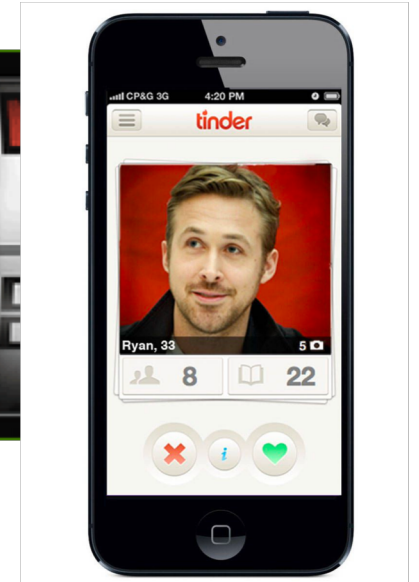
Fear



Antsy



Confusion



	Facebook/Twitter	Google	News	Email
Boredom				
Loneliness				
Frustration				
Confusion				
Indecisiveness				
Validation of importance				
Fear of missing out				

The Ethics of Building Habit-forming apps

As a developer, you will be in situations where you have to decide whether it's ethical to build an app



What are the pro's and con's for all stakeholders?


Would you want it on the front page of the New York times?

Snapchat vs. Duolingo - Streaks

- ▶ **Alec**
Delivered just now 844 🔥😎😏
- ▶ **Mathew Labrador**
Delivered just now 4 🔥😁😏
- ▶ **Megan Peterson**
Delivered just now 6 🔥😏
- ▶ **Antonio**
Delivered just now 31 🔥😏




Practice Complete! +10 XP



365 day streak

Tu W Th F Sa Su M



You've met your daily goal!

CONTINUE



Why do **developers** implement streaks?

- Create incentives for users to engage with the app every day.

What are the Pros and Cons of Streaks for Users?

Snapchat

Pros

- Quicker engagement
- Social feedback

Cons

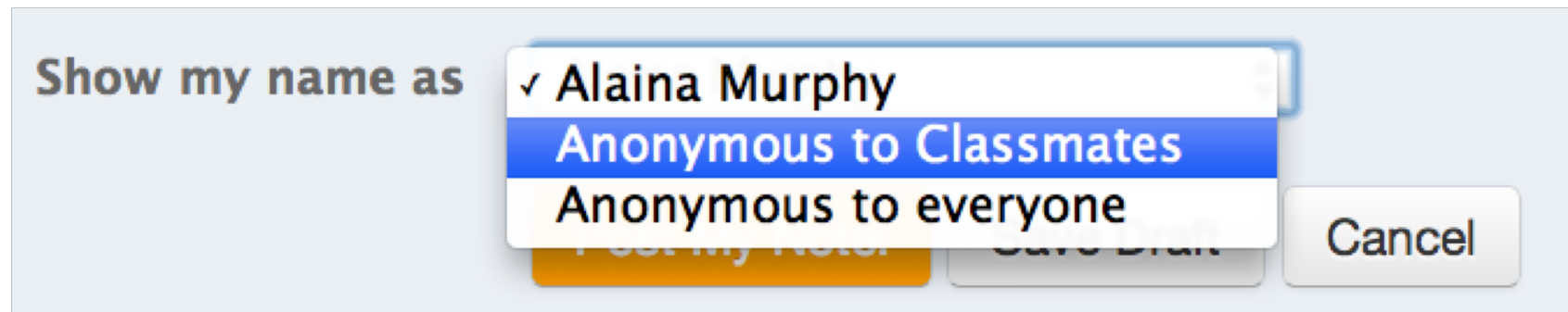
- Uses social pressure to get you to use the app

Duolingo

- Don't need to remember to log on.
- You learn Greek.

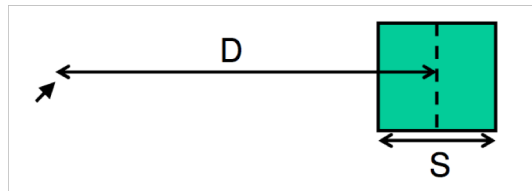
- Stress and guilt
- Losing a streak feels bad and disincentivizes logging on

Pros and Cons of Piazza Anonymity



Summary

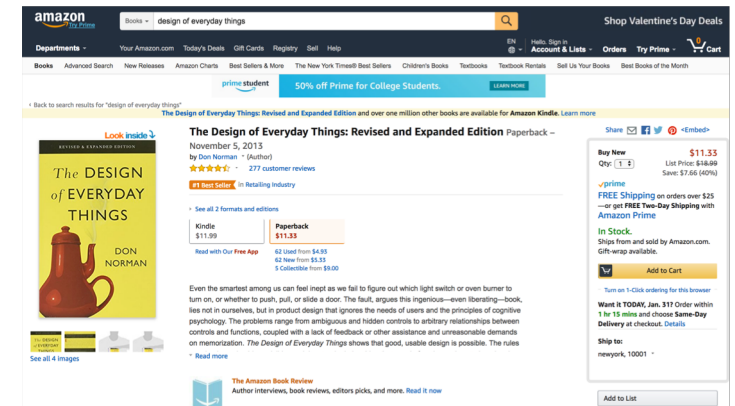
Users interact with the system to accomplish a goal.



Low-level goals:
Clicking, Typing

A screenshot of the 'Secure Payment Info' form on Amazon. The form includes a header with payment logos (MasterCard, VISA, AMEX, DISCOVER, PayPal). Below the logos are four input fields: 'Name (as it appears on your card)', 'Card number (no dashes or spaces)', 'Expiration date' (with dropdown menus for '01 - January' and '2013'), and 'Security code (3 on back, Amex: 4 on front)'. The security code field shows two examples: '123' and '1234'.

Intermediate goals:
Filling out forms



High-level goals:
Buying a book

What brings people to your app?

The screenshot shows the Amazon product page for the book "The Design of Everyday Things: Revised and Expanded Edition" by Don Norman. The page features a search bar at the top with the text "design of everyday things". Below the search bar, there are navigation links for "Departments", "Your Amazon.com", "Today's Deals", "Gift Cards", "Registry", "Sell", and "Help". A "prime student" banner offers "50% off Prime for College Students." The main product listing includes the book cover, the title, author, publication date (November 5, 2013), and a 4.5-star rating from 277 customer reviews. It is labeled as a "#1 Best Seller" in the Retailing Industry. The price for the paperback is \$11.33, with a list price of \$18.99. The page also shows the "Add to Cart" button and shipping information.

amazon
Books design of everyday things

Shop Valentine's Day Deals

Departments Your Amazon.com Today's Deals Gift Cards Registry Sell Help

prime student 50% off Prime for College Students. LEARN MORE

Back to search results for "design of everyday things"

The Design of Everyday Things: Revised and Expanded Edition and over one million other books are available for Amazon Kindle. Learn more

Look inside

The Design of Everyday Things: Revised and Expanded Edition Paperback –
November 5, 2013
by Don Norman (Author)
★★★★☆ 277 customer reviews
#1 Best Seller in Retailing Industry

See all 2 formats and editions

Kindle \$11.99	Paperback \$11.33
-------------------	----------------------

Read with Our Free App

- 62 Used from \$4.93
- 62 New from \$5.33
- 5 Collectible from \$9.00

Even the smartest among us can feel inept as we fail to figure out which light switch or oven burner to turn on, or whether to push, pull, or slide a door. The fault, argues this ingenious—even liberating—book, lies not in ourselves, but in product design that ignores the needs of users and the principles of cognitive psychology. The problems range from ambiguous and hidden controls to arbitrary relationships between controls and functions, coupled with a lack of feedback or other assistance and unreasonable demands on memorization. *The Design of Everyday Things* shows that good, usable design is possible. The rules

Read more

The Amazon Book Review
Author interviews, book reviews, editors picks, and more. Read it now

Buy New \$11.33
Qty: 1 List Price: \$18.99
Save: \$7.66 (40%)

prime
FREE Shipping on orders over \$25
—or get FREE Two-Day Shipping with Amazon Prime

In Stock.
Ships from and sold by Amazon.com.
Gift-wrap available.

Add to Cart

Turn on 1-Click ordering for this browser

Want it TODAY, Jan. 31? Order within 1 hr 15 mins and choose Same-Day Delivery at checkout. Details

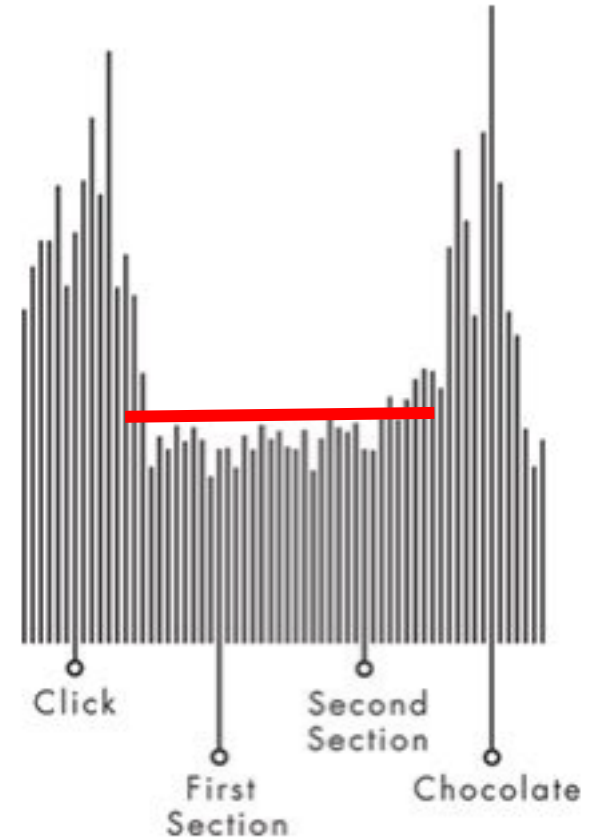
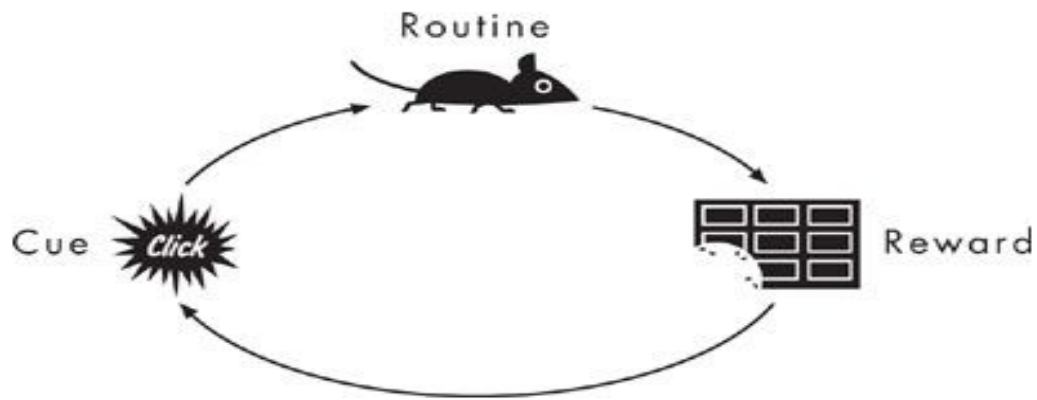
Ship to:
newyork, 10001

Add to List

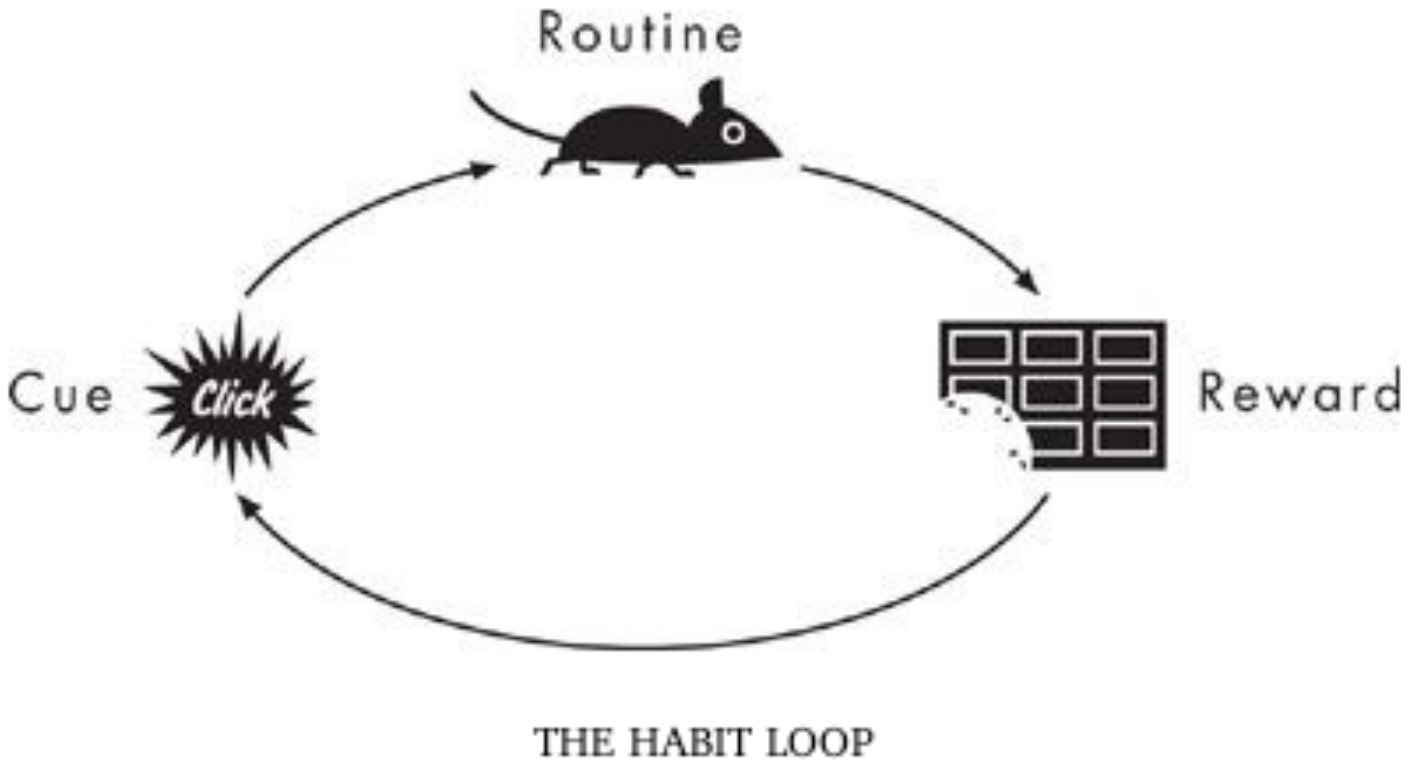
And how do you get them to come back tomorrow?

Habits:

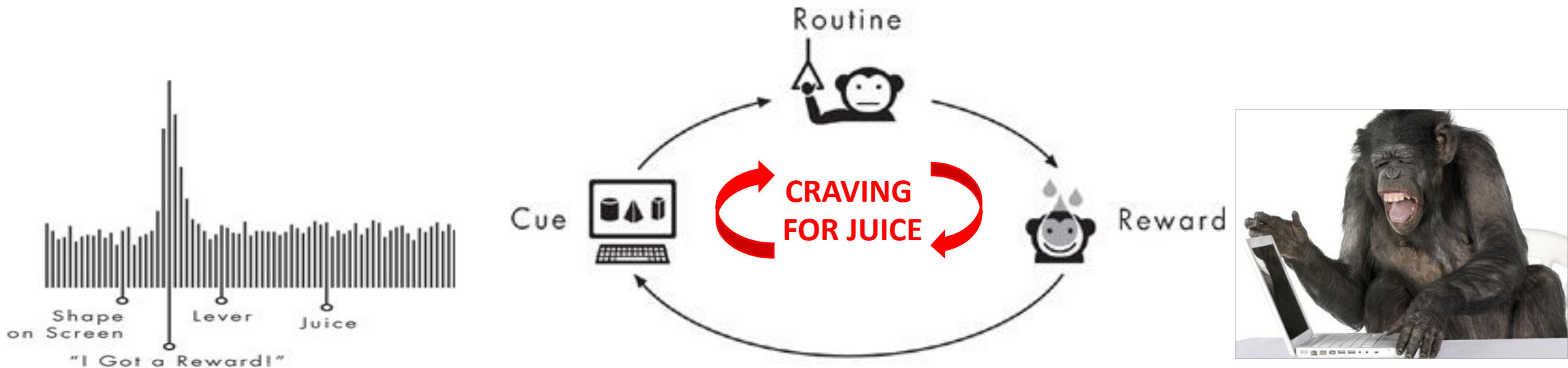
The choices that all of us deliberately make at some point, and then **stop thinking about** but continue doing, often every day.



The Habit Loop



The Habit Loop is Driven By Cravings



What draws us to act is **not the sensation** we receive from the reward itself,
but the need to **alleviate the craving** for that reward.

Feelings drive behavior

Hungry



Tired



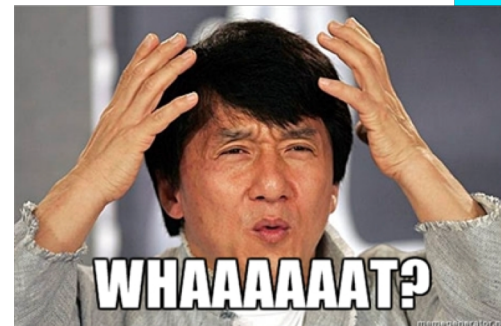
Fear



Antsy



Confusion



Eat

Sleep

Run away

Pee

Ask

Building Habit Forming-Products

to solve the user's **pain**
by creating an **association**
so that the user **identifies** the product
as the source of **relief**.

	Facebook/Twitter	Google	News, Instagram	Email
Boredom				
Loneliness				
Frustration				
Confusion				
Indecisiveness				
Validation of importance				
Fear of missing out				

As a developer, you will be in situations where you have to decide whether it's ethical to build an app



What are the pro's and con's for all stakeholders?

Would you want it on the front page of the New York times?