

AMENDED Exhibit 769

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR

MDL No. 3047

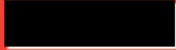
In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

Produced in Native

 UX Research

Principles of Habit Building for YouTube

[go/BuildingHabits](#)

 - DAV Growth Team

Special thanks to  for all her
feedback and expertise on this report.

The purpose of this report is to help
with brainstorming features and
concepts that build habits on YouTube

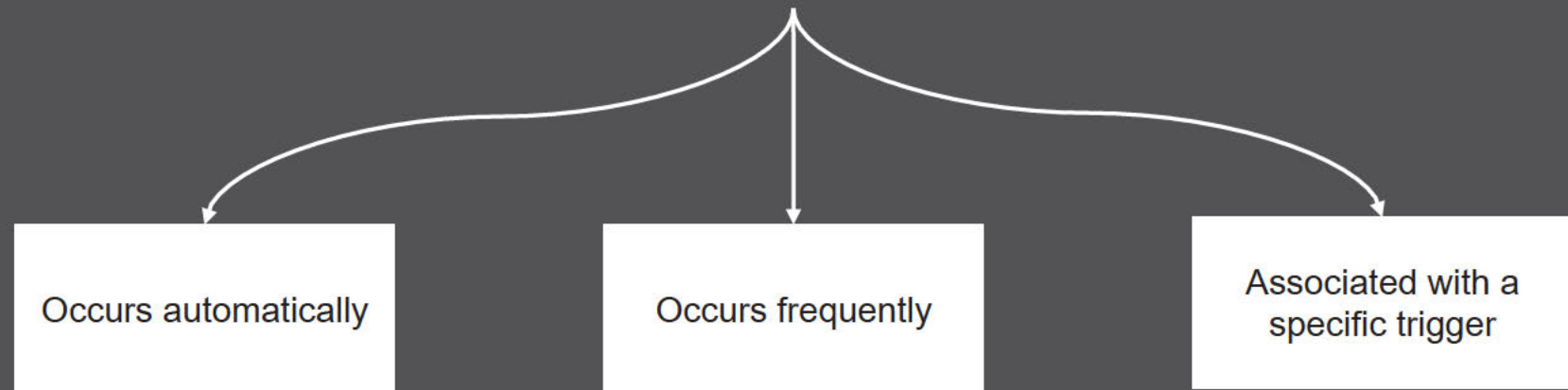
Google | Confidential and Proprietary

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A habit is a behavior that frequently occurs in the context of a specific trigger with little to no conscious thought.

Key Components of a Habit

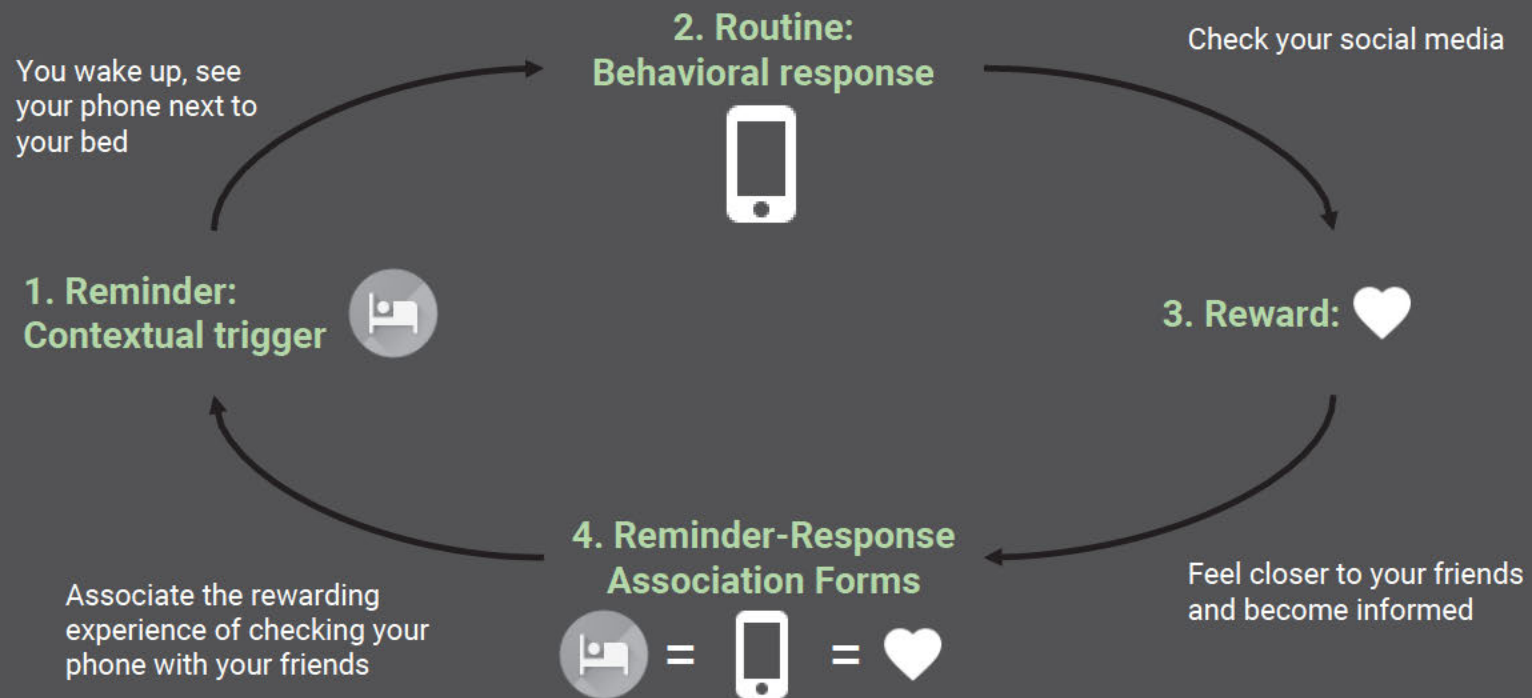


Some Habit Facts

- **1-2 months** are required to create a stable habit ([Source](#))
- **50%** of behavior is repeated daily in the same context ([Source](#))
- **55%** of habits are accompanied by multitasking/mind wandering ([Source](#))
- **Habits** are sensitive! They stop when contexts/behaviors change ([Source](#))
- **Goals** are motivated by rewarding outcomes, habits are not. (You won't go to the theatre unless it's a movie you want to watch. But we eat popcorn even if we're not hungry because eating popcorn is a habit that doesn't need a reward) ([Source](#))

3 R's of Habit Building

Reminder - Routine - Reward



Sources [\[1\]](#) [\[2\]](#) [\[3\]](#)

5 Principles of Habit Building

PRINCIPLE 1

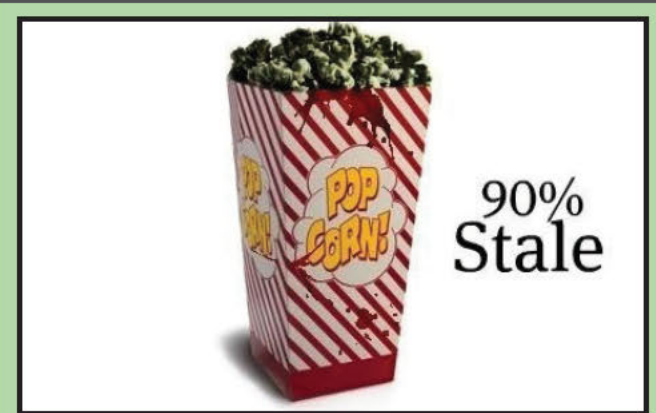
Habits begin with goal pursuit

Goals spark users into action. A number of motivational goals exist:

- **Knowledge** : “I want to learn this recipe, let me Google it”
- **Social Pressure**: “Use Snapchat to fit in with my friends”
- **Pleasure**: “I want something good to eat - TacoBell is closest”
- **Anticipation**: “I don’t want to miss out - let me check that post”

Habits form as people **repeatedly** pursue goals through particular means in **stable contexts**.

People tend to repeat responses that are **rewarding**, and habits tend to develop from actions that consistently yield positive outcomes.



Example

Initially, you ate popcorn because it was tasty and your family was eating it. Eating popcorn became associated with the reward of connection and entertainment.

After enough repetition, the context of your family isn't needed to generate a rewarding feeling from eating popcorn. Once this habit is formed, research shows that people will still eat popcorn even if it's stale.

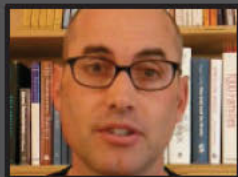
PRINCIPLE 2

Simpler behaviors more easily form habits

Simplicity is determined by the scarcest resource at that moment:

- **Effort:** Buying the same toothpaste is **less effort** than considering a superior but different brand.
- **Price:** Using Google docs is **cheaper** than using MS Office
- **Time:** Snapping a video is **faster** than uploading on YT
- **Social Deviance:** Putting on a seatbelt is **socially acceptable**
- **Routine:** Shopping at the same grocery store because it's near your home or on the way from work.

People often prefer behaviors that feel easiest to perform, based on their most limited resource. People also feel more positive toward behaviors in which they feel proficient, even if it requires more steps.



Learn more about Simplicity research (12:00)

YouTube UX Research



Example

It's fewer steps to select a movie on *Netflix* from the comfort of your couch than driving to *Blockbuster*, picking out a movie, paying, and driving home.

It is simpler to click once to purchase vs. adding to a cart and checking out.

PRINCIPLE 3

Strong rewards reinforce our behaviors

Greater rewards produce more repetition because they reassure us that our behavior was good - but you need both **reliable** and **variable** rewards to reinforce habits.

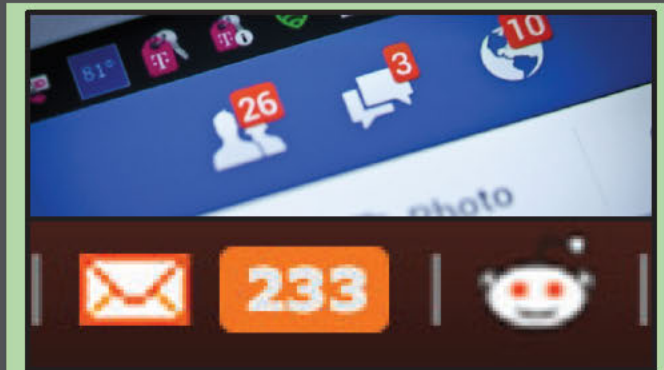
Predictable rewards like finding a video on YouTube search will steadily increase repetition (low risk = low reward)

Unpredictable rewards are disproportionately delightful compared to predictable rewards because they're unexpected or exceed expectations (e.g., finding a new favorite song while in a mix).



Learn more about the
Science of Rewards (5:00)

YouTube UX Research



Example

Internet points are a powerful form of predictable reward. Facebook likes or Reddit karma are a clear form of social recognition.

[Learn about the 6 types of rewards](#)

Slide 1

- 1 When thinking about habit building around YouTube, it is important that we reliably fulfill their goal pursuits (reliable reward) while also providing surprising nuggets of reward (variable reward). Ultimately you're giving people more reasons to come back until they can't even remember why they did. When is the last time you had a goal in mind when you went to Facebook?
[REDACTED] 1/8/2016 4:41:03 PM
- 2 We (YouTube) tend to excel at the surprise and not as much at the reliable, with exceptions.
[REDACTED] 1/8/2016 4:41:03 PM

PRINCIPLE 4

Habits are cued by contextual triggers

When a **rewarding behavior** is frequently accompanied by a particular trigger, the trigger and behavior become chronically associated.

Habits are fragile and will break if the:

- Triggers change (I can't watch videos at lunch anymore)
- Behavior sequence is inconsistent (steps to finding a funny video are always different)
- Experience is not rewarding (the notification was a bad video)

External Triggers:

- "I check out the movies in RedBox once I'm done shopping"
- "When I walk into the kitchen, I check the fridge"

Internal Triggers:

- When I'm bored, I open Reddit
- When I don't know, I ask Google



Example

Febreze was marketed as a way to **finish** the cleaning routine. It piggybacked the existing habit of tidying up your home and served as a reward for finishing.

1. See a messy house (trigger)
2. Tidy up (behavior)
3. See a clear house, spray Febreze (behavior)
1. Associate clean house with Febreze (reward)

Slide 1

- 3 Habitual behaviors are also driven by stimuli. Basically there are context-and stimulus-based learning, and they are actually separate, yet sometimes interacting processes. Behaviors that are context based are more flexible ("fragile"), but those that are stimulus-based are pretty rigid. So while contexts often reinforce associations, a stimulus-based habit is the most "strong".
[REDACTED]; 1/8/2016 4:42:15 PM
- 1 This is interesting. Would a notification from your phone be an example of stimulus based trigger (assuming you keep your phone with you in almost every context)?
[REDACTED] 1/4/2016 5:28:52 PM
- 4 Yes responding to a notification is a great example of a stimulus-driven response
[REDACTED] 1/4/2016 5:35:23 PM
- 1 [REDACTED] hey [REDACTED], could you point out the references to the difference in context- and stimulus-based learning? I would love to learn more on this, seems very interesting!
[REDACTED] 1/6/2016 6:00:38 PM

PRINCIPLE 5

Repetition reinforces behavior

When a rewarding action is performed, an association is created between the situation and action. Repetition reinforces and establishes this association, making alternative actions less accessible in that situation.

To form a habit, a behaviour must repeatedly occur as a response to the same stimulus or in the presence of the same context.

Once a link is formed through repetition, you can create “context chains” that habitually link one behavior to another.

Facebook:

Reply to a comment → Check your feed → Post a comment → etc

Steam:

Open app → Check 12 hour Flash Sales → Chat with friends → etc

YouTube:

Receive notification → Check video → Check other videos → etc



Example

Clash of Clans, *World of Warcraft*, and other successful games use “Daily Rewards” as a way to train users to open the app every day. Rewards become progressively larger the longer the “habit chain” lasts.

Slide 1

- 5 An association is made IF it's rewarding. It must have some hedonic value to reinforce the behavior in the future.
[REDACTED]; 1/4/2016 6:54:22 PM
- 6 It's not accurate to same it must be carried out in the presence of the same contextual cues. Habit learning actually stimulus-driven, but contextual cues can become associated.
[REDACTED] 12/30/2015 7:46:36 PM
- 7 A habit is most strong, most rigid if it does NOT depend on context and can be triggered by a stimulus anywhere
[REDACTED] 12/30/2015 7:47:39 PM
- 1 I still think this slide might be missing the stimulus-based habit-building info.

I didn't find enough research about this to put anything here. thoughts?
[REDACTED] 1/4/2016 5:35:28 PM
- 8 ultimately what you are describing is reinforcement learning (ala Pavolv). A behavior becomes habitual when the stimulus itself can produce the reward response (which is a dopamine response that results in behavioral response), regardless of how rewarding the actual outcome is. This process can also be influenced by context.
[REDACTED] 1/4/2016 6:54:22 PM
- 9 So I would keep it simple. 2 slides: Habits are cued by rewarding stimuli. Habits are reinforced by context.
[REDACTED]; 1/4/2016 5:42:50 PM

Slide 1 (continue)

10

in the case of [REDACTED] notification example, the notification itself has become associated with reward, and it is strong enough to reliably elicit behavior (i.e. checking the app). If it's a habit you'll do it nearly every time even if there isn't anything that great on the app.

[REDACTED] 1/4/2016 5:44:39 PM

4 Concluding Guidelines for Habit Building

1. Create a compelling goal

Amazon: I need to buy a new bookshelf for my new apt

2. Simplify the actions needed to achieve the goal

- 1-click purchase vs. checking out
- Sorting by relevant options (price, color, etc)

3. Offer both variable and reliable rewards

Reliable reward: I easily found the item I needed

Variable reward: There are items I didn't think of that other people bought when making this purchase.

4. Provide triggers to repeatedly link behavior and goal

Internal Trigger: "I need to buy something else... Amazon is a good place to buy stuff from"

External Trigger: Email notification about your purchase or similar items.

Slide 1

2 are there more examples of rewards you can give that are more consumption-focused (as opposed to creation / publishing)?

██████████; 1/5/2016 8:18:54 PM

11 ██████████, your casino example is the best example of risk/reward learning. It's important to both provide for low risk (e.g. predictable)/low reward and high risk (unpredictable)/high reward, to keep people coming back.

To clarify that for the other examples, you should give examples of how each plays it safe (e.g. pretty nature pics I take usually get me a handful of likes...it's reliable) and where each takes a risk (e.g. "I'm gonna post this crazy pic of a dead whale...I wonder how poeple will respond?). Now that's from the creator/publishing standpoint, as ██████████ pointed out. Ultimately this deck seems to be intended to address the user/viewer/consumer behaviors, so I would provide examples to that. For example, "I'm gonna watch House again because it's entertaining enough for right now" vs "I feel like browsing around for something exciting and new". FYI, I'll putting an entire deck together around this with ██████████

██████████ 1/5/2016 8:18:54 PM

Opportunities for YouTube

To build a habit...

Recognize people's goals and fulfill them with YT

1 Integrate into existing goals:

- *Setting your alarm (Play a video when you wake up)*
- *Eating lunch (Here's 30 mins of funny videos)*
- *Getting ready for bed (Catch up on latenight)*
- *Waking up (morning music, daily news digest)*
- *Commute (40 minutes of music)*
- *Study music (endless music)*

What goals can we create?

- *Related topics: "People who had question X also had question Y - here's some videos on question Y"*
- *Related answers: "You looked up a video on stocks, here is a video on today's financial analysis"*

1 Where we succeed

- *Searching for a video or topic*
- *Getting caught up on your subscriptions*
- *Piggybacking on another goal: YouTube appears in Google search results.*
- *Notifications: Tap bell or having a reactr video hearted.*

Slide 1

12 We should insert ourselves into people's routines. Understand what goals people have and then we should become the place where they can have it fulfilled. Then, it's best if we aren't a one trick pony and can provide surprising rewards from time to time, which we are great at at YouTube.

Recognize people's goals and give them an easy way to fulfill, and then provide cues/reminders that we can easily fulfilling their goals (e.g. advertisements, notifications)

[REDACTED]; 1/8/2016 5:00:31 PM

1 [REDACTED] Nice list. In YTNeeds you can get more information on these, like getting ready for bed [REDACTED]. Very few users do it on YT every week and we could work more on that to perform better than our competitors. Other examples include the need to feel inspired to get ready for the day or the need to be updated on news (both usually triggered mostly in the mornings: [REDACTED]). A lot of room for improvement given the low frequency.

[REDACTED] 1/21/2016 12:01:50 AM

2 [REDACTED] +Snackpacks!

[REDACTED] 1/13/2016 1:36:20 AM

1 [REDACTED] the snackpack concept of having sets of content that update weekly or daily (maybe even at a specific time) is one way to tackle this. early brainstorm here: go/snackpacks

[REDACTED] 1/15/2016 1:47:27 AM

Slide 1 (continue)

1 I'd love to collaborate if there's any movement with the go/snackpacks idea. We're quite interested in experimenting with this concept for Living Room

[REDACTED] 1/21/2016 12:01:50 AM

1 Getting caught up on subscriptions is a habit for some users but not all. Big opportunity here

[REDACTED]
Shimrit Ben-Yair, 2/5/2016 6:51:09 PM

Simplify the actions needed to achieve the goal

Where we succeed

- *1 click to search*
- *Finding related videos*
- *High set-up users can easily browse relevant videos (subscriptions)*

1 Opportunities

- *No clear way to make the Homepage useful by taking explicit actions. (i.e., users have to watch a bunch of videos and hopefully the Homepage will learn)*
- *Heavy set-up required to find and subscribe to relevant channels*

Slide 1

2 cc [REDACTED] On mobile, instead of displaying three-dot menu next to a shelf, we could show an X to dismiss like desktop does

[REDACTED] 1/26/2016 9:49:59 PM

3 [REDACTED] Yeah! I think [REDACTED] might have an open FR for this already

[REDACTED] 1/15/2016 4:51:19 PM

2 we could also make some of the existing actions users take to tell us what they like/dislike more explicit

e.g. if a user abandons/skips-over a video ask them "Want to see less of ___ in the future? Yes/No."

[REDACTED] 1/21/2016 12:04:52 AM

1 yes, bug here: [REDACTED]

Offer reliable and variable rewards

Where we succeed

Social rewards

- *Receiving a reply to your comment*
- *A friend hearting your video*
- *Getting lots of videos/comments/subs*

Recognition reward:

- *Recognize live stream donors with a shout-out and a noticeable green bar*
- *Analytics (# views, likes, etc)*

Monetary reward:

- *Ad revenue*
- *Donations from viewers*

Opportunities

Emotional reward:

- *Make browsing reliably rewarding (you can scroll down Reddit/FB and find posts that are funny/informative/etc, you have to find a funny video and watch it before you get the reward)*

Recognition:

- *Recognize users' effort when they're done browsing a feed or completing an action (hitting the bottom of a feed, uploading a video, making a playlist)*
- *Recognize power users ("I have 100 subscriptions")*

Social rewards:

- *Provide viewers a form of social currency (hearts is a good start) for participating on the site*

Vested Interest:

- *Reward users with feedback when they do work like tap "Not interested" on the Homepage or Hide watched videos on their subscriptions*

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