

AMENDED Exhibit 110

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



Foundational Well-being

**"Problematic use" research share: definitions,
people problems, foundational overview**

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Concepts within the problematic use research space

- Lack of control + negative life impact
- Difficulty with control over use
- Use in inappropriate/harmful contexts
- Negative feelings/guilt about use
- Desire for better time management
- Habitual use that does not align with intentions
- Distraction; less mindful attention
- Time wasted; spending more time than wanted

What people problem(s) should we focus on for product strategy?
What are the next research questions to address?

We have defined “problematic use” as the combination of lack of control + negative life impact from FB use

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This was informed by the academic literature, but is not an official definition - it could be argued to be both too lenient and too narrow

- There is not enough clinical or neuroscientific evidence to classify a true Facebook “addiction” - but people are still experiencing problems.
- Scales to assess problematic use have been described in the academic literature, but there is no agreed-upon definition or cut-off score.
- We have oriented around the (less clinical) construct of “problematic use,” referring to Facebook use that is causing problems in people’s lives and that they find difficult to control or change.
- Our problematic use survey measured lack of control, FOMO, and negative impact in work/school, relationships, sleep, or life in general.
- Participants from qualitative research have described symptoms consistent with academic scales, but some common Facebook complaints are not captured.
- 55% of people feel they “spend too much time on social media” and people often endorse losing track of time, feeling guilty, using FB in inappropriate contexts, etc.

Survey questions to identify problematic use

Survey items measuring problematic use

Negative life impact

How often do you get less sleep than you want because you're using Facebook?

Never / Rarely / Sometimes / Very often / Always

Overall, how much does your use of Facebook hurt your relationships with others?

Very slightly or not at all / A little / Moderately / Very much

To what extent does Facebook help or hurt your work or school performance?

Helps greatly / Helps somewhat / Neither helps nor hurts / Hurts somewhat / Hurts greatly

Overall, do you feel like Facebook has had a positive or negative impact in your life?

Very negative impact / Somewhat negative impact / Neither positive nor negative impact / Somewhat positive impact / Very positive impact

Control or preoccupation

How much control do you feel you have over the amount of time you spend on Facebook?

Very little or no control / A little control / Some control / A lot of control / Complete control

How concerned are you about missing important posts on Facebook if you don't log in frequently enough?

Not at all concerned / A little concerned / Somewhat concerned / Very concerned / Extremely concerned

Table 1: The problematic Facebook use survey included questions on negative life impact and control.

In a US survey of 20,000 FB users, 3.1% endorsed problematic use

They are more likely to be younger and male, and experiencing a recent major life event like a move or break up. They spend more time overall, have more sessions, spend more time late at night, receive and respond to more notifications, and deactivate their accounts more frequently.

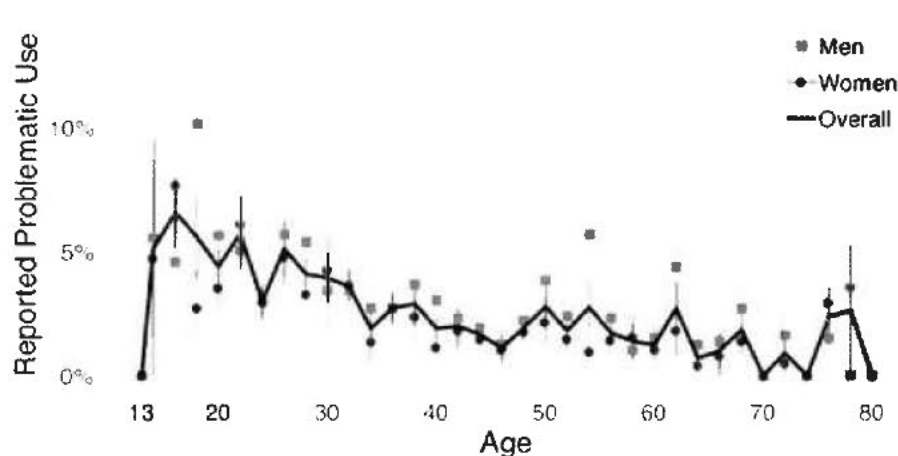
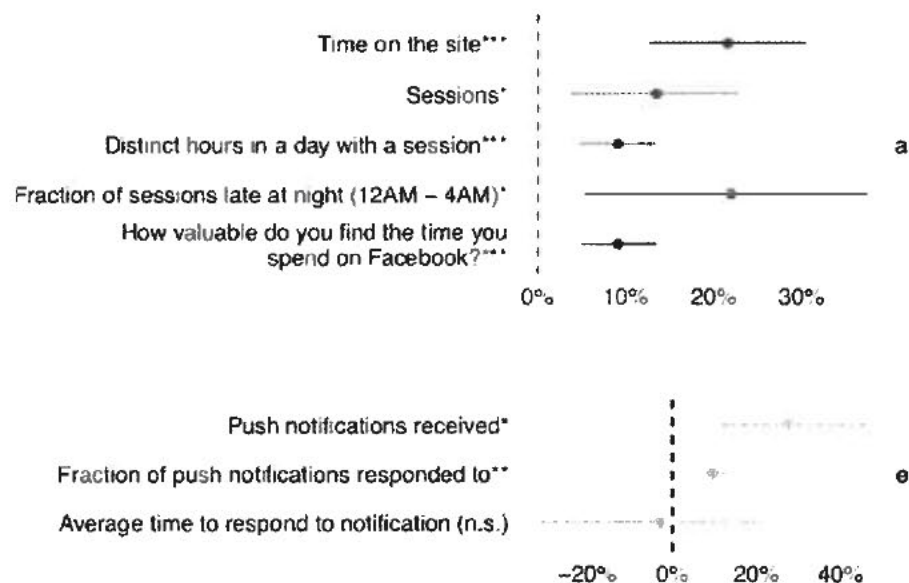
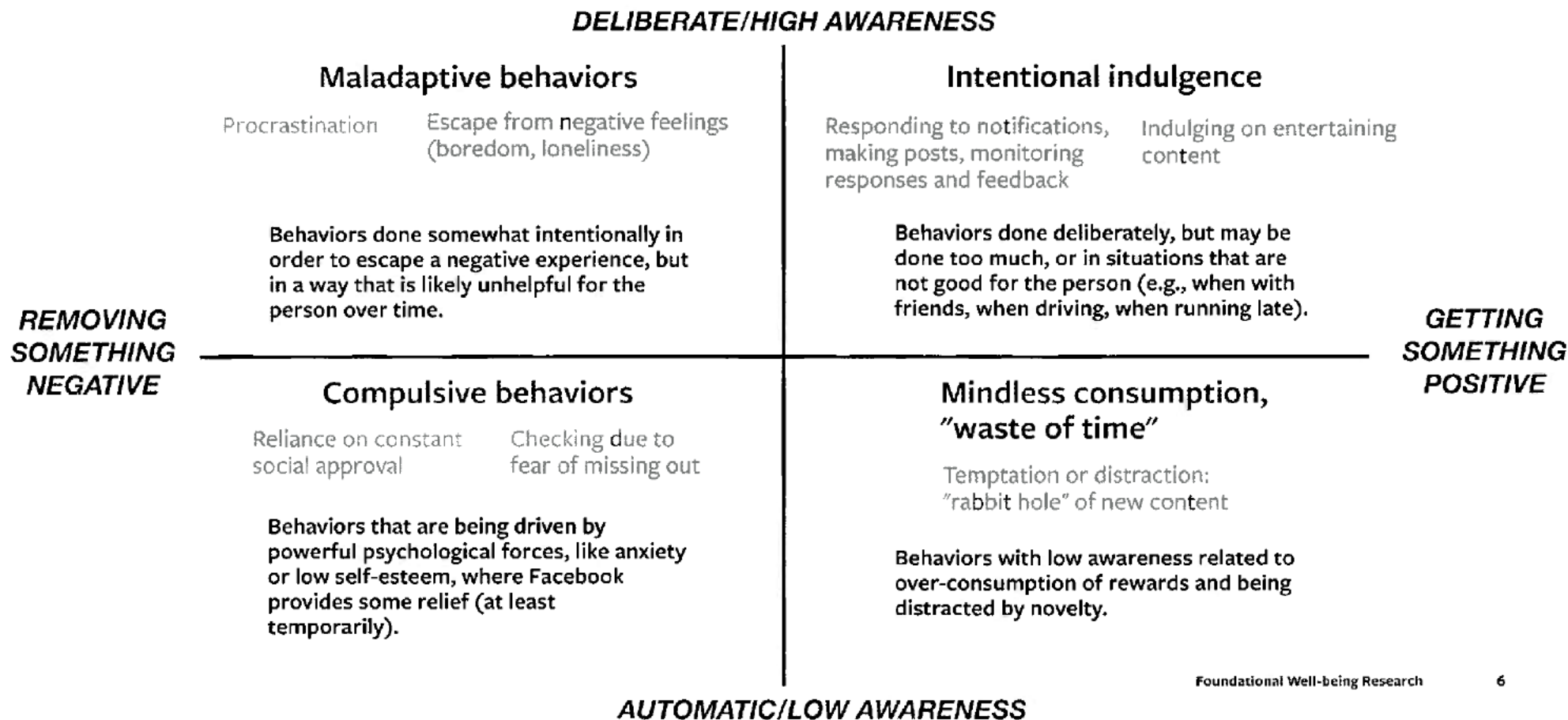


Figure 1: The prevalence of reported problematic use is highest among teens and young adults. Men are also more likely than women to report experiencing problematic use.



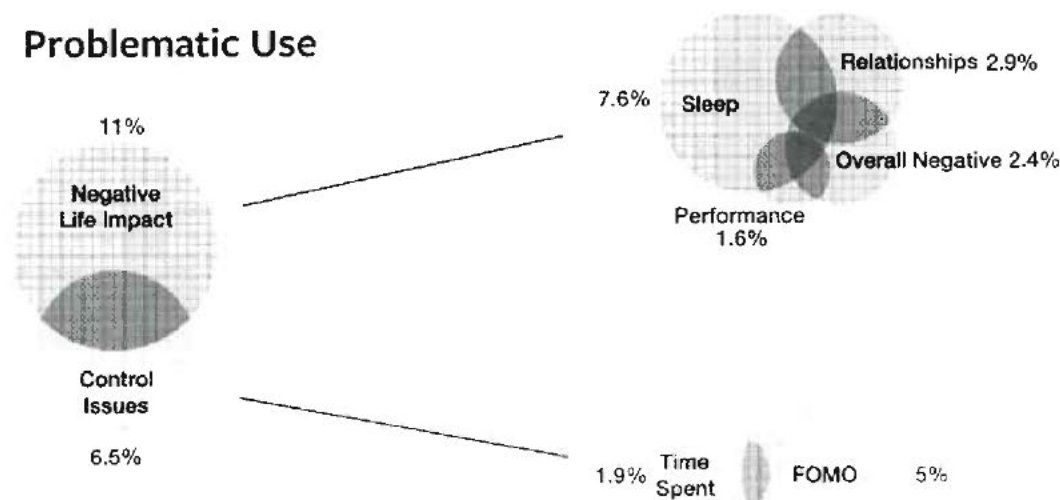
A proposed taxonomy of types of problematic use is informed by concepts related to addiction: reward learning and habitual behavior



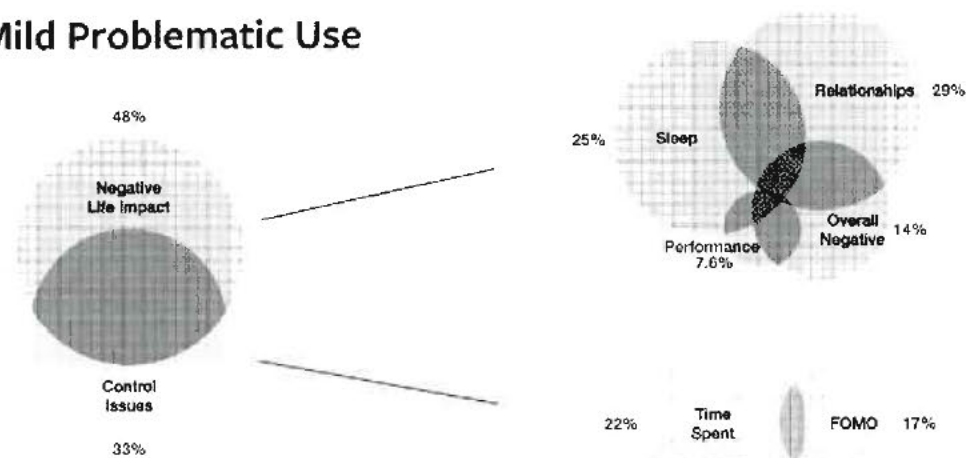
Discussion: how/whether to broaden the definition to include more people/mild negative experiences

- Change the problematic use criteria to be endorsing a single item - either focusing on lack of control or on negative life impact.
- Use more mild endorsement of the different criteria.
- Explore nuance within constructs like "spending too much time" on Facebook.
- Ask about negative feelings from use.
- Probe other related constructs - e.g., desire to reduce FB use but feel unable to; "unintentional use."

Problematic Use



Mild Problematic Use



References

Cheng, Burke, & Davis (2019): Understanding Perceptions of Problematic Facebook Use: When People Experience Negative Life Impact and a Lack of Control

[https://www.dropbox.com/s/qcteosvm3qw57hp/](https://www.dropbox.com/s/qcteosvm3qw57hp/Understanding%20Perceptions%20of%20Problematic%20Use%20%28CHI%202019%29.pdf?dl=0)

[Understanding%20Perceptions%20of%20Problematic%20Use%20%28CHI%202019%29.pdf?dl=0](https://www.dropbox.com/s/qcteosvm3qw57hp/Understanding%20Perceptions%20of%20Problematic%20Use%20%28CHI%202019%29.pdf?dl=0)

Workplace note: <https://fb.workplace.com/notes/justin-cheng/problematic-facebook-use-when-people-feel-like-facebook-negatively-affects-their/299978474089479/>

Davis (2018a): Facebook "Addiction": A response to the public narrative based on clinical and neuroscience research

https://www.dropbox.com/s/hspo6y9yddxzc14/FBaddiction_Davis_062818.key?dl=0

Workplace deck (abbreviated): <https://our.internmc.facebook.com/intern/research/p/iaqi9a9mqi/>

Davis (2018b): Semi-Structured Interviews about Time Spent

<https://fb.quip.com/vpvaAV50a0fi>

Davis (2018c): Problematic use qualitative interviews (Birmingham, UK) - unpublished

██████ (2019): Well-being drivers: A model for identifying Facebook's opportunity areas and measuring success.

<https://our.internmc.facebook.com/intern/research/p/2tztlbbye7/>

More detail

- Comparison of problematic use and addiction
- Academic scales and internal scales
- User quotes
- Addiction framework: reward processing and habit
- Example taxonomy of people problems in more detail

Problematic use vs. Facebook "addiction"

There is growing concern in the public that technology companies are deliberately manipulating users by designing **addictive** products that can harm well-being and subvert self-control.

Key questions:

1. Is Facebook "addictive"?
2. How do we understand and help people who feel this way?

There is not enough evidence for a true Facebook “addiction” - but people are still experiencing problems

Internet / Facebook use are not currently classified as addictive behaviors in any clinical manual.

- Gambling and gaming are the only defined behavioral addictions, though even this is controversial: can behaviors be “addictive” in the same way as drugs?
- Behaviors on Facebook are varied, so it is unclear what is actually addictive - chatting? gaming? getting likes? learning information?

Certain rewarding Facebook behaviors (e.g., receiving social approval, sharing about yourself) **do activate the brain’s dopamine system**, but in fundamentally different ways than addictive drugs.

Academics are debating about **whether problematic Facebook use would be an “addiction” or something else** - for example, a compulsive or impulsive type behavior. Regardless, it is clear that **clinicians are seeing people reporting problems** with Facebook use.

Because there is no agreed-upon clinical phenomenon, definitions are varied

Based on clinical criteria, the most severe individuals would likely experience:



Multiple symptoms

+

Examples:

Preoccupying thoughts: thoughts about Facebook use are excessive, absorbing, and irresistible

Overwhelming behavior: drive to use Facebook is extremely strong, despite desire and/or attempts to stop

"Tolerance": more and more use is needed to achieve desired feelings



Persistence over time

+

Use **continues** despite significant negative life impacts

Problematic symptoms are not limited to unique or temporary circumstances



Negative life impact

Facebook use has caused **significant negative impacts on important areas of life functioning**, e.g., loss of job or relationships

Other important interests are neglected in favor of Facebook use

Scales to assess problematic use have been described in the academic literature

Survey question	Addiction domain	Type of problem
How often during the last year have you spent a lot of time thinking about Facebook or planned use of Facebook?	Salience	Lack of control over thoughts
How often during the last year have you felt an urge to use Facebook more and more?	Tolerance	Lack of control over increasing use
How often during the last year have you used Facebook in order to forget about personal problems ?	Mood modification	Maladaptive use (use to avoid real-life problems)
How often during the last year have you tried to cut down on the use of Facebook without success ?	Relapse	Lack of control over stopping use
How often during the last year have you become restless or troubled if you have been prohibited from using Facebook?	Withdrawal	Compulsive use (use to avoid negative feelings)
How often during the last year have you used Facebook so much that it has had a negative impact on your job/studies?	Conflict	Real-life negative impact

¹Bergen Facebook Addiction Scale: Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110, 501-517.

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Common Facebook-related complaints or issues would not rise to the level of problematic use

Excessive use

Using Facebook a lot does not constitute a problem in of itself - this needs to be considered along with other symptoms, the context of use, and what **negative impacts** have occurred.

Using more than you want to, or feeling guilty about use

This is a personal judgment call and not a sign of a disorder, unless the negative feelings are causing significant distress and use cannot be controlled.

Feeling a lack of control

Unless this feeling is associated with increasing use, having failed attempts to stop use, or negative life impacts.

For our research purposes, we have defined problematic use as lack of control + negative life impact

Survey question	Type of problem
How concerned are you about missing important posts on Facebook if you don't log in frequently enough?	Lack of control over thoughts
How much control do you feel you have over the amount of time you spend on Facebook?	Lack of control over [increasing] use
N/A	Maladaptive use (use to avoid real-life problems)
N/A	Lack of control over stopping use
N/A	Compulsive use (use to avoid negative feelings)
Overall, do you feel like Facebook has had a positive or negative impact in your life ?	Real-life negative impact

From problematic use survey (Cheng, Burke, & Davis, 2019)

Examples of mild negative impact - feelings and behaviors

Negative Impact: Feelings

- “Time wasted”
- “Feel shallow”
- “Distracted”
- “Guilt”
- “Regret”
- “Stupid”
- “Fatigue”
- “Disgust”

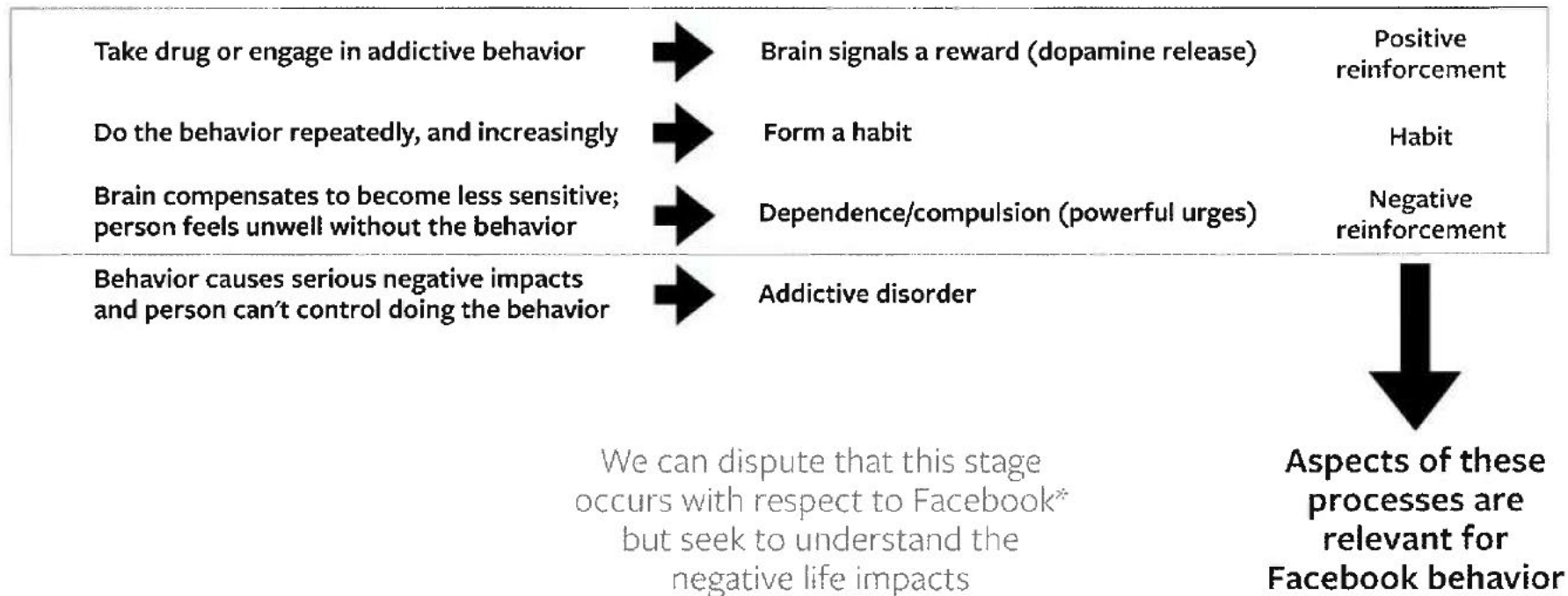
Negative Impact: Behaviors

- Less productive
- Almost late
- Distracted while driving
- Could have been doing other more important or enjoyable things
- Not fully engaged with other things

From Semi-Structured Interviews About Time Spent

We can use the “addiction” framework as a useful orienting point to understand common Facebook problems

Addictive process



*To be classified as an addictive disorder, the negative life impacts must be seriously life-impairing and **directly attributable** to the behavior itself and not other reasons, and the control over one's behavior must be severely limited - related to brain changes. There is no evidence to date that this occurs for Facebook use.

The concepts of reward / reinforcement and habit help to categorize problematic Facebook behaviors

Aspect of addictive process

How to identify

Positive reinforcement

Behavior is strengthened because it results in getting something positive

Is the behavior motivated by receiving something positive, like a reward?

Habit

Habits are automatic and require effortful control to change. Any repeated, reinforced behavior can become a habit.

Is the behavior done automatically and with low awareness? Or is there deliberate choice, but the behavior is repeated so much that it can become a habit?

Negative reinforcement

Behavior is strengthened because it results in the removal of something negative

Is the behavior motivated by the removal of something negative, like escaping from a negative emotion or checking Facebook to avoid "missing out"?

Required: Are these behaviors having *significant negative life impacts*?

The concepts of reward / reinforcement and habit help to categorize problematic Facebook behaviors

Aspect of addictive process

How it may manifest on Facebook

Positive reinforcement

Behavior is strengthened because it results in getting something positive

Facebook's rewards are **easily accessible, available all the time, limitless, and unpredictable**, so it is easy to consume too much

Habit

Habits are **automatic** and require **effortful control** to change. Any repeated, reinforced behavior can become a habit.

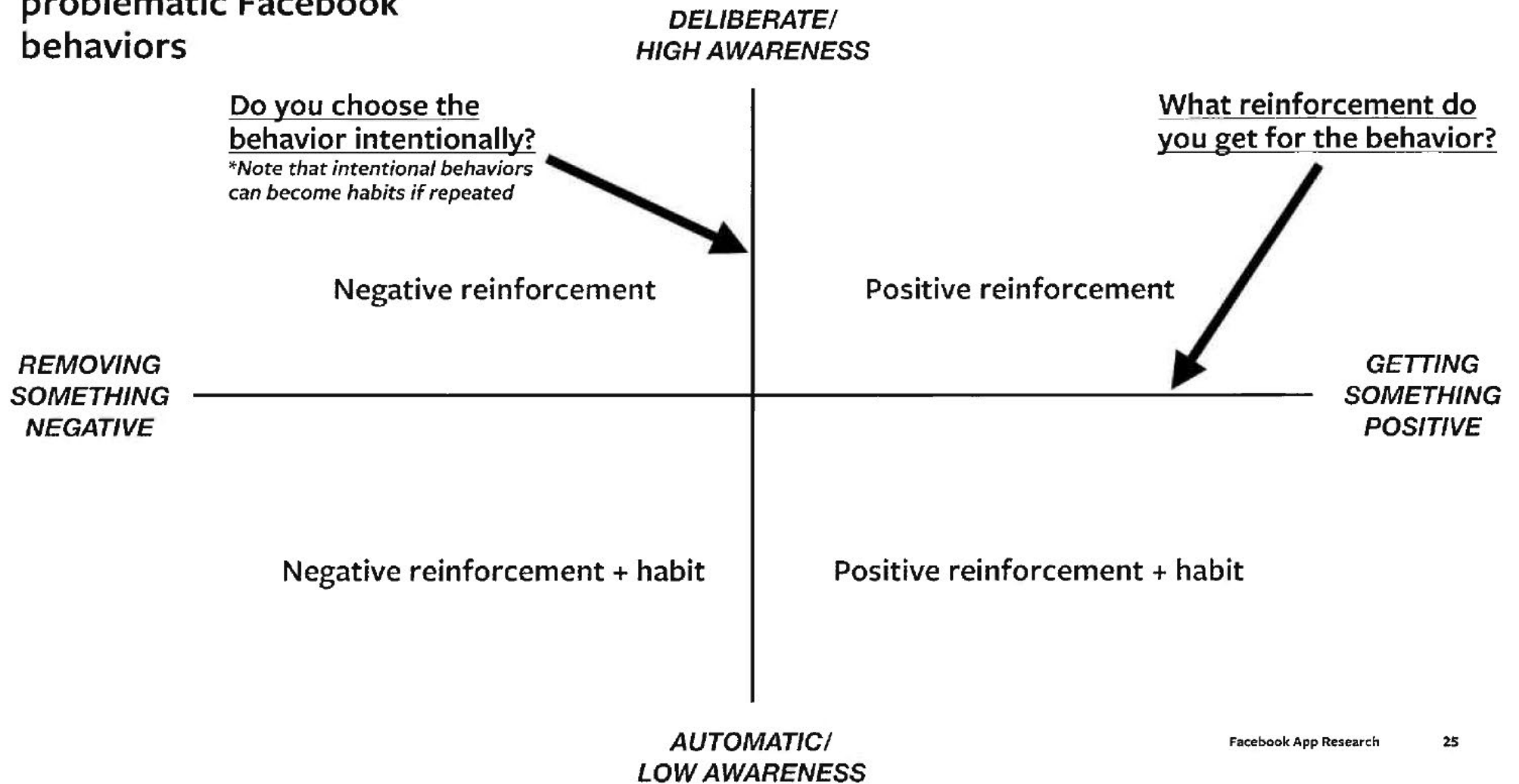
Facebook cues can trigger automatic, learned behavioral responses that can **feel unintentional or out of the users' control**

Negative reinforcement

Behavior is strengthened because it results in the removal of something negative

Facebook may provide an escape or distraction from real-life negative experiences, so that **negative emotions could trigger Facebook use**

Framework of potentially problematic Facebook behaviors



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Framework of potentially problematic Facebook behaviors

