

Notes on Alter's (2017) *Irresistible*, Chaps. 4-9

Principles for Engineering Behavioral Addictions (BAs) in Digital Devices and Apps: What Designers Can Do To Make Digital Technology "Irresistible"

1. Set goals that can *create a sense of "flow"* so that users of the app or device expend greater effort and motivation.
2. *Provide constant feedback* that makes the users want more of the stimuli (lights, sounds, "likes" are all examples of feedback people enjoy).
3. *Make sure that users can progress in the game or app* (rather than losing) so that they remain engaged in what they are playing or doing.
4. By balancing the difficulty level with the chance of the user to succeed, apps and games are engineered *to allow achievement* (a personal sense of "mastery") while the app or game *steadily raises the stakes* to keep the user actively engaged.
5. *Use "cliffhangers"* -- that is, unexpected reward or some turn of events that the user wasn't expecting.
6. *Make the app or device or site social*: people generally crave interaction with others and by sharing in a level of interaction (in a game, among posters to a social media site, etc.) users are rewarded.

Chapter 4: "Goals"

- Goals serve to motivate people although once reached people look for new goals
- Some goals in the digital world are anti-productive, e.g., making sure that all of your emails are read and responded to.
- One can approach goal-setting either by focusing upon long-term goals or paying attention to daily tasks that lead to those long-term goals.
- Sometimes in the digital world we lose track of what our real goals are and continue to use the digital devices even though they are keeping us from what we want.

Chapter 5: "Feedback"

- We are attracted to rewards from childhood onward. For example, not only do little kids press buttons on an elevator, but adults do too even when they don't actually do anything.
- We look for results from what we do (that is, "feedback"). On Facebook, we can't know if anyone will give us a "like" for a posting, but when we do get such feedback, we are rewarded in a way similar to winning at gambling.
- In real casinos on slot machines, there are algorithms that allow the machine to sense when the player is getting less likely to play. The machine will then give the player a "win" to encourage them to gamble more. In various online games, players will get a similar kind of unexpected "win" in order to keep playing.
- One of the most perilous psychological factors in any kind of gambling or otherwise spending time/money, etc. is the notion of "almost winning." In a slot machine, it is more likely that a player will receive a series of responses that are only one response away from winning (e.g., four hearts and a single diamond). Rather than thinking that they have lost, the player thinks, "Well, I almost won" and continues to play.

Chapter 6: "Progress"

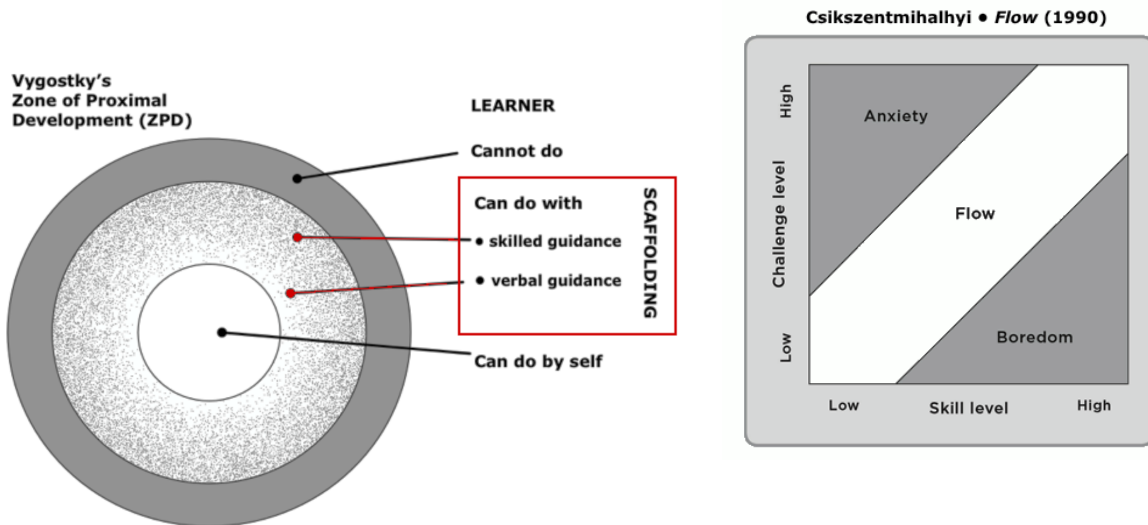
- Games online are often designed to hook the players by creating situations in which the player can advance if they are willing to spend just a bit more money or credits or whatever currency the game requires.
- Often games are tested to be sure that they are easy enough for almost anyone to engage in using them. With the onset of mobile devices such as smart phones, designers make sure that their game or app well fits on the screen of the device.

Ch. 7 “Escalation”

- Experiments show students are willing to receive electrical shocks rather than be bored
- Sense of hardship/difficulty is compelling in both gaming and behavioral addictions (BAs)
- TETRIS: offers a sense of mastery
- BAs: often come wrapped in a cloak of creation by media user

Lev Vygotsky & the ZPD (“Zone of Proximal Development”)

Mihalyi Csikszentmihalyi: *Flow* (1990)



- “Ludic loop” = a behavior you keep performing because each time you do so you get a small reward (“ludus” in Latin means “play”)
- The power of “near wins” which suggest that you are close to victory (even if you aren’t)
- Paco Underhill’s research in 1990s about “Stopping Rules” – that often unconscious prompt which gets you to end doing something.
 - In many BA apps, there are no stopping rules. We continue to want to perform a behavior even in the absence of any clear reward.
 - Credit cards as examples of so little feedback (e.g., you don’t know the balance of what you owe) that individuals keep using them even when they are in deep debt. In late 2025, the average credit card balance in the US (what is still owed and is charged around 22% annual interest) amounted to \$7,886 (thus, card holders pay roughly \$1,785 every year just interest).

Ch. 8 “Cliffhangers”

Bluma Zeigarnik (1900-1998) : **The Zeigarnik Effect** = incomplete experiences (things we do not end) or objects tend to occupy our minds and attention far more than those which are completed.

Examples

- NPR 2014 October 12 part podcast: “Serial” keeps listeners guessing
- HBO 2015 serial documentaries: *The Jinx* (on murderer Robert Durst) and *Making a Murderer* (Steven Avery)
- “Made in America,” the series finale of *The Sopranos* (Season 6, Episode 21), aired on June 10, 2007. It is infamous for its ambiguous ending, where Tony Soprano (James Gandolfini) sits in a diner with his family



before the screen abruptly cuts to black during a tense scene.

Unpredictable rewards (= cliffhangers) are powerfully motivating. **Research with dopamine argues that it is the unpredictability that is most likely to evoke the release of dopamine.**

Compulsive Shopping online and flash sales, e.g., GILT website (chimes announcing new sale)

- Binge TV episode viewing on Netflix: 2012 (August) with “Post Play” in which viewer has to positively decide NOT to watch the next episode which loads automatically
 - 2013: 61% American adults engaged in 2-6 episode/sitting TV bingeing.
- “Opt out” strategies are less likely to be used rather than “opt in” – e.g., organ donation

Ch. 9 “Social Interaction”

Hipstermatic (2010) vs. Instagram (2011): **Why did Instagram Win?**

- Instagram is free to download rather than pay
- Instagram: Posting to a dedicated social network of other viewers which generates likes, etc.

Personal self worth is key issue for human beings and receiving social feedback is wired into us

- We are very sensitive to negative feedback from others. It stings.
- Pressure to present ourselves as “perfect” and receive social approval

Early app, Hot or Not (2000): Precursor to Tinder & other online dating apps where ratings are given to photos of others

Group membership is an evolutionarily conserved force in human life where we depend upon the social confirmation of others.

MUDs (Multi-User Dungeons)

MMO (Massively Multiplayer Online) gaming such as World of Warcraft (WoW)

- Such games promote online “friendships” with those with whom you play

Andrew Doan (2015) *Hooked on Games: The Lure and Cost of Video Game and Internet Addiction*.

What do all successful video games share in common:

- Immersive Experience
- Gamer feels sense of achievement: meets obstacles, advances to new levels, etc.
- Social connection with other gamers.

Claims

- OL (online) friendships are different than friendships IRL
- The capacity for friendship develops over time during childhood and shapes the brain in so doing
- When deprived of the chance of FTF (face-to-face) interactions during the critical period of development, children develop “emotional amblyopia” – i.e., major difficulty in functioning as a friend IRL compared to OL.