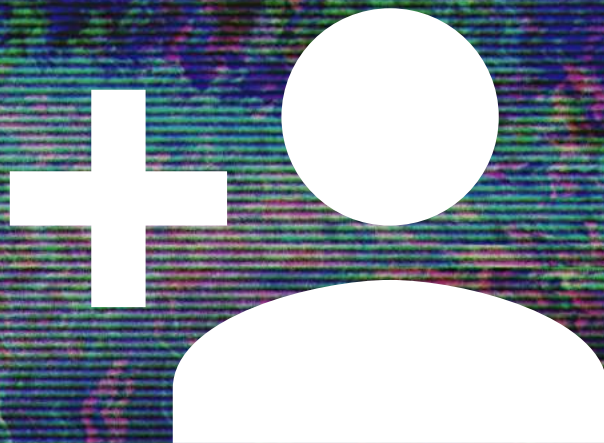# LOGGED IN

Connected but lonely

Most teens and young adults have a smartphone and use social media regularly. Could this be contributing to why Millenials and Gen Zs are called the 'loneliest generation'?

CREATED BY
ALISON LY
BAMIDELE ALESHE
DENNIS VU

UCLA INSTITUTE OF SOCIETY & GENETICS
CLASS OF 2020

Social Networking Sites (SNS)

are defined as internet services allowing individuals to

1. Create a (semi-) public profile in a closed system, with which they

2. Construct a list of other users they connect with, and

3. Explore their connections and others' connections in the system
(Boyd & Ellison, 2007)

Until I was 12, I only used the internet for games like Neopets and Maplestory. Then I started using Tumblr, and I think this definitely helped skew my expectations of what a good life is. Until 2 years ago, I genuinely didn't understand the dissatisfaction/loneliness I felt while using social media. I wish I read a magazine like this years ago. I think it would've helped me have much better judgment, and I could've spent more time on self-growth... Maybe it comes with brain development (which doesn't end until we're 25). So maybe this isn't super useful for whoever's actually reading, since none of us are teens anymore and we're probably wiser about social media. Nevertheless, I hope you learn some new things and enjoy!

Note: For any non-graduating HBS majors, I highly recommend taking SOC GEN M144 to learn about stress and social inequality with Dr. Michelle Rensel.

We're teenagers... Well not really... I'm 21 lol. But I still feel like a teenager a lot of the time. Either way, I use social media a lot and, according to studies, I'm sure you do too. This magazine was created for the purpose of not only being able to graduate college into a recession but also to inform you about the dangers of excessive social media and how it can cause loneliness in adolescents. Let this be a tale from some very knowledgeable 21 year olds that still feel like teenagers: 1. Don't graduate college into a pandemic-related recession, and 2. Make sure that if you plan to indulge in social media, take advantage of its benefits while being aware of its drawbacks.

It baffles me when my little cousins try to teach me how to use social media. "You need to follow people in order to get them to follow you back." "Your feed is so random." As a 22 year old who had a brick Nokia when I was their age, I refuse to listen. But it still leaves me curious on the way the younger generation is experiencing a cultural shift where they are immersed into the digital world. At the touch of a finger, they can instantaneously, effortlessly connect to their friends on gaming apps, socialize on websites like Club Penguin, or create dance videos on Tik-Tok. Surely these devices can keep a child entertained, but at what expense? Through our project, we hope to illustrate the downstream effects of excessive social media usage on adolescents. Digital Stress? Social Isolation? Loneliness? Hopefully, it'll make our readers consider whether we are truly using social media, or whether it is controlling us and influencing the way we idealize our beliefs, behaviors, and values.

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What's on your mind, Justin?

🖼 **Photo/Video**   😊 **Feeling/Activity**   •••

Justin Santana
September 30, 2019 · 👥

This is going to be the first car I get when I get my license! She's so sexy. #skrrtskrrt

👍😮❤ Justin Decker and 4 others   3 Comments

Kyle Mendoza yeah with your daddy's dirty money he stole in New York huh?
Like · Reply · Share · Just now

Justin Decker haha chill kyle. Justin can get it on his own. Embezzlement and money laundering are probably in his genes.
Like · Reply · Share · Just now

Jessica Pham both of you leave him alone. It's not his fault.
Like · Reply · Share · Just now

Justin Santana
September 23, rt · 👥
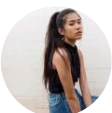
I'm a St. Mary's Knight now! Shout out to all the homies that said hi today. Miss yall already.
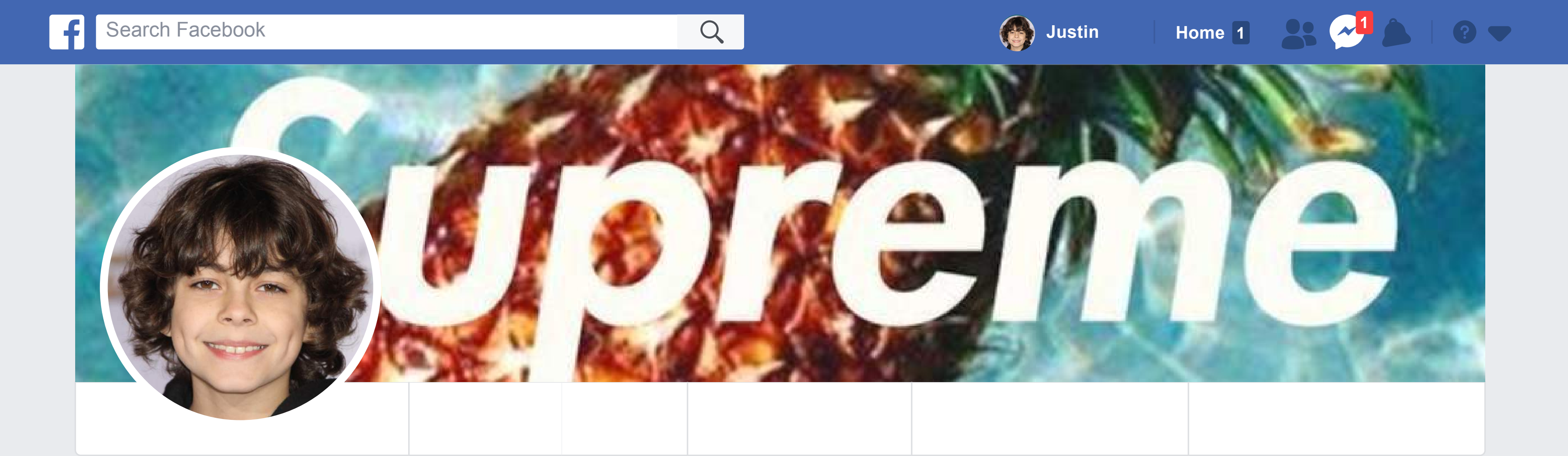
👍😮❤ Heidi Kim and 4 others   3 Comments

Heidi Kim Welcome dude! You should come to my birthday party this weekend. There will be BROWNIES!!
Like · Reply · Share · Just now

Justin Santana I'll ask my parents! Count me in for some BROWNIES!
Like · Reply · Share · Just now

Supreme

Welcome to my Page

Studies at Saint Mary's

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✏ **Create a Post** | 📷 **Photo/Video Album** | 📹 **Live Video**

What's on your mind, Justin?

🖼 Photo/Video   😊 Feeling/Activity   •••

Justin Santana
August 2, 2019 ·

+ 25

Heidi Kim, Kyle Mendoza and More

August 2 019

Became Friends with Me

Justin Santana
August 11, 2019 ·

Pasadena, California

August 2019

Updated his Hometown

Digital Overwrite

In 2007, Justin Santana was in his mother's womb when his father's legal documents of money laundering and embezzlement leaked into the local New York media Press. After charges were pressed against him, he was sentenced to twelve-years in federal state prison. Continuing public scrutiny drove the Santana family to sunny California, specifically Pasadena, where dreams of a new start were possible. As a thirteen-year-old, Justin is eager and optimistic about St. Mary's Academy, a private middle school. So far, he's been welcomed with open arms. But as his friends find out about his father's criminal background, a new beginning becomes out of reach, tainted by insults and criticism.

naya is: struggling

@ayan.txt

original (beginner) art + stickers - pls don't repost my art! she/her/hers

📍 USA

TWEETS	FOLLOWING	FOLLOWERS
298	374	21.2k

Following ⌄

Tweets   Tweets and replies

May 29, 2019

Nice lake trip away from family 😴but apparently my little sister missed so much she cried?? It's hard being the fave sibling

↩ 2   ⇄ 3   ★ 27   •••

June 1, 2019

Should I make this into an art account?
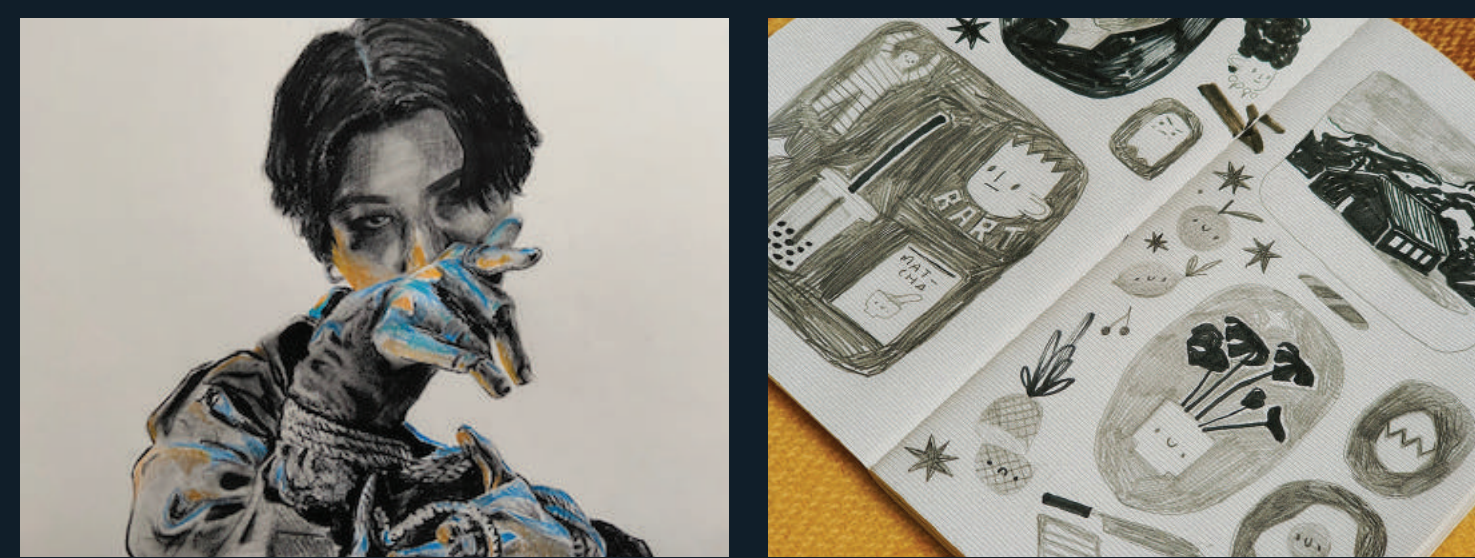
↩ 491   ⇄ 2.7k   ★ 8.2k   •••

July 5, 2019

how do you know when you're spending too much time on social media? #addicted

↩ 7   ⇄ 143   ★ 411   •••

Rose @roseminss • July 5, 2019
Replying to @ayan.txt

here's an article on social media addiction
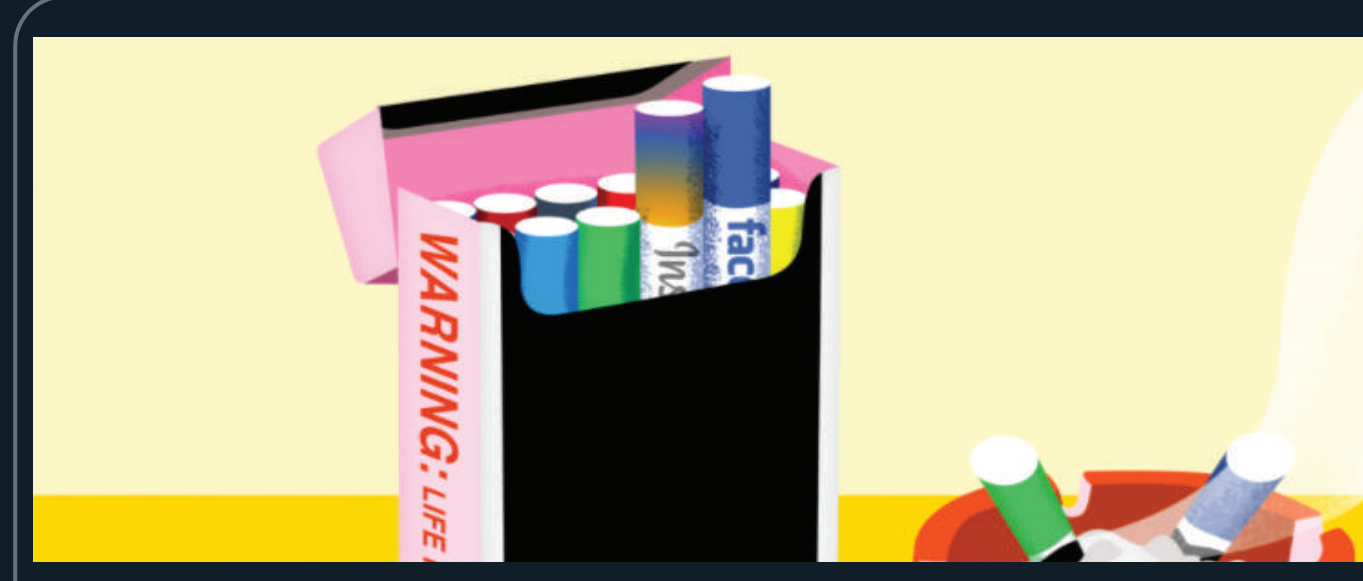
Read "HOOKED" by Bami Aleshe. Refer to Page _____

↩ 2   ⇄ 24   ★ 98   •••

July 23, 2019

no idea why so many of you followed me but thank you for 10k! the art community keeps me sane while im stuck at home

↩ 34   ⇄ 198   ★ 123   •••

August 3, 2019

vote for my art here! It's a free iPad giveaway, i've been wanting to try ProCreate for so long 😬😬
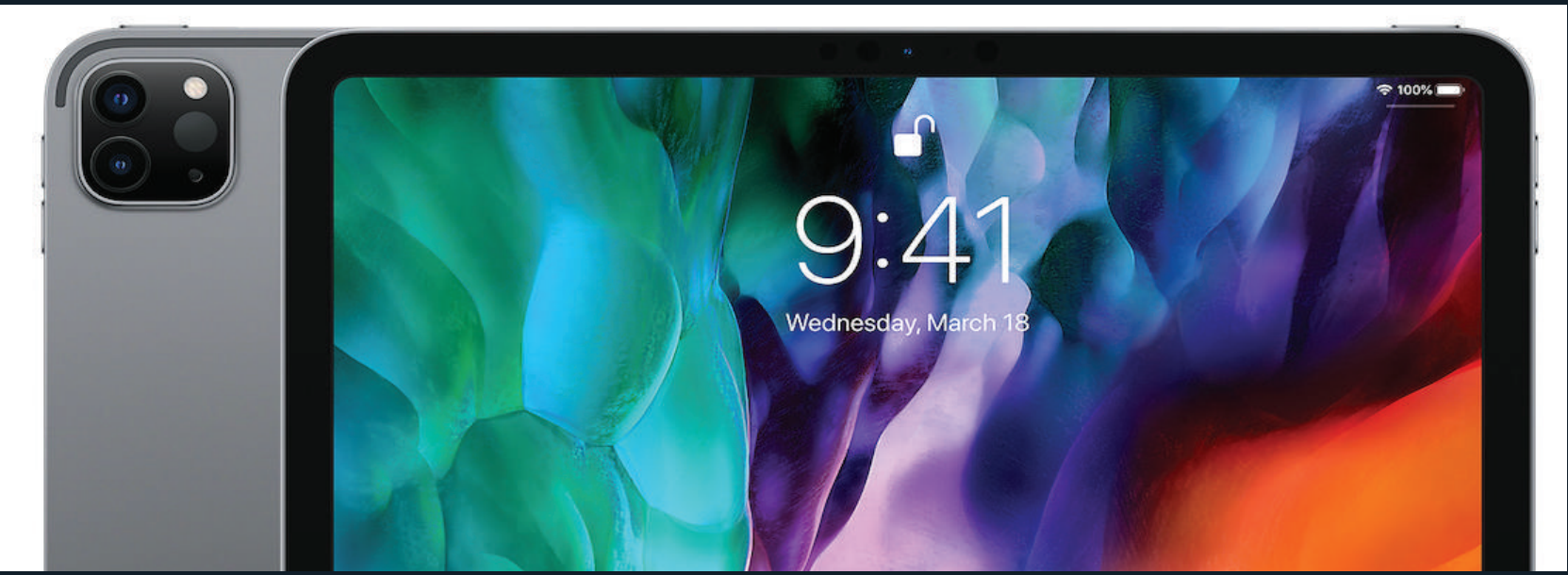
Free iPad GIVEAWAY w/ 2 year ProCreate Subscription! Art Contest voting open until August 31st! Don't miss out!

↩ 21   ⇄ 108   ★ 342   •••

August 24, 2019

ahhhh idk which schools to apply to >__<

↩ 17   ⇄ 14   ★ 87   •••

September 1, 2019

senior year started but by popular demand, so did my sticker shop 😎 free shipping on $15+!

↩ 176   ⇄ 249   ★ 1.8k   •••

September 29, 2019

taking 6 AP classes was a mistake so here's a procrastination sketch of me giving up on studying

↩ 45   ⇄ 129   ★ 532   •••

October 9, 2019

One of my favorite artist here just followed me back... I may or may not have just deleted 5 of my worst sketches so they wouldn't see them 🤭😬

↩ 3   ⇄ 23   ★ 235   •••

Starting Senior Year

Naya is a rising high school senior with a passion for art and a knack for school. She has a group of close high school friends who are trying to make the most of their senior year. At home, she is the middle of five siblings: her older brother and sister have graduated from college, and her younger siblings are only nine years old. She shows that she doesn't enjoy spending time with her family over summer break, instead preferring to spend time with her online art community. She gains a substantial following and begins an online shop, selling stickers and other products featuring her doodles.

During the summer, Naya expresses that she might be addicted to social media (read more on pg.9). In the final tweet, she shows signs of digital stress, including availability stress and approval anxiety (read more on p.26). She's already getting overloaded with Direct Messages, contributing to her availability stress--she feels obligated to reply to everybody, and even publicly apologizes for not responding. This is part of customer service in her small business--but because she's the only employee and is also a full-time student, wouldn't it be better if she took it easy? However, she seems reasonable in allocated her time, since she does mention that she's still prioritizing school.

As for approval anxiety, Naya wants to provide only the 'best' of her art when one of her favorite online artists follows her. Then she gets her first hate comment. Despite receiving multitudes of support for her art and many people defending her, this one negative comment sticks with her, due to negativity bias (read more on p.29).

---

certified hater @peppa127 • October 9, 2019
Replying to @ayan.txt

maybe delete more than just five... your art is pretty bad

↩ 25   ⇄ 0   ★ 0   •••

stream D-2 @7liners • October 9,
Replying to @peppa127

are you kidding me? She has 20K+ for a reason you clown

↩ 3   ⇄ 8   ★ 94   •••

🔍 Search

nellyrichards Edit Profile ⚙

7 posts   82 followers   87 following

Nelly Richards
Omaha ✈️ USC '23
Live 🕺 Laugh😹 Love💜

⊞ POSTS   🔖 SAVED   👤 TAGGED

nellyrichards

nellyrichards Finally made an Insta! Gonna miss everyone once I leave for college, especially Tucker!
9w

stevie_d Omaha's gonna miss you! Have fun at USC
9w

monique99 😣😭😢
9w

ashhhhleyyy Nelly is finally on IG! I'm gonna add you to the groupchat rn
9w

bamialeshe LOS ANGELES
9w

kpdagoat CALIFORNIA MAN
9w

tyrag tucker💜
9w

Liked by **stevie_d** and **29 others**
FEBRUARY 28

Add a comment...   Post

College Bound

Nelly just moved into his freshman dorm at USC and is ecstatic! After begging his parents to let him leave his hometown of Omaha, Nebraska to go to college, his time has finally come. Excited to connect with new people and stay in touch with his friends and family back home, Nelly succumbs to societal pressure and finally creates an Instagram account. All his friends are in support of his big decision.

Although still new to the platform, Nelly uses his Instagram pretty regularly for these first few months, posting pictures of his cool new life in Los Angeles while also reminiscing on memories from back home. He stays in regular contact with not only his friends from Omaha but also the new people he's met in his classes and dorm via Instagram's direct messages.

HOOKED

By Bamidele
Aleshe

MORE THAN EVER, adolescents are using social media to communicate with friends, keep up with news, and share original content. It's proven to be an essential part of our lives. But like many elements of our high-tech society, social media use (SMU) can quickly take a turn for the worse. Many users just can't seem to log out.

Unfortunately, justification of excessive SMU has perpetuated itself within social norms. Unlike other forms of addiction, social media addiction doesn't seem to hold the same societal taboo. Without the highly visible repercussions that hold true with other addictions, this addiction lays a grave threat to the brains of young consumers, particularly adolescents. Scientists have yet to discover and understand the full detrimental health effects of this novel condition. In this article, you can learn more about existing research, tactics social media platforms use to hook users, and how scientists and politicians alike are trying to combat the issue.

You may think you're addicted to drinking coffee in the morning, or maybe you binge-watched seven hours of the new Tiger King documentary because it was "so addicting". The word "addiction" is normalized through everyday conversation, but the true concept of addiction is a behavior trend that can lead to more serious implications than a caffeine high or a wasted weekend. Many scholars define addiction as the compulsive need and use of a substance that the user knows to be physically, psychologically, or socially harmful.

From this definition, we can see that one can potentially be addicted to a variety of things whether it's a physical substance like alcohol, or excessive consumption of media. Addiction to social networking sites (SNS) doesn't discriminate: users of any age can fall down a slippery slope of consumption. There are common biological and social determinants to social media addiction, ranging from brain pathways to social pressures.

Do you ever find yourself mindlessly swiping through your SNS feed, feeling as if there's no end to the amazing, hilarious, and inevitably time-consuming content at your disposal? This is because practically all the SNS that American teens use on a daily basis are purposefully designed to steal as much time out of your day as possible.

> *"exploiting a vulnerability in human psychology."*
>
> - Sean Parker, former Facebook executive

Sean Parker, former Facebook executive, has publicly admitted to this, stating that the design process is guided by the question, "How do we consume as much of your time and conscious attention as possible?" He even disclosed that companies were "exploiting a vulnerability in human psychology" (Pandley, 2017).

This approach gave birth to the infinite scroll, quantification of likes, auto-play, and personally-curated SNS feeds (Montag, 2019). These SNS features activate the brain in a way that only makes you crave more, identical to the general pathway neurobiological addiction.

Lauren Sherman, PhD, researches digital media and adolescent social psychology at Temple University. In 2018, Sherman found that exposing adolescents to "likes" from their peers on their shared photos activated the ventral striatum, a region of the basal ganglia associated with reward processing and prosocial behavior (Sherman, 2018). Research from other groups also suggests that parts of the prefrontal cortex are involved in development and maintenance of addictive internet use (Brand, 2014). The prefrontal cortex is especially involved in decision making and social behavior. Since it's less developed in teenagers and young adults, adolescents are more susceptible to the pressures leading to excessive SMU.

So are you addicted to social media or not? *Maybe*.

The official clinical diagnostic tool used by the American Psychiatric Association is the *Diagnostic and Statistical Manual of Mental Disorders*, now in its fifth edition (DSM-V). Social media/internet addiction is still not defined as a diagnosable mental disorder, but rather as a "condition for further study" (Pies, 2009). While a psychiatrist may not be able to properly diagnose one's SMU as an addiction, this is not indicative of the high prevalence within adolescents.

Many parents and officials advocate for initiatives to expand the very preliminary research on social media addiction. The Children and Media Research (CAMRA) Act was introduced in 2019 with the goal of creating a Center for Disease Control-headed initiative to study the impact of technology and media on children. Bipartisan supporters proposed for $95 million in research funding to maximize technology's positive impacts and investigate its less-beneficial sides. Like its predecessors in 2005 and 2007, CAMRA only made it through the first step in the legislative process: introduction to Congress.

SNS's deliberately designed addictive features are still perfectly legal. However, there are emerging signs of legislative combat. Missouri Senator Josh Hawley introduced the Social Media Addiction Reduction Technology (SMART) Act in July 2019.

The SMART Act aims to require social media companies to limit addictive features, aiming to reduce the risk of internet addiction. The bill prohibits features like infinite scroll, auto-plays, "streaks" (numerical counts of how many days you've contacted someone at least once), and requires companies to implement 30-minute daily limits upon users.

Regulations like the SMART Act and the CAMRA Act are examples of legislative attempts that can work to mitigate the health effects SMU addiction will have on today's youth.

Hopefully you learned about not only your SNS activity, but also what the future holds in terms of trying to alleviate this problem that many adolescents suffer from. Without the combination of individual, institutional, and societal measures, we will continue to be Hooked. ◈

AN EMOTIONAL EPIDEMIC

*Loneliness &
Social Isolation*

"I began practicing medicine… and quickly realized that the **greatest pathology** that I saw was **not heart disease or diabetes**. It was, in fact, <u>loneliness</u>, and it was impacting the ability of my patients to live healthy and fulfilling lives."

By Alison Ly

-Vivek Murthy for NPR's *Weekend All Things Considered*
(Martin, 2017)

IN 2017, THE 19th Surgeon General of the United States, Dr. Vivek Murthy, published a Harvard Business Review article calling attention to the nation's "loneliness epidemic." That same year, the Jo Cox Commission on Loneliness published a report urging the UK government to make a serious commitment to tackle the issue of widespread loneliness; months later, the former prime minister formally created a Minister of Loneliness position, the first of its kind.

Until three years ago, loneliness was not at the forefront of the academic community's mind. Research mostly focused on social isolation in the elderly, searching for effective interventions to fight isolation before it hastened the physical and cognitive degeneration linked to aging (including Alzheimer's and difficulties with mobility).

But with an increased volume of shocking survey results about loneliness among people of all ages, the media has latched on to this sensational concept. A web search of the term "loneliness epidemic" comes up with hundreds of thousands of results from high-profile outlets including Forbes, Vox, US News, and health-focused sites like Healthline, WebMD, and Psychology Today.

Between 1985 and 2004, there was a tripling in the portion of General Social Survey respondents who claimed to have no

confidant—a trusted person with whom one can speak to about private matters (McPherson, Smith-Lovin, & Brashears, June 2006). Health insurance company Cigna found that nearly half of the 20,000 American adults they surveyed often felt alone and left out, with Generation Z (here, born from 1996 to 2000) consistently scoring higher on the UCLA Loneliness Scale (Polack, 2018). With the government's recent social distancing orders put in place in efforts to stem the community spread of COVID-19, even more attention is being paid to the harmful effects of loneliness.

Are we supposed to worry about these numbers?

Well, it is difficult to conduct consistent, reliable surveys and ensure that the pool of respondents is representative of the overall population. And whether or not we believe there is an "epidemic", loneliness is a universal emotion, so it'd be strange to see a low prevalence of loneliness—though the trend of increasing prevalence of loneliness over time may be of concern. Many researchers point out that this increased prevalence coincides with the rise of technology-mediated communication and social media, which has several implications.

Should we be worried about the effects of loneliness? Yes.

Julianne Holt-Lunstad, PhD, is one of the most highly-cited, in-demand experts in loneliness epidemic coverage. Lunstand's highly-cited meta-analysis found that people with stronger social relationships have a 50% higher survival rate than those with weak relationships. In other words, those who perceive themselves to have higher-quality relationships are more likely to live longer. Poor social relationships are more threatening for early mortality than other well-known risk factors including lack of exercise, obesity, alcohol consumption. This was born the electrifying statistic that loneliness is worse than smoking 15 cigarettes a day (Lunstad 2017).

Sure, the media's overuse of this claim may cast doubts upon its reliability. But it presents a clear message that has been supported by decades of research: chronic loneliness has negative health effects.

On one hand, the mere condition of being physically alone can be life threatening. Someone who is incapacitated in an emergency—for example, a heart attack or seizure—suffers worse health consequences or death without somebody present to help. Eric Klinenberg's book, *Heat Wave: A Social Autopsy of Disaster in Chicago*, researched the social ecology of the 521 deaths caused by the July 1995 Chicago heat wave. Other than lack of air conditioning, living alone was the highest risk factor for heat-related deaths.

ILLUSTRATION: MAKOTO FUNATSU

Additionally, having a healthy social network predisposes one to more resources, which can help them live a more satisfying lifestyle, improving overall emotional and physical health. Many governments fail to provide proper social support services for immigrants and refugees, which intensifies the social isolation and resulting poorer general health they experience during resettlement (Chen et al., 2019).

Individuals who lack social support are likelier to make risky decisions, as they have few or no trusted companions with whom to discuss their problems in a constructive, healthy way (Bhatti & Adler, 2017).

These are immediate observable impacts of social isolation, but it also affects our bodies in ways that are difficult to observe externally.

We as Homo sapiens are social creatures. The late John Cacioppo's evolutionary theory of loneliness argued that social interaction and belonging are equivalent to other survival needs, like food and water. Deprivation of a necessity for survival is a stressor upon our brain and body.

UCLA neuroendocrinology professor Michelle Rensel, PhD, defines stressors as any environmental or mental factor which throws your body systems off balance, causing a stress response (Rensel, 2020). If we perceive ourselves to be deprived of social connection —lonely—our body enters a stressed state.

Thus, loneliness affects our physiology by activating the stress response. For those interested in this biological pathway, here's how:

1. An external threat is perceived by our brain, whether physical or psychosocial

2. The hypothalamic pituitary adrenal (HPA) axis and the sympathetic-adrenal-medullary (SAM) system are activated in response to said threat.

    SAM System:

    (a) sympathetic neuron from the spinal cord will release acetylcholine (ACh) directly into the adrenal glands

    (b) This triggers the adrenal medulla (the inner portion of the glands) to release epinephrine and norepinephrine (adrenaline and noradrenaline) into the bloodstream.

    (c) These two hormones make the heart beat more strongly and tinkers with the dilation and constriction of certain blood vessels, increasing blood pressure to direct more oxygen and nutrients to the skeletal muscles.

    HPA Axis:

    (a) Hypothalamus sends corticotropin-releasing hormone to the anterior pituitary glands, which then release adrenocorticotropic hormone (ACTH) into the bloodstream

    (b) Upon reaching the adrenal glands, which sit on top of the kidneys, ACTH will induce the adrenal cortex (outside layer of the glands) to secrete cortisol into the circulation.

Cortisol is the trademark stress hormone. It binds to receptors in every tissue of the body, stimulating the breakdown of fat stores to increase blood sugar for muscle energy. It also slows function in the immune, reproductive, and digestive systems so the body can channel its energy into fleeing the threat.

By **viewing loneliness as a stressor**, researchers can study the link between perceived social isolation and measurable stress hormones. A study of psychiatric inpatients found higher cortisol levels in the urine of those who reported feeling lonely, linking loneliness to HPA activity. Researchers found that people who report poorer perceived social support have more intense stress responses, with larger jumps in heart rate and blood pressure and "a remarkably slow recovery time" (Bhatti & Adler, 2017, p. 3).

If loneliness is felt over long periods of time, say, several weeks or months—even years—then this stress response becomes chronic. **Chronic stress** is a risk factor for hypertension, or high blood pressure; an overgrowth of the heart's left ventricle which causes stiffening and lack of proper blood flow; and atherosclerosis, or plaque buildup which poses a risk for strokes and heart attacks. Rensel says chronic stress also increases the body's susceptibility to infection: cortisol suppresses the immune system, weakening the body's defense mechanisms over an extended period of time (think getting sick during finals week).

It's fascinating that these downstream biological effects are caused by our own appraisal of our personal relationships. Studies show that HPA activation varies in monkeys depending on whether separation occurs between adult partners or parent/child pairs. For example, titi monkeys showed elevated HPA activity—a stress response—when their partners were taken away, but no such elevation was found when separated from their infant (Cacioppo et al., 2015). We have varying perceptions of who is important to us (in the monkeys' case, partner vs. child bonds) and whether or not we feel adequately connected to those important contacts. These perceptions make all the difference in the way our brain and body react to our social interactions.

In the same way, it's important to recognize satisfaction isn't always linked to the size of our social network, but also quality and our use of these networks. A study of undergraduate students compared those who ranked in the top and bottom quartiles of self-reported loneliness. Both groups had similar social capital and network size. The difference was that the lonelier group sought support from their social contacts less frequently. Additionally, during interpersonal conflicts, those who reported feeling lonelier were more likely to
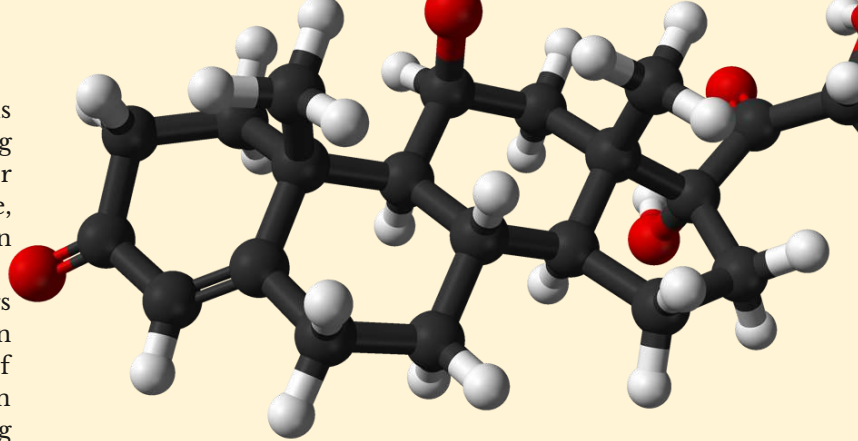
victimize themselves, blaming the other person—a possible sign of increased self-centeredness (Cacioppo, 2002).

Cacioppo explored **self-centeredness** through his evolutionary theory of loneliness. He argued that as a stressor, loneliness prompts our brains to focus on "short-term self-preservation", making us hyper-vigilant to social threats and increasing our self-centered behavior (Cacioppo, 2017, p. 1126). This makes sense in the animalistic survival perspective: when we have a smaller group of supporters, it's beneficial to be extra cautious of who we recruit into our circle of trust, because trusting anyone and everyone can lead to them taking advantage or killing us. How can this transfer over to our everyday interactions as humans?

A longitudinal study found loneliness to be a predictor of self-centeredness, with weaker association in the opposite direction. In other words, those who self-reported loneliness earlier in the study were likely to report self-centered behaviors in subsequent years (Cacioppo, 2017, p. 1126). Another study from the Netherlands found that women who perceived their social company negatively were more likely to isolate themselves afterward these "negative" interactions (van Vinkel et al. 2017).

A cycle is created here: loneliness causes one to develop self-centered behaviors which are unappealing to others, leading to fewer interactions and fewer new connections, then to further isolation and loneliness.

Another way we exacerbate loneliness is through stigma, which suppresses honest evaluations of our emotional needs. The UK Minister for Loneliness identified public health campaigns to reduce stigma as one of the four major recommendations to reduce loneliness. Much of the time, we won't admit to our loneliness when we feel it. Maybe it's because we fear sounding pathetic, or even unappreciative of those we hold near and dear. Whatever the reason, reservations about discussing our emotional experiences are harmful in the long-run.

A topic of interest is the social phenomenon of *hikikomori* (ひきこもる), a fusion of the words *hiko* (to pull back) and *komoru* (to seclude yourself) (Bergland 2020). The Japanese government defines this as "a situation where a person without psychosis is withdrawn into his/her home for more than six months" and no longer participates in society (Kato et al. 2018). It's a tracked census category which over 500,000 Japanese citizens officially fall into.

While *hikikomori* is not exclusive to Japan, researchers attribute its higher visibility there to the permeation of shame in traditional Japanese society. Interviews with these recluses, typically young men who begin withdrawing in their twenties, uncover that many feel the pressures of being highly successful as the family's only son. When they cannot meet these external and internal expectations for themselves, their lack of resilience pushes them into further shame, loss of motivation, and depression. Many also have reported a traumatic past experience of bullying (Kato et al. 2019).

Researchers advocate for early intervention by parents, who could be key informants, but instead typically ignore signs of increasing withdrawal and don't actively seek professional help for their children. This is one extreme example of why communication and destigmatization is necessary to tackle mental health issues like loneliness.

Loneliness is linked to a suite of other emotional and mental health issues, as noted in the hikikomori

study. Loneliness and lower perceived social support in childhood is linked to more depressive symptoms in adulthood (Matthews et al. 2016). The previously mentioned study of Dutch women who appraised social experiences negatively also concluded that the loneliness after this appraisal predicted development of major depressive disorder (van Winkel et al. 2017). However, a study of adolescents showed that depression and loneliness often co-occur but are ultimately distinct experiences. Higher self-reported loneliness wasn't correlated to depressive symptoms.

In fact, those with high loneliness and low depressive symptoms were characterized by lower friendship quality than those with low loneliness and high depressive symptoms (Spithoven et al., 2016). While loneliness may be a risk factor for depression, and loneliness may increase with depressive symptoms, it is not a one-track cause or predictive factor for depression.

When approached with the topic of reducing loneliness-related stress, Rensel said that loneliness cannot be cured simply by "finding random people to be friends with." She explained that there's a type of stress called toxic stress, which is chronic, health-damaging, and due to external factors we can't control.

In the context of this magazine, excessive SNS use can lead to chronic, health-damaging loneliness. But it isn't a toxic stress: we can control how much we use SNS. If overusing the internet is impacting your mental health (and thus, physical), the first step to healing is recognizing that you have the power and choice to step away from the online world. (See advice on reducing loneliness on p. 41.) ◈

For further discussion on social connection & health:
Former Surgeon General Vivek Murthy, MD, wrote a book called *Together: The Healing Power of Human Connection in a Sometimes Lonely World.* In April 2020, Dr. Murthy was a guest on Brené Brown's podcast *Unlocking Us.*

Welcome to my Page

🎓 Studies at Saint Mary's

🕐 Joined June 2018

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Facebook © 2016

Justin Santana
August 2, 2019 · 👥

+4

Justin Decker, Kyle Mendoza and More

August 2019

Removed

Justin Santana
August 3, 2019 · 👥

August 2019
Updated his Profile Picture

👍😮❤️ Taylor Knotts and 21 others   3 Comments

Charlie Okudah HAHHAHA this is such a good profile pic. I love it xD
Like · Reply · Share · August 3

Taylor Knotts you're just as funny online as in person
Like · Reply · Share · August 3

Naomi Whitefield you look so cute in this picture omg omg <3
Like · Reply · Share · August 4

Justin Santana
August 4, 2019 · 👥

Yo school is hard af. Why do I need geometry? It's not like I'm going to use this in the real world anyways.

👍😮❤️ Andy Wall and 12 others   1 Comment

Andy Wall bro tell me about it. I don't even know how to use the pithagreen theorem.
Like · Reply · Share · August 4

Create a Post | Photo/Video Album | Live Video

What's on your mind, Justin?

Photo/Video | Feeling/Activity | ...

Anthony Park
August 5, 2019

Bro hop on Call of Duty. We need another player for Search and Destroy. Kai, Michael, and I, are on. xD
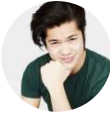
👍😮❤️ Justin Santana and 12 others   2 Comments

Justin Santana haha I can't play right now. My parents are home. They are going to leave in a bit tho. Gimme an hour yea?

Like · Reply · Share · August 5

Anthony Park Fasho mama's boy. You better be warmed up when you hop on.

Like · Reply · Share · August 5

Hilary Simon
August 7, 2019

Yo, check your notifications. I invited you to come to Central Plaza after school on Thursday. We're going to walk so meet at the South Gate. Also bring money for Starbucks and Chick-Fil-A :)

👍😮❤️ Justin Santana and 12 others   2 Comments

Justin Santana Fasho! I have tennis practice on thursday but I'll skip it. I'll leave a little early so I can make it back on campus before my mom picks me up.

Like · Reply · Share · August 7

Hilary Simon you're wild ahah. My parents would kill me if they found out. You're bold af but I'm happy youre coming. Naomi is also going to be there, so make your move ;)

Like · Reply · Share · August 7

Friends are Forever, GPA is Temporary

Knowing his parents are having a hard time adjusting to the new life in Pasadena, Justin doesn't want to place additional burden on them so he refrains from telling his parents about the recent cyberbullying. But things haven't been easy at home either. With his parents constantly arguing with one another, Justin feels distant. As a result, he resorts to spending more time on Facebook. From his eyes, it works; it distracts him from what's happening at home and he's able to foster his relationships online. As the new kid on the block, his actions and behavior changes in order to conform and earn the approval of his peers. During adolescence, there is a transitional period from the importance of family ties to a peer-centered environment, where social bonds become more desired. On p.21, it discusses this transitional period in greater detail, as well as biological changes that are occurring. Despite knowing his parents don't condone violent games, Justin set out to get the new Call of Duty through his friends.

Search

naya is: struggling

@ayan.txt

original (beginner) art + stickers - pls don't repost my art!
she/her/hers

📍 USA

TWEETS	FOLLOWING	FOLLOWERS
342	491	14.9k

Following ⌄

Tweets   Tweets and replies

October 31, 2019

people can be demanding. I'm a full-time student, not a full-time artist. I do this as a hobby, please stop DMing me with drawing requests

↩ 2   ⟲ 3   ★ 27   •••

November 5, 2019

i didn't mind staying in to finish this since i promised to post it today... but FOMO is skyrocketing after seeing my friends' halloween pics😭

↩ 72   ⟲ 1.1k   ★ 2.9k   •••

November 5, 2019

won't be replying to DMs for a week! I'll be back soon though✨

↩ 93   ⟲ 81   ★ 211   •••

Que @quedocs • November 5, 2019
Replying to @ayan.txt

is everything ok?

↩ 2   ⟲ 2   ★ 6   •••

naya is: struggling @ayan.txt • November 5, 2019
Replying to @quedocs

deleting all my social media apps until i'm done with college apps, also to avoid seeing my friends having fun, it makes me feel terrible

↩ 16   ⟲ 16   ★ 89   •••

November 11, 2019

college apps DONE! Now back to spending all my time on twt lol

↩ 34   ⟲ 432   ★ 1.3k   •••

17

December 25, 2019

why are holidays the loneliest time of year?

↩ 100   ⇄ 9   ★ 150   •••

---

aliiii @talismanes • December 26, 2019
Replying to @ayan.txt

no family time? :(

↩ 8   ⇄ 3   ★ 18   •••

Isabelle @isabor • December 26, 2019
Replying to @ayan.txt

oof i felt this one, hang in there, ily

↩ 2   ⇄ 13   ★ 98   •••

Rose @roseminss • December 27, 2019
Replying to @ayan.txt

maybe spend the day with friends? My DMs are open too

↩ 1   ⇄ 24   ★ 182   •••

January 1, 2020

happy new year!!

↩ 32   ⇄ 289   ★ 1.7k   •••

Que @quedocs • January 2, 2020
Replying to @ayan.txt

how'd you celebrate?

↩ 5   ⇄ 3   ★ 10   •••

---

naya is: struggling @ayan.txt • January 2, 2020
Replying to @ayan.txt

this is the first time in high school i didn't spend it with friends :(but i have you all lol

↩ 32   ⇄ 24   ★ 349   •••

Que @quedocs • January 2, 2020
Replying to @ayan.txt

nooo it's your senior year! The internet will always be here but you're moving to college soon, enjoy time with your friends

↩ 1   ⇄ 2   ★ 21   •••

February 2, 2020

wow this is my first time writing to a magazine advice column and it was actually published😄

↩ 34   ⇄ 10   ★ 143   •••

February 15, 2020

Annual Art show, 1st in state for colored pencil :) after comparing my art to others' on twitter, this was a good wake up call to just focus on me

↩ 21   ⇄ 108   ★ 342   •••

Naya puts her foot down and tells people to stop filling her Direct Messages inbox with requests. This gives her a handle on some of her connection overload (see article on digital stress, p.26). When she misses her friends' Halloween party to meet a soft deadline for an art post, she doesn't mind. But two days later, she sees their pictures and says she's experiencing Fear of Missing Out (FOMO). She takes action to control her FOMO and social media use by deleting social media... until one week later, when she says she's "back to spending all [her] time" on Twitter.

On New Year's Day, a Twitter friend's post makes her reevaluate the way she spends her time. She has a solid friend group, but hasn't been spending time with them, despite it being their senior year. She also hasn't spent much time with her little sister since school started, despite their usually close relationship. Naya ends up writing to an advice columnist in a new young adult magazine that's been gaining traction and hype over the past few months. Even though the answers were somewhat expected, she decides to heed some of the advice that's given (see advice column on p.41), specifically spending time with her family and making an effort to reach out to her real-life friend group.

🔍 Search

🏠 ✈️ 🧭 ♡ 👤

nellyrichards [Edit Profile] ⚙️

21 posts **4,532** followers **721** following

Nelly Richards
Omaha 🛩️ USC '23
💸⭐

⊞ POSTS   🔖 SAVED   👤 TAGGED
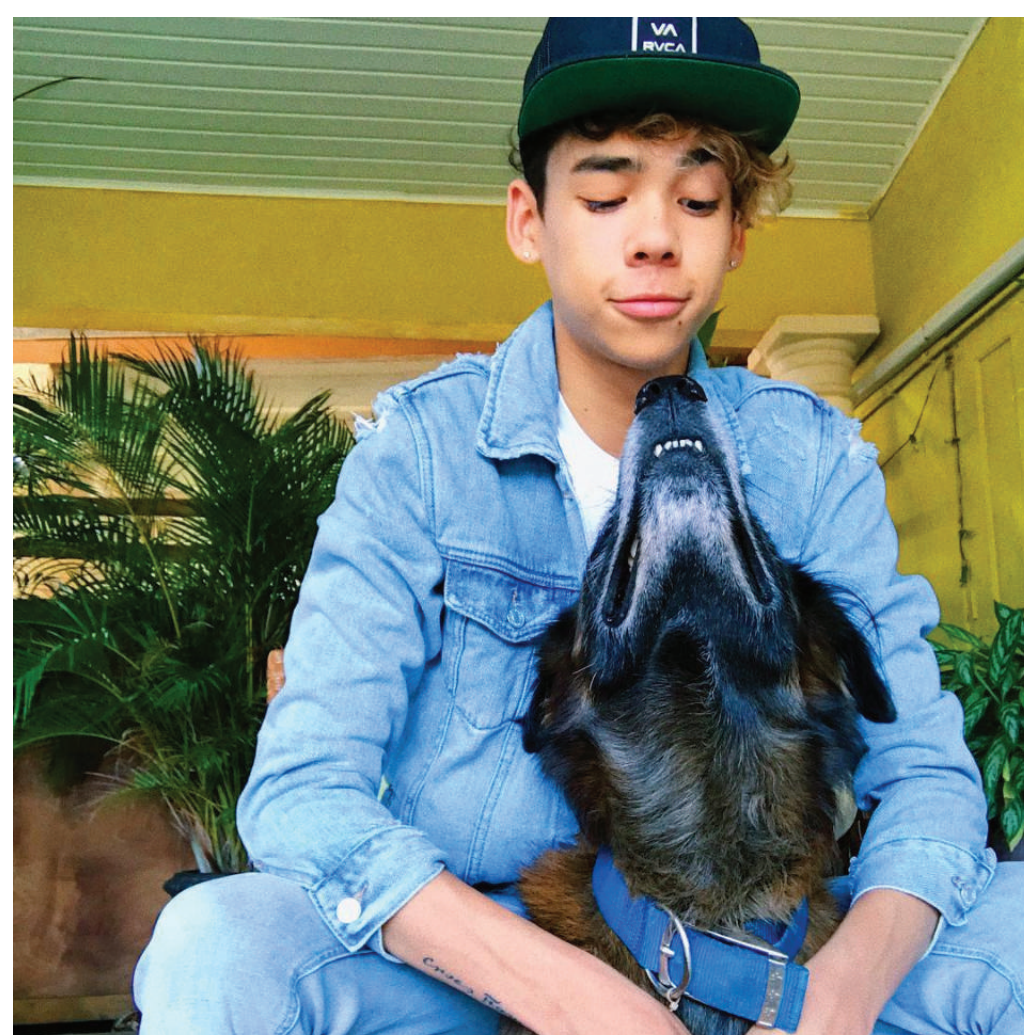
nellyrichards

nellyrichards I feel rich when I'm interacting with my fans on IG! (get it... rich... like my shirt)
9w

__sophia NELLYY ur sooo cuteee👀💕
9w

craig510 fans?? who you think u r?
9w

thomb bro I love your posts
9w

roddymoney check dm g, I got a business deal for you
9w

bamialeshe when are you coming back to Omaha, everyone misses u
9w

amburrr @jennycraig this was the boy I was talking about
9w

Liked by stevie_d and 29 others
FEBRUARY 28

Add a comment...   Post

Followers Following

As the school year goes on, Nelly spends less time messaging his friends and uses a majority of his time on Instagram comparing himself to celebrities. Slowly over time, he becomes addicted to scrolling through his feed, liking pictures posted by old friends and commenting on influencers' posts. His posts become more self-centered, viewing his friends as "fans". Nelly develops approval anxiety, and he starts to spend money on trendy clothing that he sees his favorite celebs wear even though they are out of his budget. The validation he gets from receiving likes and comments on his pictures fuel his need to be active on the platform as much as he can throughout the day (read more on p.26). Nelly deletes old pictures of his life back in Omaha in an attempt to "rebrand" himself. In real life, Nelly surrounds himself with other freshman that are also addicted to using Instagram and have larger followings than him. These friends continually instill the idea that they are better than the rest of their class. Rather than focusing during lectures, Nelly sits next to his friends, taking selfies and posting it to their stories.

Adolescent Brain Development

Teens & Young Adults

By Dennis Vu
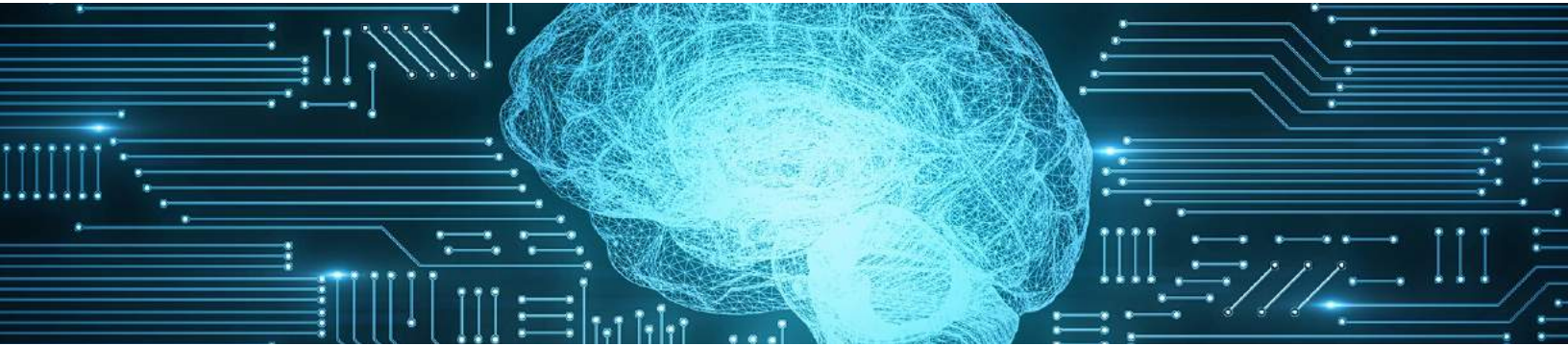
Hey Siri, What is a teenager?

AS A TEENAGER, I truly felt like the world revolved around me; as if the 7.6 billion individuals in the world cared about my Instagram photo of a morning Starbucks Frappuccino or Twitter rants about how my crush won't notice me. It was a time for impulsive adventures, defiant behavior, rebellious remarks! Was it because of puberty where hormonal activity is constantly fluctuating…? A change in perspective of one's identity…? Brain development and reorganization…? Now, as a young adult with more life experiences, I still get a Frappuccino but every other Pumpkin Spice Latte Season, and most definitely not in the morning. Heartbreaks? Been through a couple more and it hurts just the same… but I don't feel the need to indirectly rant about it to my Twitter friend.

Adolescence, the transition period between childhood and adulthood (approximately 10-22 years old, but differs between cultures), is a transitional stage during which parental influence decreases and peers become more important (Crone, 2018). Adolescents start increasing their social engagement, partially driven by increasing interpersonal conflict with parental figures, strong need to fit into a peer group, and desire to establish independence (Spear, 2004) (Konrad, 2013).

With social media transforming how humans interact and connect, adolescents are engaging in a new form of social bonding--one where individuals can monitor peers' status, check feedback, rejection/acceptance messages, and encounter peers as (idealized) images on screens.

Although these social behaviors existed far before social media platforms came into existence, the ability of social media to always be accessible through a handheld device and constantly updated with new status posts, tweets, or stories, leaves adolescents to be constantly exposed to social media and its repercussion. Considering the plasticity of the brain through periods of proliferation and reorganization, it's imperative to analyze the neurological responses and effects that are imposed by social media usage.

Neuronal Processes

Gray vs. White Matter

Adolescents experience a second surge in neuronal reorganization and proliferation, which takes place through thickening of grey and white matter (Arian, 2013). Grey and white matter aren't specific structures of the brain, but layers that wrap around different regions of the brain that enable better synchronization and speed of neuronal signals. Grey matter gets its name from the proliferation of glial cells and neuronal cell bodies, which are grey (Stiles, 2010). It is associated with social understanding and communication. White matter is named for the whitish oligodendrocytes which myelinate axons. Similar to the function of insulation covering telephone lines, myelination speeds up electrochemical signals relayed between different brain regions. White matter connections are related to behavior control, such as the connections between the prefrontal cortex and the subcortical striatum for patience or waiting for a reward (Crone, 2018).

The adolescent transition isn't an increase in brain volume--the brain reaches 90% of its adult size by age 6 (Casey, 2008). Rather, it's the strengthening of existing neural circuits and elimination of abundant, less used synapses, as a result of development and experience. This reorganization increases efficiency in speed and communication in cortical connections between various brain regions.

Gray matter volume develops in an inverted-U shape pattern, where grey matter volume peaks during early adolescence and slowly decreases as the individual matures. Researchers found that from the age of four to 22 years, 145 participants' grey matter and cortical thickness in the frontal and parietal-lobe peaked around the age of 12 (Blakemore, 2012). As the individual continues through adolescence, grey matter volume begins decreasing. A decline in gray volume matter is due to synaptic pruning, where an excess of less-used synapses is removed; these connections are no longer needed. Some gray matter volume also undergoes myelination where it becomes converted into white matter, which results in gray matter volume loss. It's important to note that losing grey matter doesn't necessarily mean a loss of brain function. Instead, it eliminates unnecessary neural circuits and strengthens commonly used networks, contributing to quicker neurological communication.

On the other hand, white matter volume develops in a roughly linear pattern, primarily driven by axonal myelination of synaptic circuits. In an MRI study of healthy adolescents aged five to 17 years, increasing age was associated with increasing white matter volume (Reiss, 1966). Further, myelination (increase in white matter) proceeds from inferior to superior, and posterior to anterior (Konrad, 2013).

Despite the different rate of maturation for both grey and white matter, it demonstrates that the brain is undergoing critical reorganization and complexity, making adolescents vulnerable to environmental experiences, in this case social media usage.

Synaptic Pruning, Myelination, Plasticity

Although these social behaviors existed far before social media platforms came into existence, the ability of social media to always be accessible through a handheld device and constantly updated with new status posts, tweets, or stories, leaves adolescents to be constantly exposed to social media and its repercussion. Considering the plasticity of the brain through periods of proliferation and reorganization, it's imperative to analyze the neurological responses and effects that are imposed by social media usage.

While part of adolescent brain maturation is shaped by genetics, the majority is influenced by environment. When a baby is born, they are not on one predetermined path of development. Rather, the adolescent brain has "plasticity," where neural changes allow an individual to adapt to their environment, acquiring or refining new skills to reach a point of independence (Arian, 2013). As we learn acceptable and unacceptable behaviors, our brains adapt to ensure we're successful and self-sufficient.
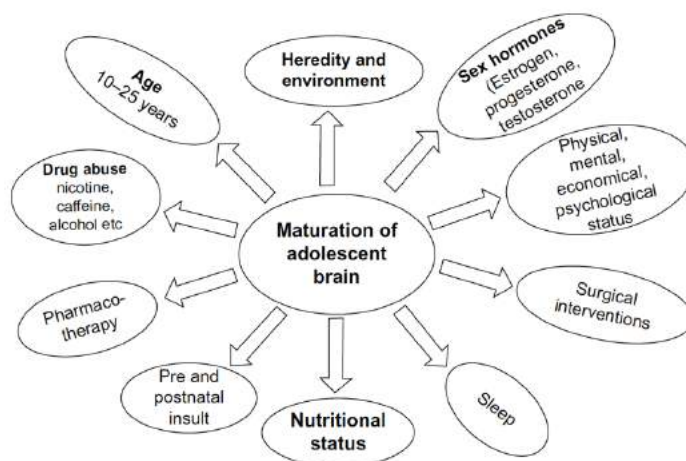
(Arain, 2013)

Unfortunately, researchers noted that plasticity leaves individuals more vulnerable to poor decision making. Since region-specific neural circuits are under development, it's difficult for adolescents to think critically and rationally before making decisions. Considering the process of adolescent brain development, adolescents are highly vulnerable and sensitive to the consequences of social media use.

Limbic System vs. Prefrontal Cortex
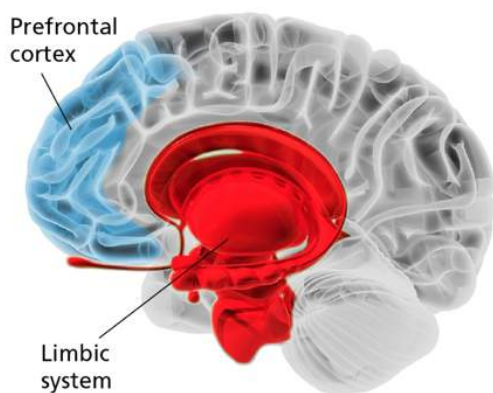
The limbic system (aka the subcortical region), is composed of the amygdala, hippocampus, nucleus accumbens, and hypothalamus. These structures regulate emotion, stress responses, and feelings of pleasure/reward for certain behaviors (Arian, 2013) Konrad, 2013). Functional MRI studies show that the anticipation of rewards was associated with elevated activation in the nucleus accumbens of adolescents, compared to adults. Other research shows greater subcortical activity when decisions are influenced by immediate over long-term gains (McClure et al., 2004). These studies suggest that the limbic system's role in regulating behavior is primarily influenced by emotions related to instant gratification, pleasure, and rewards.

The prefrontal cortex (PFC, or the cortical region) is known for "higher-level" thinking, where sensory and thought information from all over the brain is compiled to make comprehensive decisions. One of the PFC's key responsibilities is cognitive analysis, abstract thought, and the moderation of correct behavior in social situations (Konrad, 2013). Neuroimaging studies of social cognition have shown a heightened activity in the medial prefrontal cortex when participants were asked to think about others' intention and feelings (Crone). Rather than only reflecting on our own concerns, the PFC helps us read social cues, using abstract thinking to predict others' intentions. Through controlled actions and abstract thought, the PFC helps us exercise good judgement when placed in difficult situations.

The PFC also plays a fundamental role in emotional regulation. Research shows that social media-based rejection caused anger that followed with aggressive behavior. This behavior included sharing less of their resources to people who rejected them in an online environment (Crone, 2018). From neuroimaging data, individuals who were still willing to give to people who rejected them had greater activation in the dorsolateral prefrontal cortex. It suggests the importance of the prefrontal cortex in mediating and controlling anger from rejection, and using logic to make decisions, rather than off emotions.

Social Behavior of Adolescents
Risk vs. Rewards

But despite its importance in regulating one's complex thinking and behavior, the prefrontal cortex is one of the last areas to develop and reach maturation, suggesting a less utilization of rational thinking and decision-making in adolescents. The brain rewires itself from the onset of puberty up until 24 years old, especially in the prefrontal cortex, that is accomplished by synaptic pruning and myelination (Arian, 2013). There has been research that indicates the brain development occurs from back-to-front, where the prefrontal cortex develops last (Arian, 2013). More specifically, myelination progresses from inferior to superior, and posterior to anterior (Konrad, 2013). In nonhuman primate and human postmortem studies, there is data that shows the prefrontal cortex being one of the last brain regions to mature (Casey, 2008).
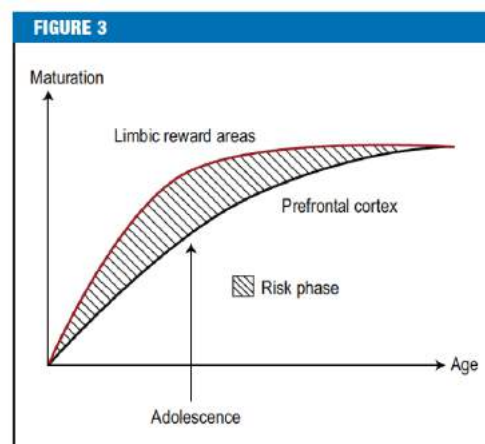
(Konrad, 2013)

The graph above represents the neural imbalance of maturation between the prefrontal cortex and limbic system, with the axes being maturation and adolescence age. As age and brain maturation progresses, the limbic system matures quicker than the prefrontal cortex through mechanisms of synaptic pruning and myelination, which widens the risk phase of adolescents having greater vulnerability for risky and impulsive behavior. Past neuroimaging studies found that adolescents' prefrontal cortices are used less often during interpersonal interactions and decision making, compared to their adult counterparts (Arian, 2013). During this risk phase due to neural imbalance between the limbic system and prefrontal cortex, adolescent behavior is influenced primarily by rewards and satisfaction, more than rational, long-term thinking, which leads to a greater susceptibility to impulsive and risky behavior. Eventually the gap narrows as the individual enters adulthood, where all brain regions fully mature with proper functionality. (Konrad, 2013).

Disconnect from Family, Connect to Peers

To understand the neurological imbalance better, it's important to recognize the sociological transition that occurs simultaneously, where adolescents begin shifting to a peer-centered environment and away from the family-ties. Through this period, there is a strong need to fit in peer groups and being accepted or rejected are important matters for adolescents (Crone, 2018). Being able to conform and appeal to peers are not only driven by desire to avoid social sanctions but is rewarded with feelings of satisfaction (Berns, 2010). When an individual experiences social acceptance, the ventral striatum, associated with the limbic system and the experience of pleasure and rewards, is highly activated, in a similar way it is activated in gambling and reward (Crone, 2018). With growing desire to establish independence and forge social bonds with others, these social bonds become prioritized matters, where behavior and decisions may be driven by emotion and rewards from the limbic system, rather than rational, cognitive thinking from the prefrontal cortex.

Placing this into the context of social media, adolescents are surrounded by hundreds to thousands of friends, followers, and subscribers, who are routinely monitoring their status and activity, and can act as a group influence. In a behavior test, researchers found that adolescents make more risky decisions when in a group than when they are alone (Konrad, 2013). From the perspective of an adolescent, the justification may be that the social approval of peers is worth more than the risk itself. It could bring greater popularity, more friends, and respect, that elevates one's individuality and independence, which reinforces the use of social media. But the pleasure from experiencing these social rewards blinds adolescents from being cognizant and rationally think of the consequences from social media usage.

For example, with the media's pressing warp on beauty, such as a thin-body image, girls have reported to have greater body dissatisfaction (Crone, 2018). Pictures of Ferraris, crystal clear blue waters of beaches in Bora Bora, and perfectly angled selfies, are only small moments of bliss captured that evokes feelings of envy. It seems as if these influences live an idealized, perfect life with the greatest things life has to offer. It leaves followers with a distorted view on life and brings dissatisfaction on what one already has. For adolescents that are experiencing various neurological development that causes an imbalance of cognitive function, as well as a sociological shift in importance of social bonds, social media usage poses a greater risk for adolescents.

Searching for the Thrill of It

If adolescents can recognize the dangers of risky behavior, why do some still engage in it? To simply put it: Big Risk, Big Reward. Risky behavior exposes the individual to greater challenges which can result in learned lessons, such as necessary survival skills allowing one to survive independently from caregivers. Risk also forges a way for one to explore their identity, capabilities, peers, and the world (Arian, 2013). From a simple evolutionary perspective, it accelerates the maturity, as well as independence of an individual (Spear, 2004).

Of course, not all adolescents engage in risky behavior, nor do all adolescents have the same threshold for risky behavior. The context at which they are placed in, influences their engagement, known as "hot" and "cold" cognition. Hot cognition is when the individual's thinking is under high arousal and intense emotion, in which case is when teenagers tend to make poorer choices (Arian, 2013). This can be noted as peer influence, where group approval and acceptance influence one's behavior or decision-making in order to reflect the values of the group. Whereas, cold cognition involves less intense and pressurized conditions.

Applying this to the context of social media, adolescents seem to face both types of cognition simultaneously. While an individual may be away from peer influences in real life, peer influences still exist through online platforms. While they may be free to post whatever content they like, there are still social sanctions and rewards from their peers that influence online behavior. ◈
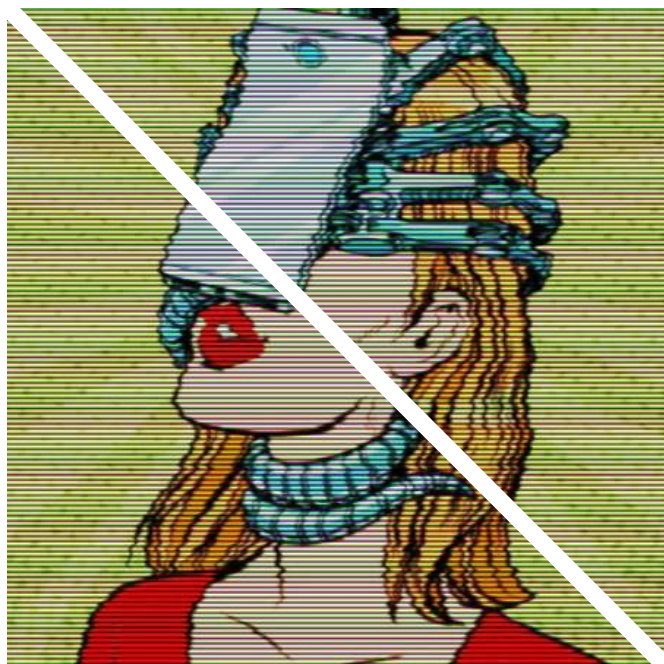
THE BURDENS OF CONVENIENCE

By Alison Ly

HAVE YOU EVER felt the pressure to reply to someone's text because you ignored it, but now you're on a social media app, where they might see your updated activity? Have you ever been on the other side of this situation?

I still occasionally refrain from using SNS to avoid potentially offending a friend. So why do we sometimes feel guilty about respecting our own preference on how to spend time on our phones or SNS?

We can feel entitled to our friends' time because it's assumed that everyone constantly checks their phones. Mobile phones are such convenient arenas for communication, leading us to have higher expectations to reciprocate communication, and with immediacy. Young people find this especially burdensome due to their higher activity on social media.

Media researchers Hefner and Vorderer define digital stress as

> "stress resulting from a **strong** and perhaps almost **permanent** use of **communication technology**... that is triggered by **permanent access** to an inconceivable amount and diversity of (**social**) **content**"

(2016, p. 237).

This article explores four major components of digital stress as defined by Steele, Hall, and Christofferson (2020): connection overload, availability stress, fear of missing out (FOMO), and approval anxiety.

AVAILABILITY STRESS

Availability stress is caused by our ease of access to others through direct messages, texts, comments, and public SNS posts. This heightens expectations for how we maintain relationships, which can lead to overdependence and feelings of entrapment. This decreases relationship satisfaction and increasing feelings of obligation, rather than voluntary communication. Sometimes, we seem to forget that we shouldn't expect or demand constant connection with a certain person at all times.

CONNECTION OVERLOAD

The stress of availability feeds into **connection overload**. "Connection" includes both connection to others and the endless planes of information provided by the Internet, ranging from user-generated posts to informational videos and news updates.

The existence and intensity of this overload can greatly depend on **which SNS you choose to engage with**.

An example of overload involving irrelevant information is **Venmo**, the money transfer app. It's an extremely convenient app and a staple for students, allowing users to pay and request money from each other, mediating transactions between checking accounts.

However, Venmo also possesses an oddly social component. You can see other users' payments, captions, and comments.

You choose whether to display your payments to "Friends" or to all Venmo users; there's even a "Like" feature.

If you scroll down your Venmo feed, you get an **oddly detailed view into others' lives**: which day they pay rent, where they've eaten with their friends, inside jokes and cryptic emojis, how often people pay for formals and socials, etc. Additionally, Venmo automatically connects your phone contacts, adding to the irrelevance of this information—you'll see activities of high school classmates, someone you were in a group project with freshman year, and a variety of people you have no connection to anymore. These posts are the first thing you see upon opening the app, making it more or less unavoidable when you're just trying to make a monetary transaction.

Seeing information that's not directly related to your own personal social life, but displays the frequency at which peers interact with each other, can kickstart comparisons.

Am I going out with my friends enough? Are they hanging out without me? I was fine a minute ago but now I feel so lonely.

FEAR OF MISSING OUT

This leads to the third component: **Fear of Missing Out (FOMO)**. FOMO is the **fear of being excluded** which motivates us to say "yes" to every opportunity to attend an outing or event. The driving principle is that we'll regret not choosing to join them after seeing how much fun they had—and social media is perfectly crafted for showing off the fun parts of our lives.

FOMO began as a casual term among SNS users. Over the past five years, however, it's been ubiquitous enough to catch the attention of sociologists and psychologists, confirming its status as a **research-worthy social phenomenon**. Canadian researchers found that more college students report FOMO from Thursday to Saturday, at night, and during involuntary activities like

> ## uncertainty and anxiety about others' responses and reactions to one's posts

homework (Milyavskaya et al., 2018). Thursday night marks the start of the weekend for many college students, explaining the rise in FOMO, especially if you only have time to study at night when it seems like so many others are going out.

However, we only feel alienated or lonely if a friend directly tells us about their adventure after the fact, or if we see their Snapchats and Instagram posts. In other words, **ignorance is bliss**. But with the temptations of SNS, that ignorance is harder to maintain. SNS thus plays a major facilitating role in creating FOMO.

A pop take:
Lauv's "Modern Loneliness"
from *How I'm Feeling*

*"Modern loneliness, we're **never alone**
But always depressed, yeah
Love my friends to death
But I **never call** and I **never text**…"*

The lyrics separate loneliness from social isolation, and connects depressive moods with that loneliness that can exist even in the presence of others.

Even with easy access to electronically-mediated communication via phone, he says he never bothers to call his friends despite how much he cares for and loves them. This represents the connection overload and availability stress that young people feel: a pressure to always be in contact with somebody and guilt if we aren't replying to messages throughout the day.

The final line in the chorus supports research on solutions to loneliness that focus on giving back to the community or removing the focus from oneself.

Lauv sings, "You get what you give and give what you get" which insinuates that if you're attentive to others and contribute your fair share to the relationship, then they'll reciprocate the efforts.

The fact that many students publicly resonated with and/or supported this song is a bit concerning. On one hand this can feed into the casual glorification of mental illness on SNS. On the other hand this shows how many people relate, and (on the third hand) that listening to others' music is an avenue of expression for consumers, which can help reduce stigma around loneliness.

APPROVAL ANXIETY

Approval anxiety is "uncertainty and anxiety about others' responses and reactions to one's posts or to elements of one's digital footprint"—more or less, being worried about how others construct and judge your online reputation (Steele, Hall, and Christofferson, 2020, p. 18). We want to put forth our best foot, publicizing the highlights of our life,which contributes to others' FOMO. For many of us, SNS is highly visible to our peers. Exposure to a large audience can increase the pressure to present ourselves in a likable way, seeking mass approval from others.

Approval anxiety leads most adoles-cents to put forth **dishonest versions of themselves**, especially on picture-based sites. Of course, nobody can publicize their life's every up and down on SNS. However, from the viewers' standpoint: We know that someone's Instagram feed is highly curated and not fully representative of their life or personality. But if they're given a high amount of approval by others (quantified by Likes), we may feel inclined to imitate them to attain that approval. To do this, we'll comply with that standard of what people Like on social media, which are generally beautiful, happy, fun images.

Our anxiety about whether or not we'll be shown the same approval (or rather, garner the same amount of Likes) causes unnecessary stress about what to post. It's ironic that SNS profiles are touted as avenues of self-expression when the very existence of the platform so easily encourages uniformity and apprehension about whether we should fully, genuinely express ourselves or not.

Another component to digital stress is the **excessive level of control** we exert over our online images and personas. We choose which posts to like, who to follow, who follows us, and what we post. In some cases, like Nelly's, this gives way to obsession and holding oneself to unrealistic expectations.

This isn't necessarily a sweet reminiscence of the pre-telegraph nineteenth century when vis-à-vis communication and hand-written letters were the only avenues of human connection. Rather, defining the components of digital stress will help us examine how the social media landscape affects our social interaction with peers. Articulating our internal thought processes into terms that help us better understand our SNS experience. ◈

SOCIAL MEDIA & LONELINESS

By Alison Ly

WE'RE ALWAYS CONNECTED to our peers via social networking sites (SNS, defined on pg. 1), so why do we still feel lonely?

Social media's role in our lives

There is plenty of research about the benefits social media use (SMU) for elderly people who are isolated from their families, or are patients in assisted living care facilities. The case is not the same for the majority of people under 60 who work and have more consistent contact with their nuclear families. It's even more complex for teens and young adults attending school, where they're surrounded by peers. Younger people tend to be part of more dynamic environments in everyday life, especially during the late teenage years and early twenties, when high school graduates enter the workforce or begin their college education.

For many adolescents and young adults, SNS is a key extension of our lives. We share funny posts and indirectly keep in touch with friends, while also fostering new connections—for example, adding friends and acquaintances on Facebook and Instagram after you join an organization or meet your college hallmates. It's also another way to stay updated on news. SNS can also serve as another platform to express ourselves, whether we show our true personalities or more of an online persona we have the power to toy with.

These personas have pushed thousands of teens into micro-celebrity status, turning SMU into a profitable career. Waves of early-2010s YouTube stars paved spaces in mainstream entertainment, music, and business. In 2016, traffic on the Vine app peaked as users posted witty six-second videos that received millions of loops. Instagram modeling became a new form of marketing, with companies recruiting trendy, popular teens and young adults to promote their products. And this past year, the longer-form video-based app TikTok is home to a new wave of teens pushing for "internet fame". Over the past decade, many young online celebrities have even dropped out of school, choosing not to pursue traditional jobs or higher education, due to the rapid financial gains they've experienced from SMU.

A survey of over 10,000 European adolescents (14 to 18 years old) found that younger teens with heavy SMU had more pronounced negative internalizing effects than older teens with heavy SMU (Tsitsika et al. 2014). Authors attributed this to better-developed social skills and secure friend groups towards the end of high school. While the prefrontal cortex—the part of the brain associated with intricate social cognition, or social skills—isn't fully developed until the mid-twenties, it definitely is more mature in an 18-year-old than in a teenager who's just left middle school.

While these financial gains are very real, we must take caution with believing social media can substitute for other aspects of real life, including actual face-to-face social contact.

Social media is not a substitute for real-life contact

> *"I know the right places on the internet to go to find support and friends... But I've definitely felt the impact of not having any physical face to face contact with people, because you just feel alone, and like there's nobody around to help..."*
>
> - Message to the UK's Minister of Loneliness, from someone w/agoraphobia (Aely 2020).

It's difficult to imagine feeling an optimal amount of human connection through SMU alone. Maybe, if the world continues for tens of thousands of years and SNS becomes an increasingly domineering force in our lives, the human species would eventually evolve to lose our need for real-life communication. But this obviously isn't happening

in our lifetime, and it's important to learn why we cannot be humanly fulfilled by only SNS-mediated communication.

First of all, we have the classic phrase: humans are social creatures. It's true. We live together, collaborate on projects, and engage in social activities as a pastime. Wouldn't SNS help fulfill our need to stay connected? Are we feeling lonelier because SNS isn't doing its job?

While social media is touted as a way to connect, major SNS sites are still businesses. If users give more traffic to these sites, the company makes more money. (See pg. 9 for Bami's piece on how companies like Facebook design SNS interfaces to be addictive.) The bottom line is, SNS companies aren't prioritizing healthy, long-term communication, especially not with feeds that encourage endless scrolling and searching for content unrelated to people within your personal social circle. We can't say that SNS isn't doing its "job" because there is no job to be done; companies have little to no moral obligation to ensure that each of its users have a constructive experience, especially since that experience varies based upon each user's own method of use (see pg. 39, *Effects May Vary*). While social media isn't all bad, but it isn't inherently good either.

Second, while SMU can make us feel highly connected, it cannot fully engage our social brain in the same way real-life interaction does. When speaking to a friend in real life, there's usually more pressure to abide by proper social etiquette. When video-chatting friends, you could be preoccupied with other content on your screen, not even watching their face as they speak. Communicating via social media can't command our full-body attention the same way, meaning that we're missing the full experience of social interaction, and different—and possibly fewer—parts of our brain are activated.

A major component missing from common digital communication is human touch (I say "common" because Northwestern University is exploring the avant-garde field of haptic technology, which aims to virtually emulate human touch using lightweight synthetic skin patches (Morris, 2019). This isn't simply a surface observation; lack of touch also means less brain activity. Many structures make up

the "social brain," including the medial prefrontal cortex, the superior temporal sulcus, and the insular cortex (Blakemore 2008; Adolphs 2009). The insular cortex's posterior insula is activated when our brain registers socio-emotional components of touch (Davidovic et al. 2019). If we communicate with others electronically (without high-tech haptic devices), then some parts of our social brain have no information to process. Digital communication doesn't engage our brain in an equivalent manner; we can't expect it to produce equivalent feelings of satisfaction that we typically get from being in a friend's presence.

Finally, SNS may provide us with a high amount of connection, but those numbers aren't measures of the quality of our interactions. Our need to belong means more than just affiliation with society—we need positive, meaningful, and long-term bonds (Baumiester & Leary, 1995). A high amount of daily SMU involving hundreds of acquaintances with whom we don't have meaningful personal connections will not achieve the same satisfaction and feelings of inclusion as real friendships.Now that we've seen some lacking sides of social media, there is clearly room for loneliness to develop despite having a wealth of online connections.

What *is* Loneliness?

It's different than social isolation, a separate phenomenon, which the APA defines as the "voluntary or involuntary absence of contact with others." When social isolation is involuntary, it leads to perceived social isolation (PSI), which is also called loneliness.

Loneliness as the unsettling experience or emotion resulting when "inherent needs for intimacy and companionship are not met," or when there is "a perceived discrepancy… between an individual's desired and actual social relationships" (APA). Social and psychological researchers traditionally have their subjects complete the UCLA Loneliness Scale, first developed in 1978, to measure subjective loneliness.

Social isolation is objective, while loneliness is a subjective feeling. British researchers found scientific support for this concept after studying a longitudinal twin data—the most sought-after data for behavioral
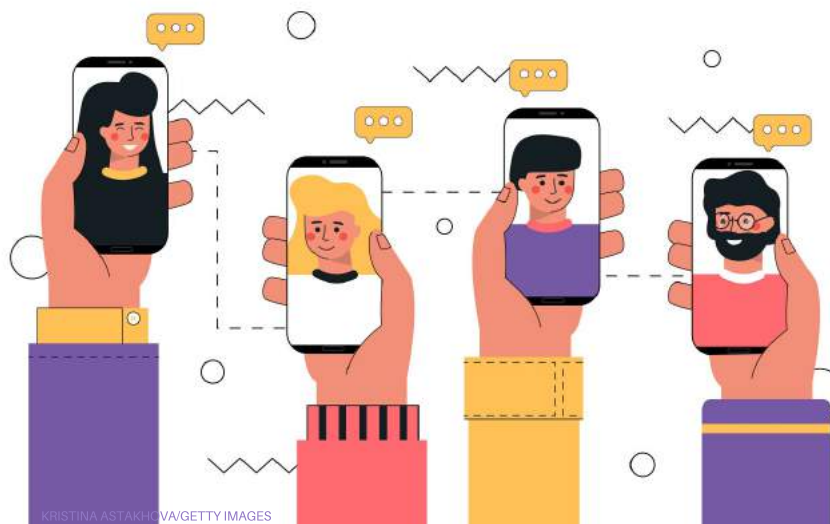
geneticists. They found that social isolation is an environmental situation, and of the individuals falling in the highest 25% of self-reported social isolation, only half also fell into the highest 25% of self-reported loneliness (Matthews et al. 2015).

SNS can worsen loneliness

One study which received attention from American news outlets found that young adults (aged 19-32 years) who use social media at a high frequency tend to feel lonelier. Participants in the highest 25% of SMU frequency, opening SNS 58 or more times a week, were over three times likelier to experience high PSI than those who visit SNS under nine times per week (Primack et al. 2017). What are the possible mechanisms by which SMU can lead to loneliness?

Bullying

Bullying and harassment can carry from school to the internet, creating a negative SMU experience. This can cause isolation and loneliness, especially for adolescents without a confidant or kids who are ignored by adults when they report harassment.

In 2017, a family sued the Yucaipa-Calimesa Joint Unified School District for failing to take action against their daughter's harassers, a major event in the snowballing K-12 bullying concerns which led the California state government to pass AB-34 in 2019. On top of California's existing Bullying Prevention Days and increasingly specific definitions of malicious SMU over the years, AB-34 requires that school district sites include visible links to cyberbullying-related resources and information for students and parents ("Pupils," 2019).

In the past decade, most U.S. states have also developed more guidelines on cyberbullying regulations to ensure that their students feel safe and supported, rather than isolated and ignored. However, cyberbullying is still under-reported.

Negativity bias

We can receive many positive comments on photos and get fleeting excitement, but one rude comment sticks with us for the next few weeks—this is the negativity bias. Our brains process experiences with positive-negative asymmetry, and bad experiences linger in our memory longer. We assess situations on a positive-negative spectrum, with positive experiences signifying positive valence. Brain studies show the amygdala and parts of the insular cortex, which is implicated in valence evaluations, are more reactive to negative stimuli (Vaish, Grossman, & Woodward, 2008).

It's possible that negativity bias is an evolutionary development that helps us detect and remember threats more clearly. Social media is another place for us to receive criticism and negativity; just one or two negative comments make us forget the supportive statements. Then we feel silly for letting one comment bother us and might not mention it to our friends, so we feel like we're experiencing this alone.

Correspondence bias

The immense popularity of visual platforms—especially YouTube and Instagram—makes sense since our brains respond most actively to visual information. Our natural attraction to visual stimulation leads to a second cognitive bias called the correspondence bias. This occurs when we see brief moments of others' behavior as stable personality traits, rather than recognizing temporary situational factors (Underwood & Ehrenreich, 2017, p. 12).

There are multitudes of Instagram accounts saturated with someone's beautiful, fun pictures of vacations, parties, and days spent surrounded by family and friends. In reality, this series of photos might have been taken during two of three special events, or one vacation from months ago. Additionally, we tend to showcase these highlights—

LIN SHAO-HUA

COSMAA/SHUTTERSTOCK

few people will post pictures about their everyday life if nothing exciting is happening. Against better judgment, we tend to perceive these images as a full representation of the user's life at all times, mistakenly corresponding their smiling faces to constant social interaction and joy.

Upward social comparison

Seeing someone's snapshot of what seems like a fantastic life full of constant social outings, paired with hundreds or thousands of people expressing their approval of such an image (via likes and comments), can lead to upward social comparison.

When we scroll through our phones, we're usually killing time while eating, waiting for class to start, or maybe before going to sleep. When we see others' beautiful images in comparison to ourselves at that current moment—not doing anything particularly interesting, which is why most of us pick up our phones in the first place—then it's likely we'll feel less satisfied and appraise our own lives more negatively. For images of social gatherings in particular, we may feel unsatisfied with our own social lives—am I being social enough? Is it bad that I don't have this many photos with my friends?—thus increasing our loneliness.

A loop of factors

SMU is both an outcome and a cause of behavior. Research has suggested that people who already feel lonely or depressed may subsequently turn to higher internet and social media use (Primack et al. 2017). This research can call into question the assertion that SMU causes us to be lonely, but again, because this varies for each person, we can take this as further proof that there is no one clear answer. Loneliness can feed into SMU and vice versa, as long as we don't have protective factors in place to protect us from the negative outcomes of excessive SMU and feelings of loneliness.

Taking a step back

We've reviewed naturally-occurring psychological habits that may cause us to feel lonelier by using social media. We can't tell other people to stop posting their best moments, and it'll be hard for the government to regulate businesses and interpersonal SNS communications which could lead to users feeling lonely or addicted to social media—especially with the ever-evolving forms of connection presented online. But lastly and perhaps most importantly is the fact that we only have 24 hours in a day.

One of the key ways social media use induces loneliness is by eating into time we could've spent fostering connections in person. Even beyond face-to-face socializing, social media's addictive design can capture our attention and remove time spent engaging in important activities like exercise, daydreaming, sleeping, socializing, and reading (Underwood & Ehrenreich, 2017).

As shown by our character Naya, social media addiction can feed into the loneliness we feel once the computer is off. We can work on changing our personal views and exchange time spent scrolling for healthier activities, ultimately increasing our own life satisfaction. The first step is knowing how to identify when your social media use becomes unhealthily excessive. ◈

Welcome to my Page

🎓 Studies at Saint Mary's

🕐 Joined June 2018

Time on Facebook

We've noticed your daily usage has been up over 303% over the past week. How about getting up and moving?

9hrs

S M T W R F S

Recommendations for health professionals from Facebook+ Care Team.

To learn more, visit www.facebook.com/care/how-to-manage-social-media-usage

English (US)· Español · Português (Brasil) · Français (France) · Deutsch

---

Christine Santana
November 2, 2019 · 👥

See son, I told you social media addiction was a thing!! Look at the article! Dad and I might have to take away your iPhone if you can't control yourself. Love you honey <3

socialmediaaddict.com
Addicted to Facebook?? Read GLUED   Learn More

👍😮❤️ Naomi Whitefield and 2 others   1 Comment

> **Justin Santana** I know mom haha. Can we talk about this later though? I'm going to delete this from my wall.
> Like · Reply · Share · November 2

Naomi Whitefield
November 10, 2019 · 👥

I miss you babe. Stop playing Call of Duty and answer my FaceTime!

👍😮❤️ Justin Santana and 3 others   4 Comment

> **Taylor Knotts** don't be whipped bro.
> Like · Reply · Share · November 10

> **Justin Santana** in a bit haha. Check your texts.
> Like · Reply · Share · November 10

> **Hilary Simon** HAHA i told you he was gaming. Get off before she breaks up with you loser xD
> Like · Reply · Share · November 10

> **Taylor Knotts** you're so whipped LMAO
> Like · Reply · Share · November 10

Justin Santana
November 14, 2019 · 👥

everyone should make a twitter and follow me on there. My profile is @justinsantana24. Facebook is getting boring and it's for old people anyways haha. Tweet me :)

👍😮❤️ Andy Wall and 2 others

Supreme

Justin Santana
November 14, 2019 · 👥

i made a TikTok lmaoo come and check out mine and @AnthonyParkBeast new video. We did a dance video… but social distancing of course

👍😮❤️ Andy Wall and 2 others

Justin Santana
November 14, 2019 · 👥

snapchat me please @justinsexysmiles i'm hella bored lol

👍😮❤️ Charlie Okudah and 1 other   2 Comment

> **Andy Wall** bro you gotta chill. You literally made like 3 accounts in 10 minutes. Your gonna forget all your passwords lmao
> Like · Reply · Share · November 14

> **Charlie Okudah** you did the same thing Andy you hypocrite
> Like · Reply · Share · November 14

Justin Santana
November 14, 2019 · 👥

i'm going to start vlogging about a day in my life. Check out my new upload on YouTube @justinvlogs

👍😮❤️ Charlie Okudah and 5 others

Justin Santana
November 14, 2019 · 👥

yo @Anthony Park and I have been popping off on Call of Duty. We're going to start streaming on twitch every other day @ 7 P.M. Come hang and watch us get some nasty headshots! twitch.com/justinsnipes

👍😮❤️ Anthony Park and 9 others

Justin Santana
December 20, 2019 · 👥

sorry i've been mia. My parents took my iPhone away for a month because I was "addicted." such bs. Lmao but i feel better and i missed y'all

👍😮❤️ Anthony Park and 12 others   3 Comment

> **Naomi Whitefield** we're done. you left me on read for a month… youre trash
> Like · Reply · Share · December 20

> **Anthony Park** thank god. Update your call of duty and let's play.
> Like · Reply · Share · December 20

> **Christine Santana** don't forget we can see your post. Delete this and come downstairs. Dad wants to talk to you.
> Like · Reply · Share · December 20

Exploring New Platforms

After the fall semester comes to an abrupt end due to COVID-19, St. Mary's has switched to an online format through Zoom. Whether it's simultaneously streaming season 3 of Breaking Bad during his Zoom calls or turning off his camera to play Call of Duty, school has never been easier for Justin. Although finding a place in the social hierarchy among the Knights was difficult, he managed to find his niche. There was less bullying about his father's prison sentence. Naomi admitted to having a crush on him. And most importantly… he felt a sense of belonging. But with social distancing orders in place, he finds himself on social media more than ever, just to foster his new relationships. If social media is designed to connect individuals in an instant, why does accumulating time on social media make Justin feel more isolated and lonely? To look into the matter, look on pg.21 for more about social media usage and its downstream effect on loneliness and social isolation. Will making more social media accounts help with his recurring feelings of loneliness?

naya is: struggling

@ayan.txt

original (beginner) art + stickers - pls don't repost my art!
she/her/hers

USA

TWEETS	FOLLOWING	FOLLOWERS
402	574	19.4k

Following

Tweets   Tweets and replies

March 1, 2020

i'm trying to bond with my little sister so i gave her my ipad and she just deleted four of my sketches T_T but thank goodness she didn't delete this:

311   4k   9.9k   •••

March 3, 2020

does anybody have volunteering opportunities to recommend? Open to anything involving other humans :)

34   23   198   •••

naya is: struggling @ayan.txt • March 3, 2020
Replying to @ayan.txt

for anybody wondering: yes, it's because this was recommended by the advice columnist. Volunteering is good for the soul and the community🤟🏽

2   23   45   •••

March 15, 2020

paint night!

87   981   3.3k   •••

March 30, 2020

 i haven't announced where i'm going to school yet, but i think it's time... can anyone guess based on the new stickers in my shop? #collegebound 💛💙🐻

↩ 454   ⇄ 873   ★ 3k   ...

Que @quedocs • March 30, 2020
Replying to @ayan.txt

CONGRATULATIONS BABY BRUIN! 🐻WELCOME WELCOME I CAN'T WAIT TO GIVE YOU A TOUR

↩ 2   ⇄ 24   ★ 98   ...

cc @cc_jpg • March 31, 2020
Replying to @ayan.txt

#1 school in the nation?? congratulations naya!!!

↩ 9   ⇄ 11   ★ 100   ...

April 29, 2020

AP exam studying starts now :(but my shop is open and my siblings are helping me ship out orders every night! Thanks for the support <3

↩ 3   ⇄ 45   ★ 54   ...

May 22, 2020

I'M DONE WITH SENIOR YEAR! I also wrote an article for the yearbook about social media... check it out :)

Free iPad GIVEAWAY w/ 2 year ProCreate Subscription!
Art Contest voting open until August 31st! Don't miss out!

↩ 21   ⇄ 108   ★ 342   ...

May 29, 2020

is facebook a necessity for college students?

↩ 100   ⇄ 9   ★ 150   ...

May 30, 2020

everyone said yes to FB and ucla's meme page is hilarious. This is true campus culture orientation

interesting fact of the day

the average ucla student swallows 50 de neve late night chicken tenders in their sleep every night

Kyle Pagdayunan
December 4, 2016
When you're walking down Bruin Plaza and you hear "SCUSE ME BOSS MAN CAN I ASK YOU A QUESTION"

Ignoring and avoiding eye contact with people handing out flyers

Using the bike-parking path to avoid the slightest chance of being handed a flyer

Missing all lectures and discussions to avoid Bruinwalk entirely

↩ 15   ⇄ 9   ★ 32   ...

Since New Year's Day, Naya has been distancing herself from social media. She still keeps up her small online business and interacts with a couple of fellow internet-based young artists she's become friends with over the past five months, but she doesn't spend nearly as much time trying to interact with new people or trying to imitate others' art styles. After all, she only started this as a hobby and although the extra income is nice, Naya doesn't depend on this money.

She also successfully shakes the feeling that she must aggressively extend her audience, overcoming her preoccupation with numbers of Likes, Followers, and Retweets. She's overcome her need for external approval from strangers and even peers online. After learning about upward social comparison and digital stress, she's even warier about displaying pictures of her social life online, knowing that it could contribute to someone else's loneliness.

Naya also realizes that after removing the Twitter component, art is a social bonding activity that can be shared with others. Instead of excluding her family and hometown friends from her creative world, she brings them into it. She has paint nights with her friends and spends time with her little sister, who loves playing with her iPad.

She plans to spend her summer with friends and working on her relationship with her family, making more art (and more pocket money for college), and--as recommended by the magazine columnist--volunteering as an artist at the local hospice care center.

Search
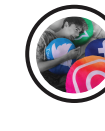
nellyrichards Edit Profile ⚙

7 posts   22.1K followers   1,943 following

Nelly Richards
📍 LA - PUBLIC FIGURE - DM ME FOR INQUIRIES📲

⊞ POSTS   🔖 SAVED   👤 TAGGED

nellyrichards

KOTD 👟

Bami Aleshe
bamialeshe

yea man.

KOTD 👟

Dope kicks man! You remember when we always used to go to the mall after school and just window shop?! 😭😭

Yooo Nelly! How's USC?

Aye bro, just checking up on you. I see you living your best life in California, man! Call me one of these days, it's been a minute!

Nelly, me and the guys are worried about you bro. at least respond so I know youre okkk :/
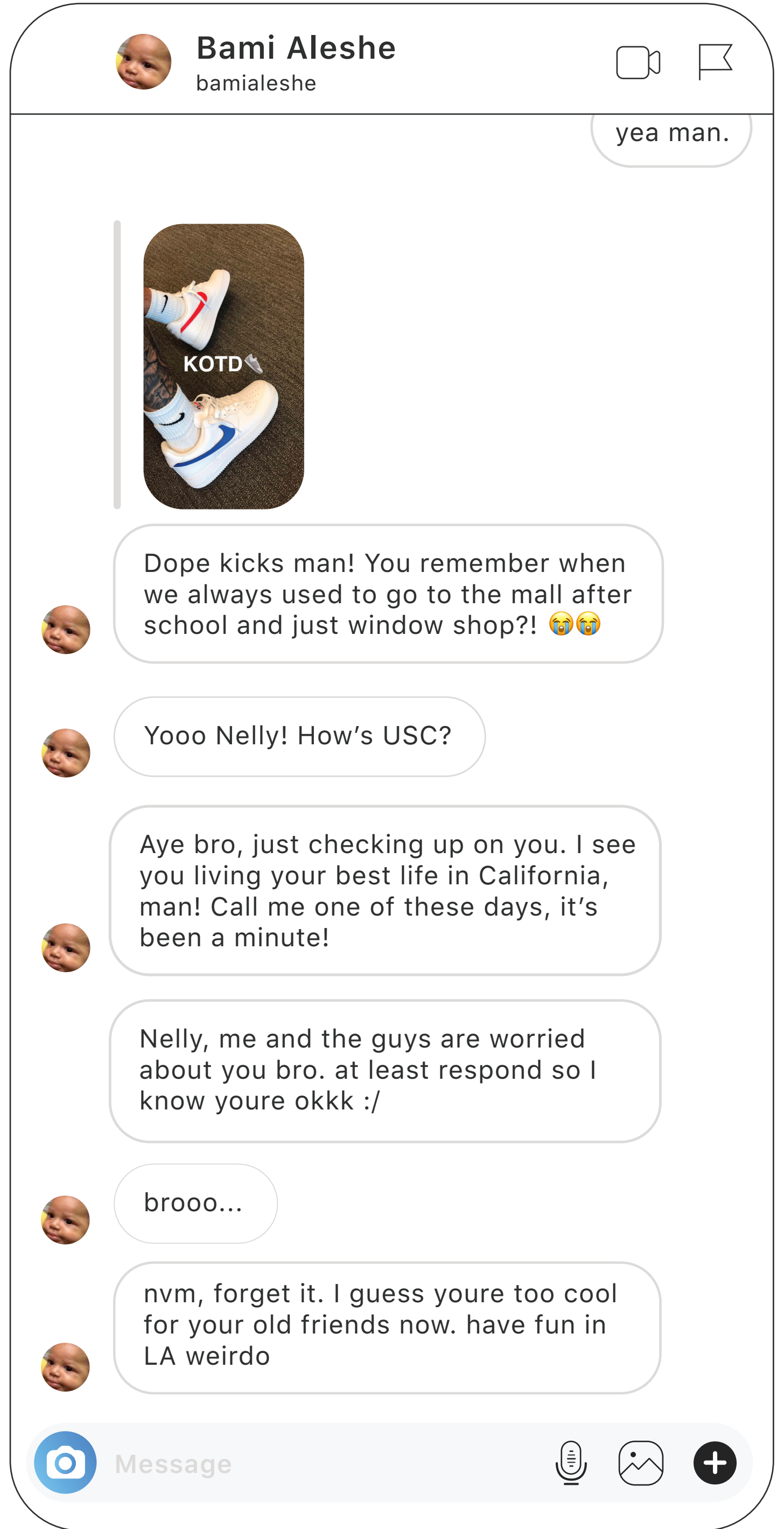
brooo...

nvm, forget it. I guess youre too cool for your old friends now. have fun in LA weirdo

Send Message

Message

Public Figure

Only a month left before the end of Nelly's freshman year and it can go without a doubt that creating an Instagram has changed his overall outlook on life. Instead of valuing quality time with his friends, Nelly is easily distracted by notifications (and even believing his phone went off when it did not). Rather than enjoying the moment during an excursion off campus, Nelly makes the extra effort to take a picture with the intention of ensuring that his followers are aware of his outings. Nelly continually refreshes his timeline and post viewers, keeping track of the numbers associated with his activity. He becomes obsessed with his self-image. Nelly justifies his behavior, telling his friends that "it's like a game". His friends, who are equally as addicted to social media as him, see nothing wrong in their attitudes toward Instagram. After a day out with his new "friends", Nelly comes back to his dorm feeling sad and alone. Although his follower count is large, he feels isolated once he puts his phone down. With his old friends out of his life and his new friends only present when it leads to tagged posts, Nelly has no support system in real life. He masks his depression with fake smiles for the camera and the thousands of followers he posts it for. The high he gets when a post of his does well on Instagram yields only temporary satisfaction. Whenever Nelly posts a picture of himself and it does not receive the amount of likes he expects, he will delete it. After his first year of college, Nelly decides that he does not need school to be a public figure and withdrawals his enrollment at USC.

EFFECTS MAY VARY

By Alison Ly

WHILE THERE'S MUCH concern about young people being addicted to social media, it really has varying effects. Negative effects can be more pronounced for certain ages and personality types, both of which can influence intentions and methods of social media use (SMU).

Visual platforms

Effects of SMU can vary by which platform is used. The human brain has substantially stronger capacity to recall and process pictures than words (Grady et al. 1998). Thus, reading a 140-character Tweet or a blog post about someone having a fun day usually won't stimulate social comparison as intensely as actual video or photo evidence or their day.

Besides being addictive, the visual basis of platforms like Instagram can amplify upward social comparison: comparing yourself to those who appear to be better off. Instagram's hyper-visual nature is paired with quantifiable signs of approval: comments and likes. Seeing someone's snapshot of what seems like a fantastic life full of constant social outings, paired with the thousands of people expressing their approval of such an image, can lead to upward social comparison and feeling lonely. If you're seeing these beautiful images in relation to yourself at that current moment—not doing anything particularly interesting, maybe waiting for class or waiting in line at the store, which is why you decided to pick up your phone in the first place —then you may feel less satisfied with your own life (Nesi et al. 2018).

Age matters

SMU's effects also vary by age, even in the narrow time frame of the teen years.

A survey of over 10,000 European adolescents (14 to 18 years old) found that younger teens with heavy SMU had more pronounced negative internalizing effects than older teens with heavy SMU (Tsitsika et al. 2014). Authors attributed this to better-developed social skills and secure friend groups towards the end of high school. While the prefrontal cortex—the part of the brain associated with intricate social cognition, or social skills—isn't fully developed until the mid-twenties, it definitely is more mature in an 18-year-old than in a teenager who's just left middle school.

Not only are older teens' brains physiologically more developed, but they usually have more finely-tuned social cognition due to a few extra years of social interaction. These few years allow us to experience ups and downs in relationships and self-esteem, which hopefully increases our empathy towards others, allows for more self-reflection, and solidifies healthy relationships with a close social circle. In other words, those in their late teens are (hopefully) more mature than those entering their teenage years, and they better understand the reality that not everyone has a fantastic life all the time—which is typically how we portray ourselves on social networking sites. Thus, older teens aren't as negatively affected by social media, and their self-esteem won't suffer as badly because of it.

Neurotic vs. Extroverted

In psychology, the Big Five personality traits include agreeability, conscientiousness, openness, extraversion, and neuroticism. The most extreme case of differentiating SMU by personality trait is identified in the last two traits, neuroticism vs. extraversion. Neuroticism is associated with negative emotions—anger, depression, anxiety, irritability—and poor emotional stability, which can lead to poor social outcomes. On the other hand, extraversion entails being talkative and expressive, finding pleasure in socializing with others, being more prone to boredom when left alone.

Teens and young adults who score higher on neuroticism mainly report using social media to follow and monitor others, and display a fear of not being accepted by the wide audience on such platforms. In the early 2010s, this behavior of scrolling without interaction was commonly called "lurking." Those with extraverted personalities have various motives for SMU, particularly dating, social recognition, and making new friendships (Pertegal et al. 2019). Highly extraverted people may frequently add to their Stories or make more posts. There are two hypotheses to consider here. The social compensation hypothesis argues that online communications can benefit someone who's lonely and less sociable offline—their digital activity compensates for a lack of real-life interaction, providing a more comfortable, less-visible platform by which they can control their image without immediate social risks or pressure. The social enhancement hypothesis is the exact opposite, arguing that those who are popular in real life will benefit the most from online communications (Nesi et al. 2018). The previously presented neuroticism vs. extraversion findings match the latter hypothesis, social enhancement.

Extraverts seek external gratification in the form of positive social interactions, hence their outgoing, enthusiastic personalities. With the advent of social networking sites, you can command peer attention by pressing a few buttons, whether you're posting your own photos, commenting on others', or Tweeting something funny that's bound to attract some replies. This can be an extravert's playing ground in times they're not physically spending time with friends.

Even though we usually use the term "attention seeker" negatively, seeking attention isn't necessarily a bad thing. We're humans whose brains are built around companionship—we all need attention to some degree, and while the degree varies, this isn't an inherently "bad" trait. However, it can be damaging when your self-worth depends more and more on your posts' like and view counts, or comments of praise from others.

Again, this depends on your own self-worth and perceived social standing. And of course, if your job depends on social media popularity, then these numbers are important for income.

We might think the likelihood of upward social comparison may be more strongly linked to neurotic behaviors—following and monitoring others without interacting. However, no matter how capable we may be in real-life social situations—even if you're an extreme extravert—we are still vulnerable to self-comparison.

Overall, it's safe to say that the less you pay attention to others' business, the more realistically you can evaluate yourself in relation to others, and stop putting picture-perfect peers and social media stars on a pedestal. Along the same vein, the better you can focus on your own health and self-development, the less negative impact SMU will have on you. While SMU's effects may vary, remember that our social perception can also grow, serving as a protective factor against counterproductive social comparisons. ◈

ANON ASK:

Practical considerations to feeling less lonely

TWO STUDENT READERS asked me how to deal with loneliness. Both noted in that they spend large amounts of time on social media, but no details were given on whether they experience social anxiety.

There are four possible methods to decrease chronic loneliness, said the father of social neuroscience and late pioneer of loneliness research, **John Cacioppo**.

The first (*and maybe worst*) recommendation is **developing social skills**. I'm sure you already have those. Cacioppo himself argued that everybody is inherently good at socializing; loneliness and past negative experiences simply bury these skills (Adams, 2016).

Moving on: **social engagement**. I know this isn't what you wrote me to hear. Social isolation and loneliness are not equivalent: simply being around people doesn't cure loneliness. However, if you've been using social media to replace real-life interaction, start spending more in-person quality time with friends and/or family. 1,000 likes on your Instagram post won't stave off long-term loneliness.

Additionally, researchers have found that **poor family connection** is a major predictor of loneliness in adolescence, despite high or low digital communication with friends (Favotto et al., 2018). So if you're in place where you could spend more meaningful time with your family (or a select few members), then do so.

Cacioppo's third treatment is **social support**. "Support" implies that you depend more on others in a more or less one-way relationship. If you feel bad about being a "burden", please know that this is a harmful mindset and it's important to seek supportive confidants. If you haven't reached out to loved ones or spent time with them, I highly suggest this. So we're left with Cacioppo's last suggestion, the most effective one: **focusing on reciprocity and changing how we perceive our relationships.** Fulfilling, two-way interactions combat loneliness. If we can help others while receiving support from them, we gain purpose instead of feeling like the weak point in a relationship. **Reciprocity** can involve acts of service, or even reading others' communication cues and matching tone, posture, and eye contact. If our guard is up because we've been feeling lonely, we have to let it down to effectively overcome loneliness. *And this is much more fulfilling in person than online*.

Try **volunteering**. And do it out in the community, so there's less pressure of peer judgement. It helps you connect with others outside the bubble of school and SNS. This actually works. The UK's Inspiring Futures: *Volunteering for Well-being* program provided training and volunteering opportunities to economically disadvantaged and socially isolated people of all ages. Participants reported improved life satisfaction, confidence in their skills, and sense of belonging.

European doctors have even started **social prescribing** (which I'm doing here)—referring their patients to community activities to improve well-being—after realizing how effective volunteering and new group activities are for combating loneliness.

Lastly, I strongly suggest you **"Mute" posts/ stories** from people who constantly post about their envy-worthy fun lives. It'll do wonders for reducing upward social comparison! SNS companies don't protect us by default, but there are features that we can use to control SMU's negative impacts. ◈

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