Mesmerized

The relationship between technology use
and social interaction

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THANK YOU

In 1973, Julie's parents, John and Diane, boarded a Pan Am flight in Seoul, South Korea, to chase the American Dream. Despite being college graduates, John and Diane found their degrees useless in their new home. Relegated to low skill labor but determined to succeed in the US, they took whatever jobs they could find. Diane found work in an eyelash factory, where she toiled away gluing false eyelashes into plastic cases. It didn't take long for John and Diane to become business owners, taking over a Jewish deli on Mott Avenue in Far Rockaway, New York. Their first daughter, Arlene, was born in 1973. Five years later, Julie came along.

Although they had established roots in Far Rockaway, John and Diane soon decided they had had enough of the bitter east coast winters. They packed all of their belongings into a rusty gold Oldsmobile sedan, sold the deli, and drove across the country to Southern California. They landed in Cerritos, a burgeoning suburb of Los Angeles, where Julie spent her childhood running through sprinklers, playing on her swing set, and staring at the Azure sky while sucking on the juicy arils of the pomegranates growing on a tree in her backyard. She loved reading and writing. She devoured the The Babysitter Club books and journaled furiously.

When she was eleven, her parents, like so many other Korean immigrants of the time, bought a liquor store in San Pedro, and hoping to instill in their daughter a strong work ethic, they insisted that Julie work there alongside them on the weekends. Neither her parents nor Julie knew it at the time, but those days at the liquor store, and the people with whom she interacted there, would mold her into a sociologist, even before she knew what sociology was.

For the next decade, Julie spent her Saturdays and Sundays selling beer, cigarettes, soda, chips, pigs feet, and extra-large pickles to customers of Mundo's in San Pedro. Among those customers were homeless people, some who had enough money to buy a bottle of cognac, and others who had just a handful of change with which to buy a "loosie." She befriended families who walked from the projects to buy a gallon of milk, canned foods, and a loaf of bread every Sunday morning. Eager to learn more about the store's other employees- Sara, Miguel, Juan, Gerald- Julie would ask them about their lives, horse around with them, and lend them whatever help she could.

Those experiences contrasted sharply with her middle-class existence on the weekdays, where her days consisted of school, then tutoring, then hanging out at the library or, if she was lucky, the mall. The juxtaposition of the two worlds profoundly influenced Julie's world view. Working at the liquor store gave her a glimpse of urban poverty, disinvestment, race relations, and community organization to which few of her peers were privy. She grew interested in racism and structural inequality, but it was

not until college that she would learn the skills and vocabulary to deeply explore and articulate those interests.

Julie started off at Cerritos College, where her first semester was, to put it mildly, a debacle: she failed nearly all of her classes. Spending time with her boyfriend was vastly more interesting than attending class. She did, however, do marginally well in a sociology class, mostly because she was inspired by her professor, Jackie Troup. Professor Troup helped Julie realize her strengths as a student- and the value of attending class. By her second semester, Julie got her act together, and not long after, she transferred to UC Irvine, where she majored in Sociology and English.

Julie continued her graduate education in 2001 at UC Irvine, where her research interests included immigration, assimilation, and religion. Her dissertation focused on how the children of Korean immigrants use religion to assimilate into American life. As Julie was finishing her doctorate, she waded into the job market and, in 2008, was hired as a full-time professor at Chaffey College, a fortuitous development, coming just before the economic recession that would leave few, if any, academic jobs open for the next four years. And Julie had always wanted to come back to community college, hoping to change lives in the same way that Jackie Troup had transformed hers. She felt, and still feels, incredibly fortunate to have landed her dream job. For over a decade, Julie has been an active member of the Chaffey family, teaching her full load, advising the former Feminist Club, CCFem, organizing and participating in various panels, and running the Honors Program.

In 2015, Julie's life was irrevocably altered, in the best possible way, by a six-pound bundle of alien-looking joy: her son, Benjamin James Scharf. As is motherhood's wont, it has transformed Julie in myriad ways. She has learned to be more patient, efficient, loving, and resilient. But mostly Benji has taught her to slow down, to let the moments- some special, many more mundane- really sink in. Getting older has a tendency to make you feel as if everything is going by so quickly; having a child only amplifies that sense.

A year and a half after Benji's birth, Julie was diagnosed with stage three thyroid cancer, which invaded lymph nodes in her neck, her trachea, and her vocal cord. She had two surgeries to remove the infected tissues, including a portion of her trachea and laryngeal nerve, which controls her voicebox, limiting her voice to a loud whisper. The loss of her former voice inspired Julie to focus on writing, and in 2018, she crossed "writing my own textbook" off her bucket list. Aside from that form of self-torture, Julie enjoys kickboxing and running, successfully completing many half-marathons prior to the birth of her son. She also loves to read, garden, and cook.

"For any democracy, information is an essential resource. Without basic knowledge about the government, and how it works, and who runs it, people simply tune out... Democracy requires leaders and, hopefully, the populace to discuss ideas and policies affecting society. But deliberative, thoughtful discussion requires knowledge and informed discussants" (Hill and Hughes, 1998, p. 350).

Introduction

I was recently at dinner with my parents, husband, and toddler at a swanky dining establishment known as The Cheesecake Factory. We sat on the heated patio on a chilly Friday night in November. The restaurant was bustling. There were couples enjoying a date night, families welcoming the start of the weekend, and groups of friends celebrating birthdays. String lights twinkled above us; speakers filled the patio air with music. I looked around and noticed something I never saw as a child, and now always see: *nearly everyone around me was looking into or fiddling with some mobile device*. A family of four were all staring intently into their screens. Two people- presumably a romantic couple, based on their interaction- were each watching videos, separately, on their phones. A baby in a high chair at the table next was watching a cartoon on an iPad. Of course, I noticed all of this only after I looked up from the glow of my own iPhone. For a bustling Friday night, the patio was oddly quiet: there just wasn't much conversation transpiring. Like many other experiences, that night at The Cheesecake Factory led me to the question that lies at

the heart of this paper: how do mobile devices affect our social interactions?

In the last two decades there has been an unprecedented spike in mobile device ownership. From 2011 to 2018 alone, the number of people who own smartphones (phones with more powerful hardware and software allowing for internet access, multimedia functionality, among other capabilities) more than doubled in the United States (Pew Research Center, 2018). Currently, approximately 95% of Americans own a cellular phone, and 77% own a smartphone. History provides few if any examples of such a powerful and exciting tool being adopted so quickly by so many. This paper examines some of the ways this widespread, rapid adoption of this relatively new technology affects our social interactions.

First, I will trace the data on access to the internet, and ownership of mobile devices over time. The data will also illuminate how people are using the devices, and how much time they are spending on their devices. Second, I will attempt to answer some of the following questions through a literature review and original research:

1. How do Americans utilize their smart devices to maintain social relationships?

2. How have smartphones impacted our communication patterns with our friends and families?

3. In what ways is mobile device usage affecting our society when it comes to social distance between social groups?

4. How does increased access to technology polarize social groups?

A few disclaimers: This paper seeks a balanced approach to understanding this social phenomenon, and does not intend to create a moral panic about the pervasive nature of technology use. Rather, it attempts to be objective about the nature of mobile devices in our lives, and how we can best use technology to

improve our society. Additionally, this paper centers on data and research that has been collected and conducted in the United States. This is not to say that the rest of the world does not matter. Other countries, like South Korea, have faster and more reliable internet connectivity and more advanced devices. However, given the time and budget constraints of this project, I have narrowed my scope to studying Americans. Finally, I am aware that "technology use," "mobile device use," and "smart phone use" are not synonymous. However, for the purposes of this paper, they will be used interchangeably.

Part One: Video Killed the Radio Star

For much of human history, communication and information sharing was a relatively slow process. Prior to Gutenberg's invention of the printing press in 1448, information was disseminated via speeches and hand-written messages. Important news would be conveyed by "town criers," who would clang a bell for the villagers to gather and listen. Messengers, both human and animal, would travel long distances to carry messages to adjacent towns and villages.

The invention of the printing press allowed more people to have access to information at a much quicker rate. As printed documents were disseminated, people adapted by learning how to read. However, this transition was slow. It took approximately 400 years – into the throes of industrialization—for the majority of the global population to become literate. The Organization for Economic Cooperation and Development (OECD), the World Bank, and the Central Intelligence Agency have been collecting data on global literacy rate over time. They estimate that in 1475, right around the birth of the printing press, literacy in the most developed countries ranged from 1% to 17%. The Netherlands had the highest literacy rate at the time, at 17%, followed by Italy at 15%. Sweden's literacy rate was approximately 1%. The chart below illustrates the rise in literacy rates in selected nations from 1475 to 1750.

Literacy rates in selected developed nations
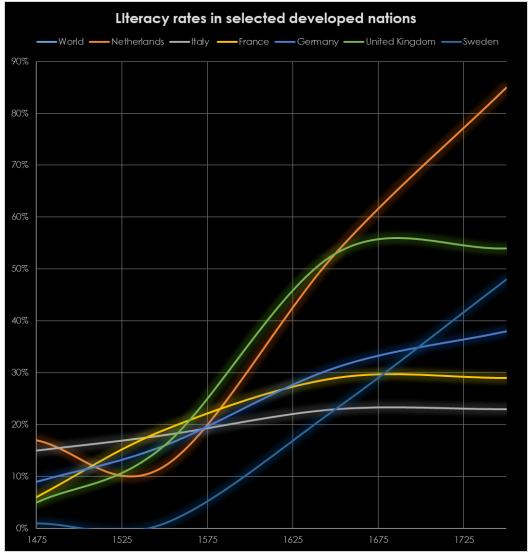
Data Source: The Organization for Economic Cooperation and Development (OECD), 2016

While literacy was on the rise in the developed world, literacy rates on a global scale lagged. By 1800, only about 12% of the global population was literate; it would be another century for this rate to double.

Global literacy rates 1800-2015
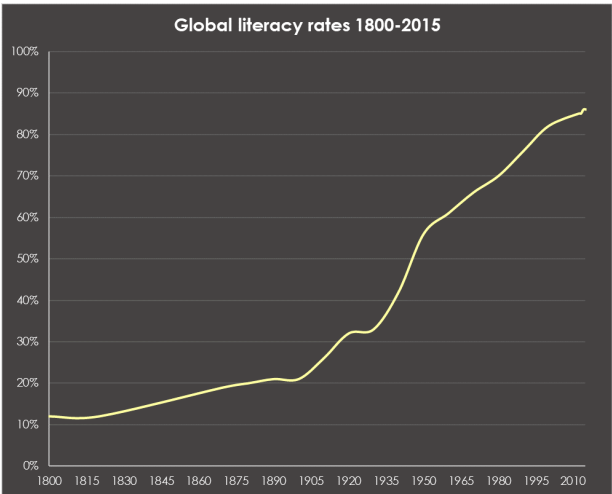
Data Source: The Organization for Economic Cooperation and Development (OECD), 2016

The formalization of education in the mid 1800's led to dramatic increases in literacy rates. By the mid-1900s, the majority of the global population was literate, so a mere 500 years after Gutenberg's invention, just over half of the world's population was able to take advantage of it. Within this time, however, several other inventions facilitated the rapid transmission of communication and information.

Antonio Meucci and Alexander Graham Bell invented the first telephones in the 1800s. And in the late-1800s, the work of Guglielmo Marconi and others led to the invention of the radio, the first electronic mass medium technology, introduced to the American public in the early 1900s. However, the federal government, concerned about the treacherous and traitorous ways civilians might use radios, imposed a ban on radio ownership in 1917. Two years later, when the government lifted the ban, leading to the Golden Age of Radio. By 1930, approximately 40% of Americans owned a radio, and just a decade later, that number had more than doubled to 83% (Census, 2019). Radio offered Americans relied on their radios for news and entertainment. Millions of Americans tuned into Franklin D. Roosevelt's Sunday evening "fireside chats," in which where the President he addressed the nation about economic, political, and social issues

But radio's heyday was about to be interrupted by an even brighter, more irresistible star. In the 1920s, the work of several inventors led to the first mechanical and electronic televisions, and within a decade, sets became available to consumers. In 1950, only 9% of American households owned a television; by 1978, only about 2% of American households didn't own at least one television (Sewell, 2013). In a single generation, television had replaced radio as the primary way Americans received news and entertainment. But, of course, yet another up-and-comer was lurking around the corner.

IBM 5150 released in 1981

Commodore PET in 1983

Personal computers entered the American landscape with the invention of MITS Altair 8800 in 1975. By the 1980's, International Business Machines (IBM) released the IBM 5150 and Apple released the Commodore PET. Computer ownership became increasingly normative among Americans. Similar to literacy rates, radio and television ownership rates, computer ownership followed a similar curve. The Census has been tracking computer ownership since 1984 when only 8% of Americans owned a computer. A decade later, that rate triple, and by 2003, it nearly octupled. According to the most recent Census figures, about 80% of Americans have at least one computer in their home.
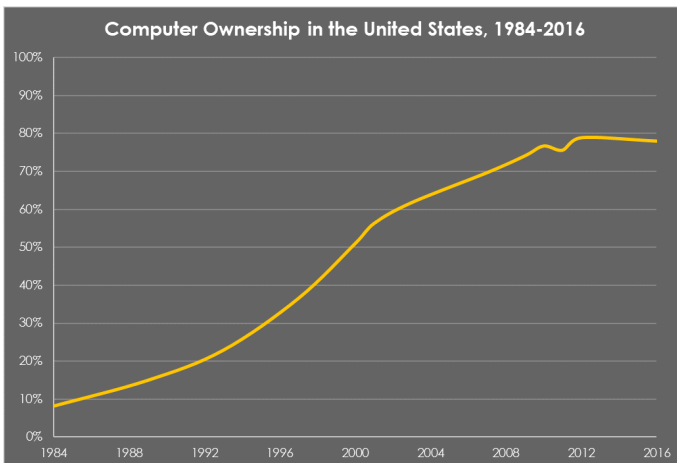

Data source: Census Bureau American Community Survey, 2018

High speed internet joined forces with personal computers in the early 21st century. Prior to 2000, most American households accessed the internet via dial up services such as America Online; broadband was not available. In less than two decades, the vast majority of Americans now have broadband.

Percent of Americans with high speed internet at home (2000-2017)
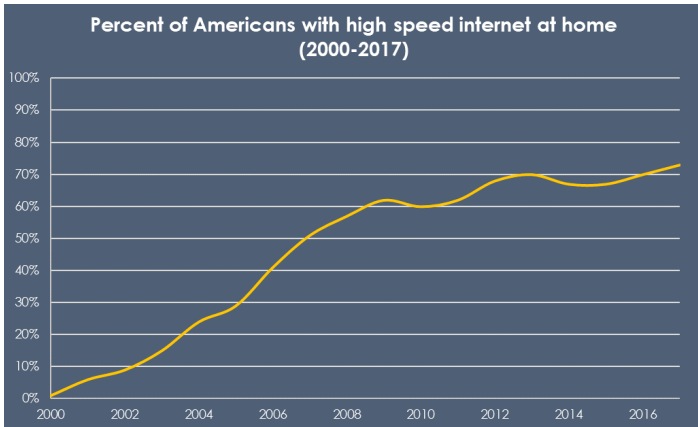
Data Source: Pew Research Center, 2019

Consequently, internet use has become common across all age groups, as illustrated on the next chart. Currently, virtually everyone under the age of 64 uses the internet in the United States.

Percent of American adults who use the internet, by age, 2000-2015
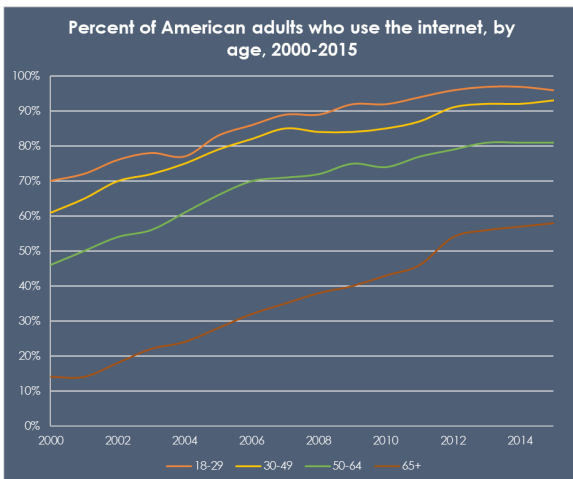
Data Source: Pew Research Center, 2019

Smartphones are the newest kids on the block, entering the mainstream in the last two decades. The first "smartphone" was Ericsson's R380, which allowed limited web browsing. Blackberries gained popularity in the early part of the 2000s, especially among white collar business professionals. It was not until 2007, when Apple released the first iPhone, that consumers started purchasing smartphones en masse for personal use. In 2010, only about one-third of Americans had a smartphone. In the last nine years, that number has grown to about 80%.
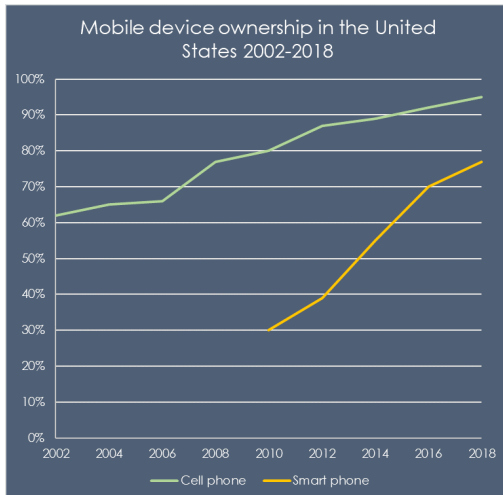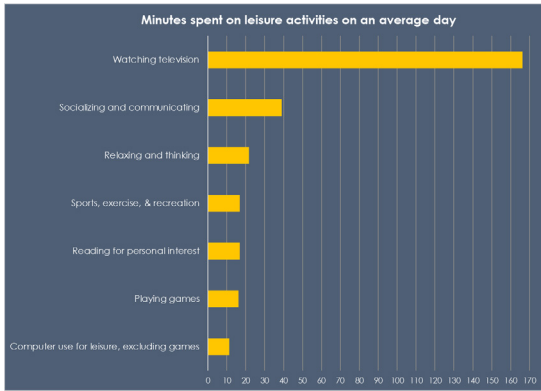

Data Source: Pew Research Center, 2019

Smartphones enable users to communicate via text messages, social media platforms such as Snapchat, twitter, Instagram, and Facebook, and yes, even make a phone call or two. They also allow users to stream videos, read articles, and surf the web. In essence, the smartphone packages nearly 400 years of entertainment, communication, and information sharing technology into a highly personalized, sleek device. This unparalleled access to such a powerful technology opens the

door for many questions about how much time people spend on their smartphones (and their portlier cousin, tablets). The next section will explore how much time we use on devices.

Part 2: Mesmerized

Increasingly, people are using their smartphones as the primary tool to communicate, retrieve information, and be entertained. In a recent survey, 68% of smartphone owners use their phones to follow the news, and 67% use their phones to share pictures, videos, and communicate with community members. 90% of smartphone users use their devices to get directions, and nearly 70% of smartphone users use their devices to do online banking and look up health conditions (Smith, 2015). 93% of Americans find their smartphones helpful, 72% find the devices helpful for connecting with others, and 80% of Americans say that smartphones are worth the cost. In fact, for many Americans, smartphones are like air and water: half of Americans say they **could not live without their smartphones** (Smith, 2015). Smartphones may even be replacing traditional broadband connections. Currently, 20% of American households do not have broadband internet at home, and instead opt to use their smartphone, a 12% increase from 2013 (Pew Research Center, 2018). It is fair to say that mobile devices are now an integral part of most Americans' lives. Exactly how much time are Americans spending on their devices? The research is mixed, but the short answer: a lot. Let's start by taking a look at how Americans generally spend their time on recreational activities.
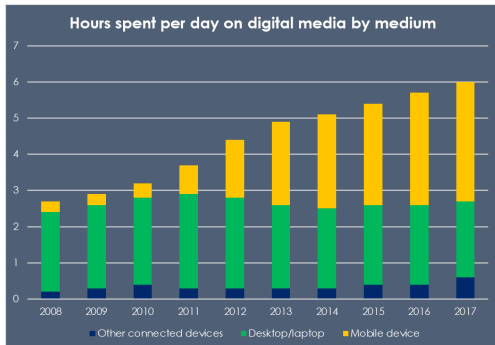
The Bureau of Labor Studies (BLS) surveys Americans about how they are spending their time. For the most part, three primary activities dominate our time: sleep, work, and "recreational," or "leisure time." The BLS further disaggregates each of these categories, and the chart below summarizes how Americans spend their recreational time.

Minutes spent on leisure activities on an average day

Watching television
Socializing and communicating
Relaxing and thinking
Sports, exercise, & recreation
Reading for personal interest
Playing games
Computer use for leisure, excluding games

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

Data source: U.S. Bureau of Labor Studies, American Time Use Survey 2017

Americans spend most of their leisure time watching television. Most Americans spend about 2 to 3 hours watching TV per day. Socializing and communicating ranks second, followed by playing games. It is important to note that we are increasingly using our mobile devices as the primary method of socializing and communicating. Thus, it is fair to say that the vast majority of our recreational time is spent on behind a screen, and this is a growing trend.

According to a recent longitudinal study on internet trends by Meeker, not only are American adults spending more time overall consuming digital media per day, but the time spent on mobile devices has increased substantially from 2008 to 2017. The chart below illustrates the number of hours spent on digital media by device over time.

Hours spent per day on digital media by medium

7
6
5
4
3
2
1
0

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

■ Other connected devices ■ Desktop/laptop ■ Mobile device

Source: Meeker, M. *Internet Trends,* 2018

15

Americans spent less than an hour on their mobile devices in 2008. In less than a decade, that figure shot up to over three hours. Other research confirms these findings. Adam Atler (2017) finds that Americans spend an average of 3 hours per day on screen time on mobile devices, and pick up their phones about 100 times per day.

What are we doing on our mobile devices? According to a Nielson study on mobile phone use, the top four applications used on iPhones, Androids, and Blackberries were:

- Facebook
- The Weather Channel
- Google Maps
- Pandora

In short, we are using our mobile devices to socialize, get information, listen to music, and navigate the roads. Humans aren't doing anything different than what we've been doing for millennia, but the mode of these activities has changed. Waze is the new Thomas Guide. Dallas Raines and Fritz Coleman have given way to The Weather Channel app. Few, if any, teenagers have ever seen a VHS cassette, or can imagine how much of a pain it was to fast forward to the good songs on a *real* mix tape. Older technology such as cassette tapes, walkmen, and VHS tapes are now quaint novelties, relics of the past. The makers of "React," a popular and amusing YouTube series has documented young Centennials attempting to operate older technology. In short, this generation has never known life without smart phones, tablets, and high-speed internet.

Increased screen time holds true across generations, and today's teenagers are no exception. Today's teenagers were born between the years 2000 to 2006. This generation is often referred to as Gen Z, Centennials, or the iGen. Smart, integrated technology has always been a part of their lives. These digital natives are used to living in a world where screens are everywhere, and information is accessible instantaneously. Centennials' access to technology

is ubiquitous. Recent research finds that 95% of teens aged 13-17 have access to a smart smartphone, a 22% increase from when the same survey was administered in 2015 (Pew Research Center 2018). While there are some differences in computer ownership based on gender, race, and social class (measured by household income and parents' education levels), nearly all groups of teenagers own a smartphone across the board, as illustrated in the chart below.
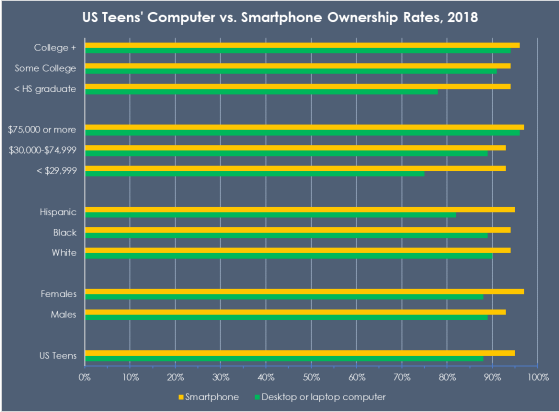

Data source: Pew Research Center, 2018

In the same survey, about half of the teens say they are online "almost constantly," a rate that has nearly doubled in three short years. The chart below illustrates today's teens' reports of online use.
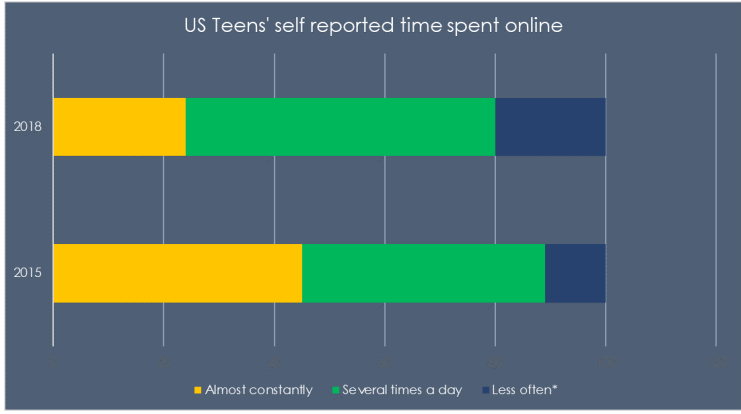
Data Source: Pew Research Center, 2018
*"Less often" refers to the following responses: "about once a day," "several times a week," and "less often."

So how are today's teens spending their time online? For the most part, today's Centennials use their smartphones for entertainment and communication. The most popular online platform among today's teens are, in descending order, YouTube, Instagram, and Snapchat. Unlike previous generations who spent hours on the telephone gossiping with friends, Centennials' preferred method of communicating is through texting and messaging through social media apps, such as snapchat and Instagram.

Monitoring the Future (MTF), a longitudinal study, surveyed over 5,000 high school students in 2017 about their mobile device usage. I aggregated their findings to examine just high school seniors (about half of the sample). For 10.1% of these seniors, texting friends and family was a full time job: they reported spending over 40 hours a week texting. Another 3.7% report spending over 30 hours a week texting their families and friends, while 12.2% spend less than 1 hour per week texting. It is important to note that this data is self-reported, and most research confirms that people *underreport* their mobile device use. Texting has replaced telephone calls as a mode of communication. The same survey asked the students "About how many hours a week do you spend talking on a cell phone?" 39.1% of students talk on the phone less than an hour a week, and about 4% talk on the phone for 30 or more hours per week. The chart below illustrates these findings.
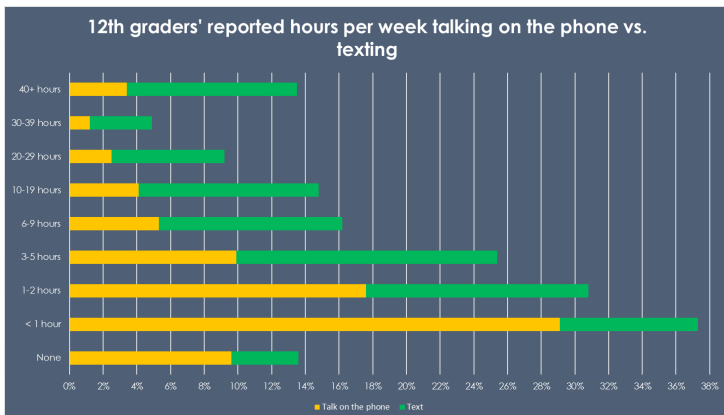
Data source: Monitoring the Future, 2017

Given the seemingly unavoidable use of mobile devices parents tend to be ambivalent about their children's exposure to screen time. On the one hand, screen time gives parents a much needed break in their day, allowing them a respite from the rigors of parenting. On the other hand the culture of intensive parenting, where parents are expected to constantly educate and communicate with their children, demands that children should have limited exposure to entertainment media. As such, some parents are concerned about the amount of screen time their children use, and attempt to limit the amount of screen time and mobile device use.

Lenhart et al (2010) find that 50% of parents set limits on when children can use a cell phone, and 64% monitor the content on the phone. Davies and Gentile (2012) find that parents with more children closer in age tend to be less restrictive with television viewing time. They also find that parents are more regimented about restricting screen time when their children are younger, and grow permissive over time. In spite of the limits, however, most children are still exposed to copious amounts of digital media. Rideout and Hamel (2006) find that preschoolers (ages 2 to 5) are exposed to about 2 hours of some screen media per day, including TV, movies, or videos, and they find that one-third of children between 6 months to 6 years have a television set in their bedroom.

Much of the research confirms that people are spending an unprecedented amount of time on their mobile devices. This is probably no surprise to any of us. Lecture halls that were once home of awkward small talk that could bloom into enduring friendships now consist of silent students scrolling through their phones. Family members in restaurants are often on their separate devices while sharing a meal together. But the larger question is… so what? What implications does the increased time spent on mobile devices have for social life? How are our social lives, measured by social interaction and civic engagement, being impacted by this seemingly unavoidable trend? The next section

will explore how our lived experiences are being impacted by technology use.

Part 3: Life in Technicolor

One of the ways we can unpack how technology affects social life is by interrogating how the introduction of mobile devices changed social interaction. Sociologists broadly use the term social interaction to refer to any communicative exchange between two or more individuals. Social interaction is the foundation of society. It is through interaction that people come to understand and construct the rules, norms, institutions, and systems of the society in which they live. Social interaction enables people to coexist harmoniously in society, through the exchange of ideas, information, and negotiating of rules. Moreover, our identities are constructed through social interaction. We come to understand who we are as individuals by interacting with others.

Social interaction occurs in several contexts which can be ranked ordered based on intimacy level. Face to face communication is the most intimate form of interaction. Members in the group are in physical proximity with one another, make eye contact, and may even physically touch other members. Telephone conversations are one removed, in that the physical presence may be missing, but voices are still heard. Electronic communication is the least intimate, given that words on a screen are disembodied from any human connection and context. Perhaps this is why people attempt to humanize electronic communication through the use of symbols such as smiley faces. The desire to personalize electronic interaction has birthed an entire industry of emojis (there are

currently 2,823 emojis in the Unicode Standard), bitmojis (a personalized avatar), and moving gifs that help inject life into text.

Given the influx of technology in our lives, it is worthwhile to examine how the increased use of electronic interaction shapes our social lives. Families are our most intimate social groups. Family members are the first people we come into contact with upon entering this world. They shape who we become, and we tend to spend the most amount of time with our families.

Social interaction in family life

Emerging research explores how technology can influence how families and couples interact with one another and the outside world. Hertlein's (2012) multi-theoretical model illustrates how environmental factors in technology can impact nearly all the rules, roles, and boundaries of romantic relationships and family life. Hertlein and Stevenson (2010) argue that the internet enables people to anonymously have access to information, people, and communities that were formerly inaccessible. Anonymity can help people reduce their social anxiety, accountability, and inhibitions, leading people to behave uncharacteristically (McKenna and Barch, 1994; Spears and Lea,1994). Access to the internet is changing the way we form relationships, define intimacy, and maintain relationships.

Additionally, families are having to redefine rules and boundaries about new issues related to internet use. How much information about the family should be shared online? What does the family consider private information? What are the consequences of oversharing information about the family? Do children need to consent to having their photos posted? What is my child accessing online? Who are these people my spouse is talking to on the internet? What social media outlets is my children engaging in? Boundaries that were previously firm become blurred. For instance, children now have relatively easy access to pornography, raising

questions about how to redefine these boundaries, and create new rules about accessing information.

Increased technology in the home also blurs the line between work and family life, causing family members to experience dissatisfaction. Chesley (2005) finds that increased mobile use affects family life due to work spillover. As more work finds itself way into our personal lives via email, conference calls, and mobile working patterns, people experience lower family relationship satisfaction, and increased levels of distress.


As family members incorporate technology into their daily lives, family dynamics may change. Members may feel more or less connected to one another based on how the technology is being used. Padilla et al. (2012) find that families can experience stronger feelings of connectivity based on the form of digital media used. Their study of 453 adolescents finds that families that watch TV or movies together, and play video games together experience the strongest feelings of connectivity. Social media use, on the other hand, led family members to feel disconnected from one another. The implication of this study is that using technology to share experiences leads to greater feelings of connectivity. Technology can be beneficial when people experience it simultaneously. On the other hand, when members are in the same room, scrolling through their Facebook, Instagram, or twitter feeds on their separate devices, they feel a greater sense of disconnect.

Furthermore, current research illustrates how technology is changing family life, but also highlights the importance of face-to-face, intimate communication as a cornerstone in relationship satisfaction. People crave face-to-face, intimate interactions with their family members. This point was confirmed by the original data I collected.

I conducted a brief survey about technological use and social interaction. The survey consisted of 19 questions. I asked the respondents' age, sex, highest level of education, and parents' highest level of education. Respondents were asked about the average time they spend on their smartphones, their preferred method of communication, and how they interact with others via text message and on social media. The survey was distributed electronically via email, and social media, and was completely voluntary. The majority of respondents were students at Chaffey College, and 73% were under the age of 22.

267 responses reveal that face-to-face communication is vastly preferred (65.2%) when communicating with family members. 21.6% of respondents prefer text messaging to communicate with family members, and telephone calls falls last at 13.3%. I then asked what the preferred method of communication was with close friends, and acquaintances, such as co-workers, and classmates. The chart below illustrates the preferred modes of communication in these contexts.
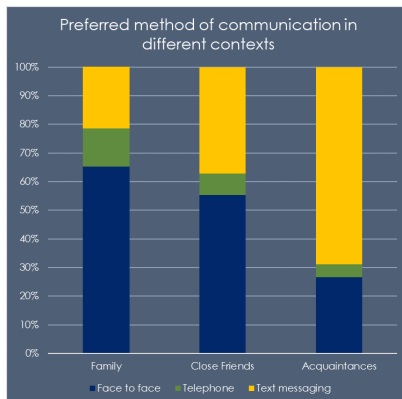
Data source: Song, J. (2019). *Technology Use Survey*

Unsurprisingly, the more distant the relationship, the less intimate the desired type of communication. People may want cozy, face-to-face conversations with their family and close friends that facilitates stronger bonds, but they overwhelmingly prefer text messaging with acquaintances.

Interestingly, telephone conversations seem to be the least preferred method of communication across all contexts. There appears to be a growing disdain for telephone conversations, at least according to the internet. People online describe phone calls as awkward, and torturous for introverts. As one person online laments, "Phone calls have primarily horrible traits. It is the absolute last form of communication I prefer. I'll learn and communicate with semaphores if it gets me out of phone calls" (Morris, 2017).

Tangent aside, it is safe to say that the way people prefer to communicate is guided by the nature of the relationship. We prefer face-to-face communication with the people closest to use—our family, while opting for more impersonal modes of communication—texting—with acquaintances. But does the method of communication shape our behavior? How are our attitudes, beliefs, and behaviors molded by the way we interact?

Technology, social interaction, and social distance

Research finds that the way in which we communicate can impact the quality of our relationships, our attitudes, and behaviors. For instance, electronic communication, namely e-mail, is the preferred way to communicate in the workplace. Email is beneficial to workers in that it offers asynchronous communication, flexibility, and increased productivity among employees working remotely (Higa, Sheng, Shin, and Figueredo, 2000). However, as email use increases, other forms of communication decrease, due to the reduction of informal interaction among colleagues. Moreover, employees report feeling less connected to co-workers as email use increases (Byron, 2008).

Face-to-face interaction can inspire people to behave differently. Davenport (2010) conducted an experiment in two Boston public housing developments with historically low voter turnout. Face to face canvassing intervention was utilized in one community, while no intervention was provided in the second community. Voter turnout was 18 points higher when the intervention was present. Research also finds that face-to-face interaction can shape peoples' attitudes. Holbrook, Green, and Krosnick (2003) find that in interviews, respondents in face-to-face interviews tend to be more cooperative, less hostile, and more engaged in interviews in contrast to telephone interviews.

Face-to-face interaction can reduce social distance between groups. The term social distance refers to the degree in which we accept or feel close to people from other social groups, such as social class, race, religion, or political affiliation. Sociologists measure social distance by measuring how people feel about other people from different backgrounds. The Bogardus Social Distance Scale, for instance, measures the degree of hostility, indifference, warmth or intimacy across group members. Respondents are asked a series of questions like this:

- Would you be willing to marry a member of this group?

- Would you be willing to have a member of this group as your close personal friend?

- Would you be willing to have a member of this group as your neighbor?

- Would you be willing to have a member of this group as your colleague at work?

- Would you be willing to have a member of this group as a citizen of your country?

- Would you be willing to have a member of this group visit your country as a non-citizen?

- Would you be willing to have a member of this group be excluded from associating with your country in any way?

The questions are listed from most intimate (marriage) to least intimate (having that person in the same country as you). Brockman and Kalla's (2016) experiment highlights the salience of face-to-face communication in reducing social distance between groups. They conducted an experiment that tested the effectiveness of canvassing in changing voter attitudes. Fifty-six canvassers had in-depth, substantive conversations with 501 voters about transgender rights in Miami. Brockman and Kalla found that the face-to-face interaction was effective in changing voters' minds about transgender issues for several months. Voters went from being unsupportive of transgender rights to either neutral or supportive. People that harbor animosity or hostility towards a particular group may experience a shift in feelings after interacting with an advocate for that group.

However, most people do not have intense conversation about sensitive issues on a regular basis. And as technology is ever present in our lives, we are more likely to increase the social distance between ourselves and members from different groups. With more people spending the bulk of their free time online, they are interacting with people who are already in their contact list. Very few people utilize technology to meet people they normally would not meet. I asked respondents how much they agreed with this statement: "I use my mobile device to meet people I normally would not meet." The bulk of my respondents disagreed or strongly disagreed with this statement.

Responses to "I use my mobile device to meet people I normally would not meet"
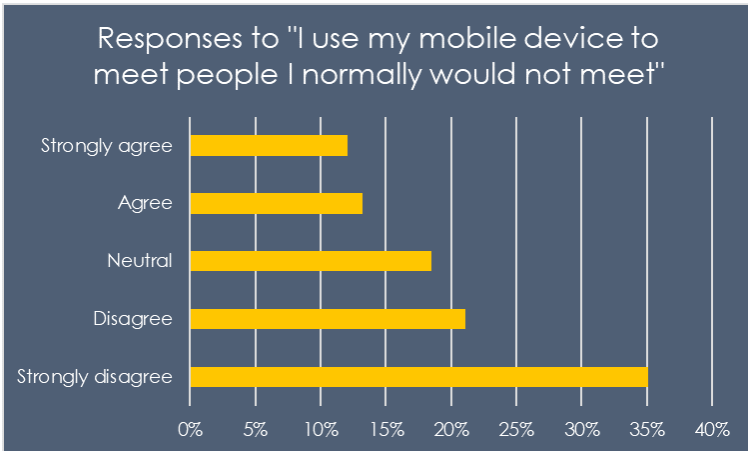
Data source: Song, J. (2019). *Technology Use Survey*

While some people may be utilizing technology to meet new friends and be exposed to potentially new experiences and ideas, most are not, and have no desire to. As such, one can wonder if our devices are opening up new worlds for us, or simply confirming what already know, or think we know, anyway. Research points to the latter.

Information silos

The information we get on our devices is increasingly catered to our existing belief systems, values, and tastes. Pariser (2011) illustrates how Google, the world's largest search engine, and Facebook, the world's largest social media engine, tailor our search results based on our pre-existing political beliefs, or interests. Pariser had two of his friends google "Egypt" and found that the search results were drastically different based his friends' backgrounds. One friend's search results revealed political turmoil, while another's revealed Egypt as a travel destination. Many have used the term information silos to describe the increasingly narrow scope of information people get online.

The problem with information silos is that our belief systems rarely go checked or challenged. Rather, we grow more myopic in our worldviews, and shut out any alternative perspectives. Social media platforms enable people to literally shut out other people online by the dreaded "de-friending" process. A recent poll conducted by the Pew Research Center found that 27% of Facebook users have defriended someone (Duggan and Smith, 2016). I asked the same question to my respondents and found that 51% have done the same. Research from NM Insite, a Nielsen McKinsey company that studies media consumption, found that the "offensive comments" is the leading reason why we unfriend others.

Furthermore, the American public is also bombarded with increasingly polarized viewpoints. In the last decade, there has been increased polarization in news outlets. Conservatives tend to favor Fox News, while liberals turn to CNN for their news. Each of these outlets inject liberal and conservative slants to news stories, through the framing and language. The division between the right and left was never more blatant than in 2007 when Andrew Breitbart created Breitbart News, a web-based news source that unabashedly released inflammatory opinion pieces that masqueraded as news. Some of their leading headlines included:

- Would you rather your child had feminism or cancer?

- There's no hiring bias against women in tech, they just suck at interviews

- Birth control makes women unattractive and crazy

- 1001 reasons why global warming is so totally over in 2016

- Host it high and proud: the confederate flag proclaims a glorious heritage

Breitbart claims that he created the platform as an antidote to liberal biases in the news. After working as a researcher for The Huffington Post, he created Breitbart News as "The Huffington Post

for the Right." Breitbart, however, is just one of the many websites that people get their information from, and there has been an increase in the spreading of misleading information which is damaging to public discourse.

In 2018, Vanessa Otero created Ad Fontes Media, a non-profit and non-partisan company that analyzes media outlets for biases and inaccuracies. Otero created the media bias chart where she analyzed news sources for biases, analysis, and whether or not opinion was injected in news reporting. The chart is illustrated below:
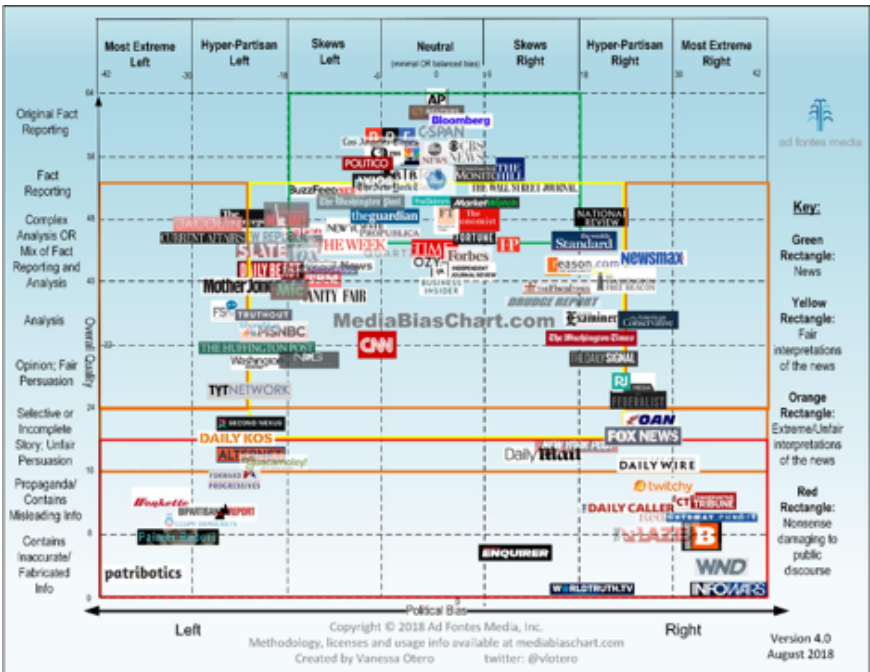

This graphic is a powerful tool to see where the news skews, and how misleading the information presented can be. As we can see, biases exist across news sources, but we are also able to see the websites that present incomplete stories, propaganda, or simply fabricated information.

Given that we are constantly being flooded with information, it is no surprise that a recent study found that young people

cannot differentiate between credible and questionable news. In 2016, The Stanford School of Education surveyed 7,804 middle school, high school, and college students across 12 states. They found that most students have a hard time discerning between advertisements and news articles. Moreover, they were unable to identify where the information presented comes from. The lack of digital literacy coupled with the increased use of technology has also coincided with the American public growing more politically polarized.

The Pew Research Center has been monitoring political polarization since 1994, using multiple scales. They use ideological scales to see how strongly liberals and conservatives cling to their beliefs. They measure how Republicans and Democrats view one another, and then measure social distance between the two parties. Obviously, tension between Republicans and Democrats has always existed. Hamilton and Jefferson spent years debating the role government should play in our lives. However, what is changing is the growing tide of antagonism between the two groups. Overwhelmingly, Pew finds that there is growing animosity between liberals and conservatives. In 1994, 16% of Democrats saw Republicans in a "very unfavorable" light, and by 2014, that figure jumped to 38%. For Republicans, 17% saw Democrats unfavorably in 1994 which rose to 43% by 2014. A growing number of Republicans and Democrats alike see the other party as a threat to the nation's well-being.

Percent Republicans and Democrats who see the other as a threat to the nation's well being, 1994-2014
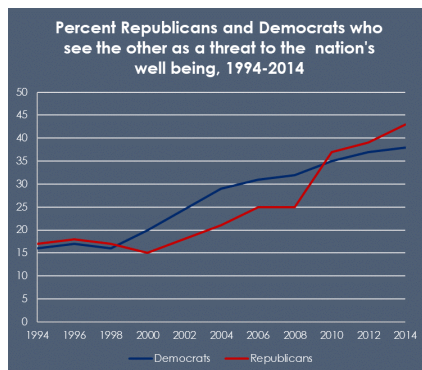
Data Source: Pew Research Center, 2016

This growing polarization seems predictable given that where we spend most of our free time online, inside of our information silos, unfriending anyone who offends us, and only consuming information that reinforces our pre-existing beliefs and values. I wanted to test how rigid people's beliefs were, and if online interaction could change people's minds. I asked my respondents if they have ever changed their mind about a topic that they were passionate about after an online interaction. Most (about 2/3) said no.

This could be in part due to the fact that most people are now not exposed to alternative perspectives due to the algorithms that internet giants like Google and Facebook have created. Given that people from different backgrounds carry different ideologies about the world, it could be argued that online interaction is creating greater social distance between people who are perceived to be different, simply because our time spent online takes away time that could be spent interacting face-to-face with people who are different from us, and limits our worldview to what we think we think about the world around us. This is a dangerous situation. Ideological silos coupled with reduced face to face interaction amplifies the baseline hostility, animosity, and schisms between groups, and reduces empathy across groups.

Empathy, the ability to experience another person's feelings, is perhaps one of the most important attributes in the human experience. Empathy allows people to feel the pain of others, love, communicate, and most importantly, cooperate. Empathy helps people negotiate, and see the world from a different perspective. Lack of empathy can lead to the inability to relate to the experience of others, dehumanization, and senseless violence.

However, empathy can also be problematic. Paul Bloom (2016) argues that empathy is dangerous, given that feelings of empathy change based on perceived similarities or differences. A person tends to feel more empathic when the victim is attractive, or if the two share some commonality. Social neuroscientists at the

Sapienza University in Rome recently conducted an experiment where they asked volunteers to watch short films where a person had her hand either poked with a needle or stroked gently with a Q-tip. The scientists measured brain activity while respondents watched the film clips. Empathy neurons fired far more frequently when the person depicted in the film had the same race as the respondent (Avenanti, Sirigu, and Aglioti, 2010).

Technology can destroy our ability to empathize. Given that most humans now spend the bulk of their days anonymously behind screens, people are less connected through face to face interaction. The anonymity of the web gives people free license to behave uncharacteristically. Take for instance, a 38-year-old childfree woman, who had this experience:

> This weekend I saw an ad from Brandless on Instagram. It was for some kind of fruit puree pouch thing and there was a kid in the ad. I'm really not one for The Comments Section, but I'm tired of seeing our planet destroyed by single-use items and I made a comment: "Just what the world needs - more single-use, products".
>
> I made the comment about Brandless' packaging choice because I want brands to do better. I want it to stop being so easy to destroy our planet. I am floored by what has transpired in the past 48 hours.
>
> - Women telling me that I'm a loser because I don't have kids.
>
> - Women making fun of me for having three cats.
>
> - Women making fun of the way I look.
>
> - Women telling me that I'm a bitch.
>
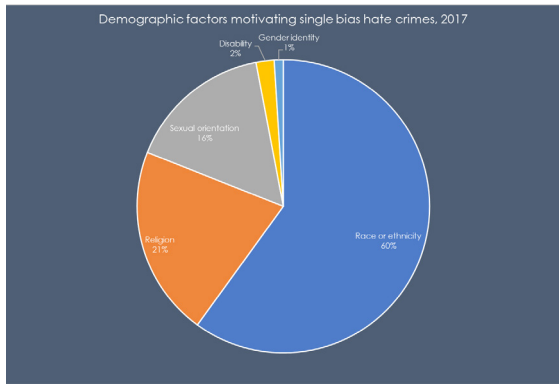> - Women telling me that I'm worthless because I'm not a mom.

- Women scrolling through my feed, leaving nasty comments on five-year-old photos and Direct Messaging me hateful things.

Could this scenario happen in real life? Picture a group of women, all strangers, randomly in a public square together. One woman makes a blasé statement about a company's policy of single use products. Suddenly, a bunch of other women verbally attack her. This scenario is so unlikely, it is laughable. And yet, it happens on the internet every day. People attack others based on their belief systems. People leave comments on news stories deriding people who are different. People leave nasty comments on one another's social media accounts, and have arguments online, leading to defriending. More and more, we are isolating ourselves into insular hallways, unwilling to understand others' experiences, and choosing to believe what we think is true, not fact.

The case of Lenny Ponzer illuminates this issue. Ponzer, 51, lost his six-year-old son, Noah, in the Sandy Hook Elementary School shootings in 2012, which left 20 kindergarten children slain. Ponzer posted photos of his son after the shooting on his personal Google page. Conspiracy theorists started to target Ponzer, accusing him of making up the loss of his son. Alex Jones, a far right American radio talk show host who started the fake news website *Infowars* publicly claimed that Sandy Hook was a hoax, and no children were murdered. Jones' followers targeted Ponzer, insulting him online, finding out where he lived, and leaving him death threats. Ponzer has moved eight times in five years. This example illustrates the deep divides in the American public, and the increased extremism among people.

 This hostility between groups may also be fueling the uptick in hate crimes. 2017 marked the third year in a row where hate crimes have been on the rise (FBI, 2018). According to the FBI's Uniform Crime Report, there was a 17% increase in hate crimes between 2016 and 2017. Of the 7,175 incidents, 59.6% were motivated by the victim's race or ethnicity. The victim's religion

and sexual orientation were also ranked highly as motivators for the hate crime, as illustrated in the chart below.

Demographic factors motivating single bias hate crimes, 2017

Disability 2%
Gender identity 1%
Sexual orientation 16%
Religion 21%
Race or ethnicity 60%

Data source: FBI Uniform Crime Report, 2018

Hate crimes have always existed. Lynching was a common practice in this country for decades. However, the issue is that we have seen a steady decline in the number of single bias hate crime over time. The FBI has been collecting data on hate crimes since 1996, and as you can see below, the number of hate crimes was almost cut in half between 1996 and 2014. Since then, however, there has been a steady increase in the number of hate crimes.

Number of single bias hate crimes, 2000-2017
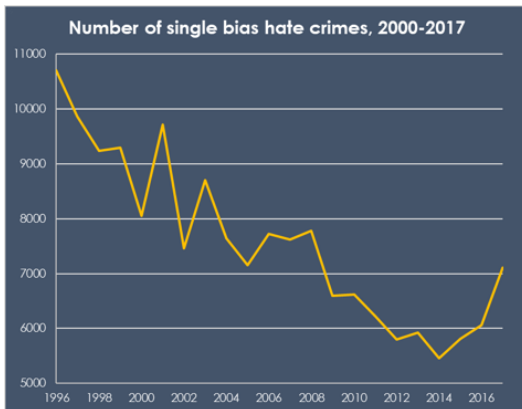
Data source: FBI Uniform Crime Report, 2018

Obviously, there are several factors that contribute to hate crimes. However, could it be that increased access to our individual

devices, increased time spent online, increased polarization, and decreased empathy play a role in the rise in hate crimes?

Conclusion

This paper explored the rise of digital devices in our lives. We began by tracing the history of communication technology from the invention of the printing press to modern devices, such as tablets and smartphones. We then examined the amount of time people spend behind screens, and learned that the time spent on mobile devices has been increasing in the last decade. Next, the paper interrogated some of the ways that our social interactions may be impacted by the increased use of mobile devices as a primary method of communication. I argued that social distance is increasing between groups, which may be contributing to the rise in polarization, and hostility between groups.

Much of the research shows that high levels of mobile device use contribute to higher levels of stress, anxiety levels, and shorter attention spans. Anxious people who are stressed and distracted tend to react emotionally, irrationally lashing out online, and dehumanizing others. These lead to decreased empathy, and more social distance between groups. One way we can avoid falling into this trap is by being intentional about our technological use.

Cal Newport (2019) advocates for digital minimalism as a way to be more deliberate about the role technology plays in our lives. Newport conceptualized digital minimalism as the process of wiping our digital slates clean, then deliberately re-introducing certain elements (read: apps) back into our lives, only if the tool has a positive impact on something we value. Digital minimalism can help people remove the digital clutter that causes people to feel overwhelmed, and emotionally manipulated. People who have de-cluttered their digital lives find themselves less anxious, more focused, and thinking more deeply. The process of de-cluttering helps people be more cognizant about where they are spending their time and attention, and re-focus their energy to things that matter.

Newport also recommends that we break the dependence we have on our devices. In 2004 *Harold and Kumar go to White Castle* was released. This popular and silly film depicted Harold and Kumar's marijuana filled attempt to make it to White Castle, a fast food chain on the east coast. In one scene, the two young men make their way towards an elevator, and Kumar realizes he forgot his cell phone. They pause for a moment, pondering if they should go back for it. Kumar decides, "No, we've gone too far," and the two venture out for the night without a mobile device. Most of us today could not fathom leaving the house without our phones, even for a quick run to the grocery store. Granted, Harold and Kumar were high in the film, which may have impaired their judgment, but many of us who were born before 1985 remembers a time when we were free of our mobile devices.

We have in our hands one of the most powerful tools humankind has known. We could be using this technology to foster human connection, kindness, and cooperation between groups. PJ Manney (2008) finds that storytelling plays a powerful role in developing empathy, especially in the era of technological dominance. It is through storytelling we are able to humanize the other, and connect to other human beings in spite of our differences. One of the ways we can create stronger social bonds is to be intentional about our interactions online. Rather than dismissing and unfriending people who don't share our values, we can find ways to connect with them through the power of the human experience. By building social bonds across differences, we are able to more compassionate, kind, and loving.

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