Ethics in Technology Group Assignment

<u>Group 11</u>
Hassan Alekri
Cian Murphy
C Okafor
Daniel Penrose
Andrey Yamkovoy

TikTok, previously known as Musical.ly, is a video sharing platform owned by ByteDance, a Chinese company founded in 2012, where users can upload videos ranging from 3 seconds to up to 15 minutes. The app allows users to endlessly scroll through the sea of content, enjoying dance videos, comedy skits, short educational videos, niche trends, and a wide variety of other genres available. Based on the user's previous likes and searches, TikTok gives the user a fully personalised set of videos to enjoy, which constantly changes as the user continues to browse and react to the content provided. Many famous artists, comedians, and celebrities can be found on the app, including Mariah Carey, Jack Black, and Will Smith. This software allows creators to share their works in the hopes of being seen by the general public, producing original music, showcasing their art, or in the hopes of getting Gordon Ramsey to react to their cooking video.

Alongside these artists, a large number of small businesses can be found on TikTok, trying to spread awareness of their products on the app. From candle making to woodburning, small businesses can be found taking suggestions from comments and trends to help grow their business. As these small businesses strive to grow, large businesses have also been found to use TikTok and its viral trends as a way to promote their products. Duolingo and Scrubdaddy have been known to use TikTok to promote their products and have even collaborated by having their mascots meet and create content together. As users interact with the page, the Duolingo team, for example, would respond to comments in comedic ways to bring more attention to the page and grow the number of followers. As the app grows, a number of questions arise regarding the impact the app has on its users and the ethics behind the use of the app.

The individuals affected by TikTok, and the algorithm implemented in the software, are the users and the creators. The main users of TikTok are teenagers, with the majority of the creators being between the ages of 18 and 25, and approximately 25% of TikTok users in the United States being between the ages of 10 and 19 [1]. The users are exposed to a wide variety of content due to the algorithm commonly referred to as the "for-you page" or the "fyp", which takes previous likes and views into account before presenting the user with more content. Due to the nature of the algorithm, creators have little to no control over who sees their content, and many strive to add tags and songs that are known to be trending, in an attempt to boost the number of views of their videos.

To gain popularity on the app, creators would partake in challenges and trends to please their viewers and gain more followers, some challenges and trends are lighthearted, like trying to get a high score at a TikTok game filter or discussing their odd encounters with clients at work, however other trends may be dangerous, whether physically, like the "Blackout Challenge" [2], or mentally, like the Bella Hadid audio that attempted to normalised eating disorders [3]. As mentioned by the statistic above, a large number of users are under the age of 19, and these users are still at an age where they are at risk of developing mental illnesses and eating disorders, as 13% of teenage girls in America between the ages of 13 and 19 are at risk of developing Anorexia Nervosa [4], therefore it these users and very susceptible to the information they receive from social media, and it is important not to normalise and expose them to things that may harm them.

The groups affected by content on TikTok would be news providers. TikTok has many creators dedicated to spreading information, whether it is about a historical event or a company, however there is also a large amount of misinformation spread on TikTok. Many users may see these short videos discussing a topic however they may decide not to fact check the source, such as a fake CNN article claiming that climate change is seasonal, or changing Vice President Kamala Harris's speech to claim all people hospitalised with Covid-19 were vaccinated [5]. Many of these claims and fake articles are made to promote comedy, such as The Onion claiming the Moon has passed away, however if the information does not get fact checked then many users may be led to believe these false claims as facts. TikTok is known to be lacking in regards to fact checking [6] and this would lead to a large amount of altered news reaching its wide user database.

Another group of people that are affected by this is advertising companies. TikTok has grown to have a large population of companies using this platform for advertising. This year, TikTok has made approximately 10 Billion dollars in advertising revenue [7]. Companies use a large range of ways to promote their products, such as Tiffany & Co releasing a video featuring Beyoncé wearing their gems [7], or RyanAir posting creative TikToks about their planes [8]. TikTok has released statistics about how Duolingo has grown ever since it started engaging with viewers. TikTok claims that Duolingo was able to increase their number of followers by over 14,000% and was able to reach over 38 million unique users [9]. Another example is IKEA partaking in the "dubloon cat" trend and offering viewers the imaginary virtual currency.The ability to gain traction through this social media outlet results in the lack of need of advertising companies. By simply partaking in trends and creating a fun atmosphere to their page, companies are able to increase their followers and reach more people than ever before.

When browsing the internet, one would prefer and expect quick loading times and digestible content. Given the 2020 average speeds of the internet, you could expect to download a 5GB file in about 18 minutes[10]. This need for faster loading can even be seen in Google's Search Engine Optimization (SEO), as it even dictates the ranking of certain web pages [11]. When on the internet, speed is a necessity, something expected of modern websites.

The idea that content needs to load quickly can lead to the idea that content also needs to be consumed quickly. For some, it's easier to watch a short video explaining a mathematical concept rather than read a document or textbook that explains it. And the shorter the content is, the quicker the user can continue their work. But it also means that they now have more time to watch another short video, if it's short. And then another one. And what's one more?

Short-form content can be any form of media but typically refers to short videos, ranging from a few seconds to 2-3 minutes long. This was seen previously with Vine, a short-form video hosting service owned by Twitter. After its closure due to many sponsors and popular creators leaving for other services such as Instagram[12], a gap was left to be filled for an app with a similar, singular purpose.

TikTok was created shortly before Vine shut down, and after its merger with Musical.ly, it exploded in popularity[13]. It focuses solely on short-form content, with a maximum video length of 10 minutes. This means that both short-form and longer videos can be viewed on the website, succeeding where Vine failed, which could only host short videos.

TikTok's massive catalogue of short videos means that a user could unknowingly spend hours on the app, scrolling from a 5-second clip to a 10-second clip to a 20-second clip and back down to 5. Starting and ending such short videos in such quick succession can be devastating for the user's attention span [14]. Shorter attention spans mean that people won't be able to spend as long focusing on something like schoolwork[15] and may struggle with remembering simple concepts. Additionally, marketers are figuring out how to exploit this shortening by making even *shorter* videos in the form of advertisements[16].

But this is only one such consequence arising from TikTok. Their massive audience – over 1 billion active users[17] – means that there are extremely popular videos that are seen by millions at a time, repeatedly. If one of these videos features a person doing something particularly idiotic, they'll get laughed at. But that drives impressions. Suddenly, another person is doing the same thing, and they also garner millions of views. Then the next, and the next. Eventually, people stop doing it for views and begin doing it solely because others are.

This is known as a social media trend, and they happen all the time. A popular one was the ALS Ice Bucket Challenge, a trend where someone would be recorded either pouring a bucket of ice water over themselves or over someone else. The goal was to raise awareness for ALS (amyotrophic lateral sclerosis) by donating $10, doing the challenge, and nominating someone else to do it next, who had to donate $100 if they didn't[18].

As previously mentioned, people ended up not donating anything as they drenched themselves with water just to have a video. This isn't the only instance where something like this happened, and the trends themselves began getting more dangerous.

Benadryl is a medication (antihistamine) to help relieve allergies and congestion[19]. The intended dose depends on the user's age and whether or not the product is a pill or liquid, but the average dose for those aged 12 years and older is 1-2 pills every 4-6 hours[20]. The Benadryl challenge is as nefarious as it sounds; a person takes a larger-than-normal dose – anywhere from 3 - 15 pills – in order to see "hallucinations"[21]. As can be expected, people died from this challenge. Overdosing on medication can be deadly, even if the dose seems "small". This is not the first time a trend has resulted in grievous injury and potential death. The "milk crate" challenge involves people walking up (and down) a stack of milk crates, trying not to fall. The milk crates could stair up to an arbitrary height, so falling off a stack of 1 or 2 wouldn't be much concern, but at higher altitudes, falling off could result in serious injury[22]. The people involved in this can number in the hundreds, with several injuries arising from a few 10-second videos (see section 2 - *Individuals Affected*).

TikTok impacts relationships between the user and the people closest to them in several ways. As a product, TikTok 's goal is to ensure that the user spends as much time as possible on the TikTok app, in many situations even to an unhealthy level.[23] This much time investment can make relationships with family and friends worse due to neglecting to spend time together in favour of spending time on TikTok. Spending such a large amount of time on an app like TikTok that monopolises your time can lead to being less mindful about your health due to doing less sports/physical activities.

Due to the product being so addictive and emphasising learning information about many different topics, it can easily distract the user from their studies, making them worse and possibly creating issues with parents as a large demographic of TikTok users are school aged children.[24]

Another issue of TikTok is how it can impact people that are in extremely close proximity to you such as boyfriends/girlfriends and marital partners. As an app TikTok often contains quick informational or recreational short videos. In most cases these often contain loud music which can be annoying to people working nearby. While music can be turned down or prevented through the use of headphones, TikTok can create issues between partners due to the choice of content that the user may watch.[25] In particular, TikTok is well known for having content creators dress up in revealing/erotic outfits and doing different dances.

As users spend a lot of time of the app, they most likely end up seeing these erotic dances which their partner may not want them watching,causing issues in the relationship.

Although TikTok has many downsides it can also cause new relationships to form more easily. Different users may connect with each other if they are interested in similar topics or hobbies.[26] Even if it might connect users it could also ostracise some people from friend groups/cliques if they are not users and feel uncomfortable with not sharing a common hobby in spending time on the app.

TikTok have their own proprietary algorithm that feeds users a stream of content that it deems they will find interesting and engage with. This algorithm is highly complex and is built of data that TikTok gathers on you. 80%[27] of all users on TikTok are between the ages of 16-24. This may not be accurate as children under the age of 16 may lie about being older in order to gain access to the app. The brains of users in this demographic are still developing

and are highly impressionable[28]. This means that the TikTok algorithm is having a significant impact on the thinking and behaviour of young people. It can end up showing content that contains misinformation or could incite extremists thoughts. This is a very real possibility for the youth today. With over 1 billion monthly active users on the site, the worldview of a whole generation is at risk of being manipulated by just one company.

Another side of TikTok is the content creators. These are the people who create content that is absorbed by users worldwide. Due to the nature of the algorithm it is very easy for creators with a small amount of followers to go viral with one post. These creators can get fame and popularity from their videos but also opens them up to online criticism and bullying from anyone with access to the internet from anywhere on the globe.

As TikTok is an online platform for sharing short videos and informational content,there will naturally be conflicts between groups of people about what they believe should be shared or talked about or omitted. Several of the group conflicts that I will discuss are how secure the platform is and how it sparked conflict between the US and China, how there is natural conflict between different companies fighting for advertising space, generation conflict due to the use of the app and similar technologies and conflict due different moral ideas.

I will first talk about how TikTok sparked conflict between the US and China. This conflict began when government officials raised concerns about the security and protections of data gathered and used by the TikTok app.[29] As TikToks parent company ByteDance has had a history of lawsuits due to data privacy reasons, people were concerned about the misuse of data. This led to a discussion in the US to ban TikTok, which became a large idea around the end of 2020 when President Trump called for a ban on TikTok. In June 2021 President Trump then reverted Trump's order but also began investigating privacy concerns about the app. These concerns have still been ongoing as ByteDance claims that the data is stored in the US but due to rumours that there is a backdoor to this data, the conflict is not yet resolved.

As TikTok is monetized through the use of advertising, there will naturally be conflicts between companies over whose ads will be shown and when. This is mostly resolved through the use of profiling its users through its ForYou feeds which allows companies to target their user base more effectively, so there is less overlap between companies users so the price is not overly inflated due to ad placement bidding wars.

Another conflict that may arise on TikTok is the issue of how people believe others should behave or act or what they think others should think or believe. This is largely an issue in the clashing of religious beliefs or issues in how people think of themselves such as gender issues or political beliefs or how people think people should act such as aggressively promoting personal beliefs such as veganism.

Another source of conflict between groups due to TikTok is the growing gap between older and younger generations due to the growing use and role of technology in society.[29] As youth spend more time on social media platforms and apps like TikTok there is a growing gap of understanding and change in behaviour between the youth and older generations who do not or cannot relate to them anymore as technology grows more and more and society adapts.[30]

TikTok, as a business, is an advertising company. Much like its contemporaries, it makes its living by producing an environment in which people view more advertisements. The entire purpose of its content and algorithm is to both give downtime between advertisements in which you can view content you enjoy, as well as pinpointing precisely what kind of ads you would engage with.

Through variables like the kind of content you spend the most time watching, your likes, and even how you scroll, TikTok builds a profile of you that they aggregate with information from third parties, described as "actions you've taken outside of the platform" [31]. It then delivers ads that it knows through terabytes of training data will result in the highest clickthrough rate.

All of this is established and known about TikTok. There have been many lawsuits and controversies that litter its Wikipedia page. Its most concerning moral failure, however, is the platform's effect on minors. TikTok, as a platform, is undoubtedly most popular with younger users. While it's not exclusively used by young people, over one-third of its users are under 14, according to internal documents found by the New York Times [32]. The minimum age to use TikTok in their terms of service is 14.

Under the Advertising Standards Authority for Ireland, which TikTok's Dublin offices surely operate under the jurisdiction of, defines a child as a person under 18. Advertisements on TikTok, however, aren't overseen or assessed by the ASA. It appears they're unaware of the risks posed to young children on the platform. For example, while using the platform, a content creator they enjoy can produce sponsored or branded content that is difficult to distinguish from regular content, especially for young children.

On the 14th of September 2021, the Irish Data Protection Commission launched "two enquiries into TikTok… relating to the processing of childrens' personal data" [33]. A full year later, and the commission is only now submitting draft decisions for review [34]. Given the amount of tech giants headquartered in Dublin, institutions such as these have a responsibility to the world to keep them in check. In my opinion, however, the speed of the DPC to respond to concerns about TikTok is unacceptable and shows how inadequate the commission is in dealing with real problems. This shows two things: that TikTok largely seems to get away with unregulated advertising to children (especially the vast amounts of its users that are under 13), and that institutions are failing to stop them.

Seemingly in response, TikTok launched an advertising campaign around Dublin, promoting their family-friendly features, such as allowing parents to manage screen time, direct messaging being unavailable to users between 13-15, and how TikTok is firmly a 13+ experience [35].

Another problem plaguing TikTok is misinformation. As stated before, the goal of the platform is to keep its users active on it. It makes sense, then, when the most sensationalist videos float to the top of its recommendation algorithm. A study by NewsGuard found that out of 540 search results, 105 of them (19.4%) contained "false or misleading claims" [36].

The problem with misinformation on a platform like Tik Tok is not only that it gets actively promoted, but that now more than ever, young people are replacing search engines such as google with TikTok's search function [36]; though misinformation may not be often recommended to every user, the curious person who wants to find out what

"hydroxychloroquine" is after hearing the then-president Donald trump talking about it, will find misinformation easier than fact.

Only recently, another report found that videos glorifying violence by a Russian mercenary group were circulating on TikTok's platform [37]. They had collectively gained over 1 billion views. Even with TikTok's guidelines in place, people such as Russia's "Wagner Group" will find ways through them, using innuendo and analogy that are mutually understood by both the content creator and their followers, but are not easily interpreted by outsiders. For example, the "Wagner Group" refers to itself as an "orchestra", describing its soldiers as "musicians", with war as their "concert".

When you're in the groove that TikTok's platform has carved for you, not straying from their platform, it's easy for well-spoken, high-production-value content with non-experts speaking on topics to pass as expert opinion.

The problem with these issues on a platform such as TikTok is that there are much more reliable methods of finding sources or fact-checking information outside the app. As a result, TikTok doesn't want you to fact-check using external sources; doing so would mean you spend less time on their platform. In 2020 TikTok partnered with fact-checkers AFP and Lead Stories to aid in combating misinformation on their platform [38]. As we've seen, this hasn't helped matters. TikTok's aversion to users leaving their platform, even for a moment, is directly at odds with their "commitment" to combating misinformation.

In the essay above we discussed many of the unethical, unhealthy and dangerous problems that are associated with TikTok. Now I will outline some steps that could be taken to mitigate said problems. A major issue with the app is its use by young children. In order to combat this TikTok could increase the minimum age to use the app to 16. At least then users would have a better understanding of what's right and wrong.

Another option would be to have two separate versions of the app, one for children from 13 to 18 and another for over 18s. Initially users would only be able to post to the version that they are using. They could then apply to be able to post to both. Accounts for companies or Influential people could be allowed to post to both as long as it was age appropriate. An example would be letting news sites post on the under 18 version since children are also entitled to read the news.

TikTok could also significantly increase the number of platform monitors it has These people are responsible for moderating the content that it posted online and judge whether it is factually correct. Having said that, TikTok does have a very strict path to banning users for posting inappropriate content. This involves a series of short bans from the app and in the case that that doesn't stop the user, their account can be permanently banned and deleted.

To deal with the problem of users spending too much time on the app TikTok could add suggestions to take a break every so often. This could be a very good thing to be implemented but highly unlikely since TikTok wants users spending more, not less time on the app. The only way a feature like this would make it onto the app is if TikTok is legally forced to do so by a major governing body such as the US Government or the EU Parliament.

TikTok's history with privacy is very sketchy. In mid-2020, India banned TikTok citing "data privacy", and the USA, while not outright banning the app, had its then-president Donald Trump declare it a threat to the country.[39] TikTok itself collects various data about the user, including the user's IP address, keystrokes, location, and even direct messages sent to other users.[40] Additionally, they had previously violated COPPA, the USA's Children's Online Privacy Protection Act and were forced to pay $5.7 million to the FTC.[41]

It's clear that TikTok has issues relating to privacy and how it handles its users' data. So how can something like GDPR help when TikTok have so abashedly ignored previous privacy and safety guidelines?

Well to start, the fines accrued from violating GDPR could discourage the company from repeated violations. They were fined €750,000 by The Netherlands in 2021 and face another £27 million fine from the U.K., both for GDPR violations and collecting data on children.[42][43] Plus, Ireland has submitted a draft for another inquiry into TikTok for, again, violating data protection laws about children's data.[44][45]

Another thing GDPR helps with is data requests. TikTok must have a form to perform a Subject Access Request (SAR) or a Right to be Forgotten request (RTBF). They do provide a way to request the information they have on a user, but they don't seem to have the option to request a data wipe. They claim to delete the information up to 30 days after the user deletes their account, but it can't be proven that the data is deleted.[46] Still, to comply with GDPR, that 30-day window is their time limit.

As a couple of the people in our team were not very familiar with TikTok as they hadn't used it before we discussed how outsiders to TikTok viewed it. We agreed that from the outside TikTok seems extremely addictive as everyone in the group admitted to either seeing people spend increasing amounts of time on TikTok or to spend time on it themselves. We agreed that to many of the older generations, TikTok seems more like a disruptive influence as the negatives of its use often outweigh the positives. Overall we agreed to avoid the app, limit our use of it and to try to stay more productive.

Some of our team members were already familiar with TikTok, at least to some degree. We had used TikTok before, or even during the undertaking of the assignment. Despite our enjoyment of the application, after the creation of this ethics canvas, we were able to fully understand the negative impacts that can accompany the extensive use of the app. We had been able to use the app without worry of seeing dangerous content, however the addictive nature was able to pose a threat to us as, even during meetings, we found ourselves opening the app and distracting ourselves. We were already aware of the application's addictive nature or dangerous content, however, the full weight of the issues presented by the app had not fully been recognised until they were faced.

At the start of this project we set out to review and evaluate the ethical impact of TikTok in our society. By following the outline of the Ethics Canvas we were able to explore all the different ways tiktok impacts and influences our lives. To summarise, we found that TikTok is a highly active app that manipulates and shapes the lives of its users by putting strains on their relationships, coaxing them into dangerous thoughts or actions and altering their

perception of the world around them. As a group we feel these are hugely profound effects from one of the world's biggest social media companies. The questionable ethics of what this is doing to society cannot be ignored and needs to be dealt with. We feel the only way this can be done is with much stricter regulations from governmental agencies. The EU is currently investigating TikTok for how it is managing our data and advertising practices. We hope that this results in tighter regulation. At the end of the day it's up to an individual person to protect themself. This can be done by simply deleting the app and never using it again. Taking back control of our lives from tech companies is going to be one of the greatest challenges for society of the 21st century and we feel it is a challenge worth taking.

Member Contributions

Name	Contribution
Cian Murphy	I worked on the section about how tiktok impacts on our worldviews and what can be done to improve tik tok from an ethical standpoint. I also wrote the conclusion paragraph.
Hassan Alekri	I worked on the introduction, the sections outlining the individuals and groups affected, and half of the group discussion paragraph (outlining the portion of the group that used tiktok. I also corrected citations.
Andrey Yamkovoy	I worked on the sections on how Tik Tok affects our relations and relationships and on the section on how Tik Tok causes group conflict. I worked on writing up the group debate outcome for the non Tik Tok half of the group.
C Okafor	I worked on dissecting the behaviour of people on Tik Tok and how trends and short-form content can affect its users. I also wrote about how GDPR can help with giving users control over how their data is treated by TikTok.
Daniel Penrose	I worked on the sections regarding how TikTok creates a dangerous online environment for minors, in regards to advertising, and how misinformation affects the platform.

References:

[1] Ceci, L. "TikTok - Statistics & Facts." Statista, 28 Apr. 2022,
https://www.statista.com/statistics/1095186/tiktok-us-users-age/.
[2] Clark, Mitchell. "The Tiktok 'Blackout Challenge' Has Now Allegedly Killed Seven Kids." The Verge,
The Verge, 8 July 2022,
https://www.theverge.com/2022/7/7/23199058/tiktok-lawsuits-blackout-challenge-children-death
[3]Lang, Cady. "My Name Is Bella Hadid Tiktoks and Disordered Eating Posts." Time, Time, 19 Oct.
2022, https://time.com/6223198/bella-hadid-tiktok-trend-eating-disorders/.
[4] Volpe, Umberto et al. "Eating disorders: What age at onset?." Psychiatry research vol. 238 (2016):
225-227. doi:10.1016/j.psychres.2016.02.048
[5] Hsu, Tiffany. "Worries Grow That TikTok Is New Home for Manipulated Video and Photos." The
New York Times, The New York Times, 4 Nov. 2022,
https://www.nytimes.com/2022/11/04/technology/tiktok-deepfakes-disinformation.html.
[6] Wong, Queenie. "TikTok Is a Misinformation Minefield. Don't Get Tripped Up." CNET, 10 Oct. 2022,
https://www.cnet.com/news/misinformation/tiktok-is-a-misinformation-minefield-dont-get-tripped-up/.
[7] Huang, Kalley, et al. "'Tiktok Is Eating the World': Short-Video App Building Itself into an
Advertising Juggernaut." The Irish Times, The Irish Times, 24 Nov. 2022,
https://www.irishtimes.com/technology/big-tech/2022/11/24/tiktok-is-eating-the-world-short-video-app-
building-itself-into-an-advertising-juggernaut/.
[8] Tubridy, Ryan. "Meet the Woman behind Ryanair's Hilarious TikTok Account." RTE.ie, RTÉ, 3 Nov.
2022,
https://www.rte.ie/lifestyle/living/2022/1103/1333010-meet-the-woman-behind-ryanairs-hilarious-tiktok-
account/.
[9] for Business, Tiktok. "Tiktok for Business Case Study: Duolingo: Tiktok for Business Case Study."
TikTok For Business, TikTok For Business, 22 Mar. 2022,
https://www.tiktok.com/business/en/inspiration/duolingo-509.
[10] "How Global Broadband Speeds Changed during Covid-19 Lockdown Periods." *Cable.co.uk*,
https://www.cable.co.uk/broadband/speed/broadband-speeds-covid-19-lockdown/
[11] Subramanian, Sowmya. "Evaluating Page Experience for a Better Web." *Google*, Google,
https://developers.google.com/search/blog/2020/05/evaluating-page-experience
[12] McAlone, Nathan. "Twitter Is Shutting down Vine." *Business Insider*, Business Insider,
https://www.businessinsider.com/twitter-shutting-vine-down-2016-10
[13] Geyser, Werner. "Tiktok Statistics – 63 Tiktok Stats You Need to Know [2022 Update]." *Influencer
Marketing Hub*, 1 Aug. 2022, https://influencermarketinghub.com/tiktok-stats
[14] Subramanian, K R. "Myth and Mystery of Shrinking Attention Span." International Journal of
Trend in Research and Development, June 2018, http://www.ijtrd.com/papers/IJTRD16531.pdf
[15] Gruber, Gabriella. "Short-Form Media Are Shredding Student Attention Spans." *CC Spin*, 5 Nov.
2021,
https://ccspin.net/2671/arts-entertainment/short-form-media-are-shredding-student-attention-spans/
[16] Santos, Lara. "The Benefits of Creating Both Short-Form and Long-Form Video Content."
Lemonlight, 16 June 2022,
https://www.lemonlight.com/blog/the-benefits-of-creating-both-short-form-and-long-form-video-content
/
[17] "Thanks a Billion!" *Newsroom*, TikTok, 27 Sept. 2021,
https://newsroom.tiktok.com/en-us/1-billion-people-on-tiktok
[18] Qgiv Team. "#Icebucketchallenge: Pros, Cons, and What It Means for You." *Qgiv Blog*,
https://www.qgiv.com/blog/icebucketchallenge/
[19] "Frequently Asked Questions." *BENADRYL*®, https://www.benadryl.com/faq
[20] "Benadryl® Allergy ULTRATABS® Tablets with Diphenhydramine." *BENADRYL*®,
https://www.benadryl.com/products/benadryl-allergy-ultratabs-tablets

[21] Curley, Bob. "'Benadryl Challenge' on TikTok Is Dangerous, Experts Say." *Healthline*, Healthline Media, 24 Sept. 2020, https://www.healthline.com/health-news/benadryl-challenge-on-tiktok-is-dangerous-experts-say

[22] Valinsky, Jordan. "TikTok Bans the 'Milk Crate Challenge' Because of Injuries | CNN Business." *CNN*, Cable News Network, 27 Aug. 2021, https://edition.cnn.com/2021/08/27/business/tiktok-bans-milk-crate-challenge/index.html

[23] -. "How TikTok Is Addictive." Medium, DataSeries, 13 Sept. 2020, How TikTok Is Addictive. Psychological Impacts of TikTok's… | by - | DataSeries | Medium.

[24] "The Effects of TikTok Use on College Student Learning", Audrey Mekler,Bridgewater State University Virtual Commons. https://vc.bridgew.edu/cgi/viewcontent.cgi?article=1515&context=undergrad_rev.

[25] How Much Has Tiktok Destroyed Your Relationships with Others ... - Quora. https://www.quora.com/How-much-has-TikTok-destroyed-your-relationships-with-others.

[26] Anamarija Brnjarchevska, Zenger News. "Tiktok Made Me Do It: Gen Zs Taking up New Hobbies with Help of Popular App." Newsweek, Newsweek, 20 May 2022, https://www.newsweek.com/tiktok-made-me-do-it-gen-zs-taking-new-hobbies-help-popular-app-1708688.

[27] Admin. "Tiktok Statistics - Everything You Need to Know [Nov 2022 Update]." Wallaroo Media, 22 Nov. 2022, https://wallaroomedia.com/blog/social-media/tiktok-statistics/#:~:text=60%25%20are%20female%2C%2040%25,between%20the%20ages%2025%2D44

[28]Magazine, Smithsonian. "Teenage Brains Are like Soft, Impressionable Play-Doh." Smithsonian.com, Smithsonian Institution, 18 Oct. 2012, http://smithsonianmag.com/smart-news/teenage-brains-are-like-soft-impressionable-play-doh-78650963/

[29] Brown, Dr Kerry. "How TikTok Got Caught in the Crosshairs of US-China Politics." Feature from King's College London, 5 Aug. 2020, How TikTok got caught in the crosshairs of US-China politics | Feature from King's College London

[30] News, and Alexis Borek. "Tiktok Influences Communication, Creates Generational Divide." The Huntington News, 10 Mar. 2022, https://huntnewsnu.com/68167/lifestyle/tiktok-influences-communication-creates-generational-divide/

[31] TikTok Technology Ltd., "New Privacy Policy | TikTok," 2 11 2022, https://www.tiktok.com/legal/page/eea/new-privacy-policy/en

[32] R. Zhong and S. Frenkel, "Tiktok by the Numbers (2022): Stats, Demographics & Fun Facts," Omnicore, 20 8 14, https://www.nytimes.com/2020/08/14/technology/tiktok-underage-users-ftc.html

[33] Data Protection Commission, "DPD launches two inquiries into TikTok concerning compliance with GDPR requirements relating to the processing of chlidrens' personal data and transfers of data to China," 14 09 2021, https://www.dataprotection.ie/en/news-media/latest-news/dpc-launches-two-inquiries-tiktok-concerning-compliance-gdpr-requirements-relating-processing

[34] Data Protection Commission, "Irish DPC submits Article 60 draft decision on inquiry into TikTok," 2022 09 13, https://www.dataprotection.ie/en/news-media/irish-dpc-submits-article-60-draft-decision-inquiry-tiktok-0

[35] AdWorld.ie, "TikTok Launches First Ever Irish Campaign," 11 11 2022. https://www.adworld.ie/2022/11/11/tiktok-launches-first-ever-irish-campaign/

[36] J. Brewster, L. Arvanitis, V. Pavilonis and M. Wang, "Misinformation Monitor: September 2022 - NewsGuard," 09 2022, https://www.newsguardtech.com/misinformation-monitor/september-2022/

[37] E. Maitland and M. Roache, "Misinformation Monitor: November 2022 - NewsGuard," 11 2022, https://www.newsguardtech.com/misinformation-monitor/november-2022/

[38] D. T. &. S. T. A. P. Arjun Narayan Bettadapur, "TikTok partners with fact-checking experts to combat misinformation," 1 10 2020,

https://newsroom.tiktok.com/en-au/tiktok-partners-with-fact-checking-experts-to-combat-misinformation

[39] Zulkifli, Arief. "TikTok in 2022: Revisiting Data and Privacy." *CSDL | IEEE Computer Society*, June 2022, https://www.computer.org/csdl/magazine/co/2022/06/09789294/1DZ8aACAWZi

[40] "Privacy Policy." *TikTok*, 2 Nov. 2022, https://www.tiktok.com/legal/page/eea/privacy-policy/en

[41] Lieber, Chavie. "Tiktok Has Been Illegally Collecting Children's Data." *Vox*, Vox, 28 Feb. 2019, https://www.vox.com/the-goods/2019/2/28/18244996/tiktok-children-privacy-data-ftc-settlement

[42] Ta, Katie. *GDPR Case Study: Dutch DPA Fines TikTok over Privacy Policy*. https://cs.brown.edu/courses/csci2390/2021/assign/gdpr/ctan-kta1-tiktok.pdf

[43] Sweeny, Mark. "Tiktok Could Face £27m Fine for Failing to Protect Children's Privacy." *The Guardian*, Guardian News and Media, 26 Sept. 2022, https://www.theguardian.com/technology/2022/sep/26/tiktok-fine-protect-children-privacy-uk-data-protection

[44] "DPC Launches Two Inquiries into Tiktok Concerning Compliance with GDPR Requirements Relating to the Processing of Childrens' Personal Data and Transfers of Data to China." *Data Protection Commission*, 14 Sept. 2021, https://www.dataprotection.ie/en/news-media/latest-news/dpc-launches-two-inquiries-tiktok-concerning-compliance-gdpr-requirements-relating-processing

[45] "Irish DPC Submits Article 60 Draft Decision on Inquiry into TikTok." *Data Protection Commission*, 13 Sept. 2021, https://www.dataprotection.ie/en/news-media/irish-dpc-submits-article-60-draft-decision-inquiry-tiktok-0

[46] Koch, Richie. "How to Delete Tiktok and All of the Personal Data It Collected." *Proton VPN Blog*, 23 July 2020, https://protonvpn.com/blog/how-to-delete-tiktok/