

## **#ForYou: The User's Perspective on How TikTok Recommends Videos**

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### **Abstract**

The current study is aimed at understanding the impact of TikTok's recommendation system. The algorithm is perceived as very efficient in targeting users but raises several ethical concerns regarding the ability to manipulate users' experience and the extent to which private data and preferences are respected. Utilizing the data collected from 40 in-depth interviews, this study explores: How do users perceive TikTok's ethical responsibilities in regard to their algorithmic recommendation system? Furthermore, the analysis discusses and evaluates the tension between a) how the platform's algorithm feeds users similar videos that they highly appreciate; and, inversely, b) how the diversification of recommendations is limited. A thematic analysis shows interviewees describe TikTok as a safe space where users can be themselves and feel included in a community of people interested in posting content to connect and engage meaningfully beyond difference. However, the algorithm is perceived as harmful because it tries to manipulate and drive users towards specific videos that increase their 'addiction' to the platform. Interviewees consider some of the recommendations on the ForYou page to be questionable because they aimed at persuading or nudging in favor of particular hashtags and social causes. This contradiction may partly be explained by the fact that interviewees report their rationalizations in a performative manner in order to avoid feelings of dissonance while attempting to relate to their own self-identity. This observation leads to the idea that the concept of mediated diversity can explain the tension between the expectation of similarity and diversity.

### **Keywords**

TikTok, social media, media ethics, empirical ethics, digital ethics, algorithm, diversity, similarity

TikTok makes headlines — but most of the time for less than desirable reasons. The platform has faced increased scrutiny over privacy and data security concerns, which led to a pending ban imposed by the Trump administration (White House, 2020). However, in 2020, TikTok has unquestionably grown to become a popular platform, particularly among young people (Financial Times, 2020). Both in Europe and North America, TikTok users have shown more attention towards inclusivity: several of the most popular hashtags on TikTok, such as #alldifferences, are aimed at celebrating diversity. Furthermore, TikTok has become the leading digital platform to document anti-racist demonstrations and to express solidarity with Black Lives Matter. TikTok's popularity continued to increase alongside the protest against violence and systemic racism towards black people following the death of George Floyd. The hashtag #blacklivesmatter reached 20 billion views on TikTok as of August 10th (TikTok, 2020).

TikTok's algorithm has been defined as the most sophisticated in shaping individual experience and social interactions. Due to the emphasis placed on its visual aspect, TikTok applies a personalized algorithmic visual filtering to the external factors of a person's appearance, such as their body type or fashion. The recommendations are not only similar in terms of type of content, but in physical attributes such as race, age, or facial features. Looking back into the company's history, TikTok's algorithm raised controversy for allegedly hiding videos posted by lesbian and gay users or people with disabilities (The Guardian, 2019), videos of users who were 'poor' or 'ugly' as determined by the platform's 'standards' (The Guardian, 2020), and content created by people of color (Time, 2020). These controversies reveal the urgency for transparency and clarity on the criteria applied by TikTok's algorithm. These concerns make TikTok particularly interesting to study because of its large success among young users.

Previous studies have stressed the need to further examine the views of young users with regard to risky choices online (Livingstone, 2008, 2014) and online situations that involve the presence or absence of ethical and moral reasoning (James et al, 2009; Flores & Carrie, 2012). However, very little qualitative research has been conducted on the ethical concerns of young users regarding recommendation algorithms in social media and no study to date has provided the opportunity to voice a user's own experience with these algorithms as they perceive them through their use of TikTok. An empirical-ethical approach can indeed help in the better analysis and design of algorithmic recommendation systems. This approach is capable of not only considering ethical issues related to algorithms and ethical responsibility, but also how social problems are interlinked with each other.

The current study is aimed at understanding the impact of TikTok's recommendation system. The algorithm is perceived as very efficient in targeting users but raises several ethical concerns regarding the ability to manipulate the user experience and the extent to which private data and preferences are respected. There has been an increase in the public awareness on the effect that algorithms have on social media users (Ananny, 2016). Social media platforms should be accountable for the way they might affect the information that users consume. The effects of recommendation algorithms are receiving more attention in academic literature (Milano et al, 2020) as social media recommendation systems pose the risk of causing echo chambers and filter bubbles (Bozdag & Hoven, 2015). Specifically, shielding users from access to various perspectives might induce biases and limit public debate (Helberger et al, 2018).

To understand the impact of a recommender algorithm on the user experience, it is central to understand that potential effects are dependent on the architecture of the specific recommender algorithm in use (Kitchin, 2017). Traditional social media recommend content from people we follow or we agree with. For this reason, algorithmic recommendation systems keep feeding similar content, hiding content that may vary from the user's taste or beliefs. Recommendation systems suggest new content after a thorough consideration of user preferences, which are recorded via their social media interactions, such as which accounts they follow and which posts they comment on. Such preferences are analysed by recommendation systems to not only find out the type of similar content said user is attracted to but also to hide the ones we would not enjoy. As a result, it becomes easy to forget in this synthesized microcosm that opinions exist which may be in contrast to one's own.

The goal of the study is to understand to what extent young users perceive the role of TikTok's recommendation systems to provide a personalized experience. Utilizing the data collected from 40 in-depth interviews, this study investigates how social media users justify their use of TikTok, despite the ethical concerns surrounding the platform. This research seeks to explore the following core question: How do users perceive TikTok's ethical responsibilities in regard to the algorithmic recommendation

system? Furthermore, the analysis discusses and evaluates the tension between a) how the platform's algorithm feeds users similar videos that they highly appreciate; and, inversely, b) how the diversification of recommendations is limited. Interviews were done with international students, between 18 and 24 years old who had been residing and studying in the Netherlands. A thematic analysis is applied to understand young users' perception of TikTok's ethical responsibilities and the underlying justifications they employ while engaging with the social platform.

This research contributes to the field of studies on the impact of algorithmic personalization on social media in three ways. First, it proposes that a macro-ethical approach can help in the better analysis of recommendation systems. For instance, investigating recommendation systems involves measuring the exposure to diversity and similarity (Möller et al, 2018) but we should also understand the ways they may limit autonomy and personal identity (Milano, Taddeo & Floridi 2019). Second, the research frames the outcome of different algorithmic recommendation choices in a social context. Algorithms are generally considered as a single entity that is an immutable, external force. But this idea is a reductive representation of reality that limits our ethical understanding to the material outcomes of the algorithms. The third and primary contribution of this research is the development of a novel approach to evaluate ethical responsibility of social media through the experience of social media users.

### **Similarity and Diversity in Recommendation Systems**

Recommendation systems are based on algorithms that infer users' preferences and make recommendations to them, for example, suggestions for a particular video. In the same way, TikTok's ForYou feed varies depending on users' preferences. This system can predict how users will rank a collection of videos individually or collectively. While accounts with a high number of followers may obtain more views due to their larger following, a history of well-performing videos and a high follower count does not guarantee a better place in the ranking system. To work effectively and competently, TikTok collects and manages a large amount of private data.

TikTok's algorithm takes numerous factors into consideration to feed the ForYou page with personalized suggestions. These factors get analysed by the recommendation system with each data point being assigned a weighted value based on the user's interests. For instance, if a user watches an entire video instead of skipping mid-way, this data point is given more weight compared to an indicator like the country of the content creator. Videos get ranked based on the potential interest a user may have in them and are in turn shown in the ForYou feed, which is unique for every user. Unavoidably, these systems eventually end up defining the individual experience of digital ecosystems and social interactions (Burr et al. 2018; Karimi et al. 2018).

Very little research has been done about the ethical concerns related to the use of recommender systems. The discussion is divided across disciplines, as it tends to concentrate on particular aspects and applications of these systems in various contexts. There could be two prime factors responsible for the fragmentation (Milano et al. 2020, pp. 957-958): the comparative novelty of the technology that emerged with the introduction of collaborative filtering methods; and the disputes related to proprietorship and privacy that emerge during the development of such algorithms. This aspect makes evidence-based assessments difficult as independent researchers find it very hard to gain access to the information about the internal working of such algorithms. Similarly, implementers of recommender systems also avoid sharing information as they fear that it might raise privacy issues related to their users' private data (Friedman et al, 2015).

Examining recommendation systems might involve measuring the exposure to similarity or diversity but should also understand the ways they may limit autonomy and personal identity. Recommendations that are based on possible similarities raise ethical concerns because when invisible and supposedly objective computational logics show a similarity between multiple instances, people view similarities between some acts as totally spontaneous and obvious. Such circumstances make it difficult for them to realize actual differences, consider choices, defend unsuggested actions, or disagree with the claims of similarity (Hofstadter & Sander 2013, p.10). As a system of guiding principles, ethics help us determine what issues are of moral relevance and how to conscientiously position ourselves in relation to such issues. This perspective should take into account the responsibility of the stakeholders

and question whether different architectures assist us in building satisfactory relations with other parts of our experience (Ananny, 2016).

A persistent problem in the contemporary debate around the ethical risks posed by designing recommender systems is the lack of attention on algorithm diversification. Diversification of the algorithm selection is generally conceptualized as the inclusion of counter attitudinal information (Pariser, 2011). On one hand, diversification is considered a necessary design element, often conceptualized as the inclusion of surprising items. For this reason, diversity is mostly modelled and conceptualized at the input level by computer scientists (Möller et al, 2018, p. 961). On the other hand, diversity in social sciences encounters a series of empirical and conceptual constraints, in which the simplistic application of a set of inputs ignores the complexity of lived experiences and ethical dilemmas. Assessing diversity in the output of a recommendation system requires a solid recognition of the cultural and social elements that underlie the definition of the ‘good.’ These two different approaches regarding recommendation systems are to some extent a result of different epistemological premises.

Therefore, it is quite problematic to address algorithm architecture by using these two approaches, primarily because the definition of diversity in algorithm selection is more contentious than it appears, and requires to view the systems in the light of the particular social and cultural context in which the algorithm works (Milano, Taddeo, and Floridi 2020). Diversity could be primarily discussed in terms of multidimensional aspects including variety of content, genre, and change in tone (Helberger et al., 2018). However, this multidimensional approach to diversity assumes a stable algorithmic architecture and ethical norms, thus excluding the dynamic of any cultural and social context. Furthermore, the understanding of recommendation systems design does not have a significant impact, as responsibility is significant in relation to other stakeholders. In this way, the purpose of discussing diversity of selection is not to hold algorithms liable for the flaws of design but to examine how the users perceive them.

A macro-ethical approach can help in better analysis of recommendation systems. This approach is capable of not only considering ethical issues related to algorithms, data, and standards, but also how social and cultural aspects are interlinked with each other (Floridi and Taddeo, 2016). Generally, responsibility is framed by media ethics in terms of two questions: ‘responsible for what?’ and ‘responsible for whom?’ (Ananny, 2016). However, these questions are posed when dealing with technologies and occupations that are comparatively stable and understood well enough to explain how they act and how they should be regulated. It is difficult to have a mutually agreeable framework that can hold social media accountable. The core of such ethical perspective is based on a comprehensive and multifaceted discussion about what “responsibility” means (Scalvini 2020) and what architecture generates the conditions under which an algorithm might be termed as “wrong” (Gillespie, 2014).

Consequently, the value of algorithm convening cannot be subjected to criticism since we only focus on the material outcomes of the algorithms, ignoring the broader aspect of the cultural diversity of the places that produce these associations. Though it may be true that some recommender algorithms are optimized primarily on short-term metrics such as clicks, our standard of analysing the morals, ethics and algorithmic value is rooted in the individual social experiences. Therefore, the present analysis focuses on a multiple dimension of how recommendations are delivered to user’s feed, to what extent this personalization experience is understood, and what sort of assumptions and ethics underpin the cultures that foster algorithm selection.

## **Research Design**

The key achievement of the study is its exploration of TikTok recommendation system is experienced and recognized by social media users. The methodology draws on in-depth interviews and thematic analysis. Interviews were conducted in Spring 2020 with 40 young international adults who had been residing and studying in Netherlands/Rotterdam for 2-3 years. Based on their friend networks, the interviewees (n=40) were recruited through a snowball sampling strategy. Interviewees in this study ranged in age from 18 to 24 (mean = 22.66). The interviewees were predominantly European (n=26, 65%) and North American (n=6, 15%). Significantly more interviewees were female, reflecting campus demographics (women = 24, 59%; men = 16, 41%). Student participants were mainly in their second

year (77.8 %). The sample also reflects the largest demographic of users on TikTok in Europe and North America (Bloomberg 2020; Statista 2000). Though interviewees come from different backgrounds, social classes and countries and thus were socialized differently, it was assumed that they would apply similar forms of moral reasoning to the specific case of TikTok. Saturation was operationalized in order to be consistent with the research questions (Saunders 2018, p.1983).

In general, the interviews lasted for 45-60 minutes and were semi-structured with open-ended questions. Before the interviews were conducted, the questions were first tested on five respondents to check their validity, and a few adjustments were made where necessary. Participants received a general introduction about the study goals as well as the relevance and purpose of the interview. Before starting the interview, the interviewee was informed that they had no obligation to answer the questions. Permission was also requested for the interview to be recorded. To this end, all the interviewees granted the researcher permission, and the interviews were recorded and transcribed verbatim for further elaboration. The interviewees were preventively informed how the study would process their responses. They were also assured that their responses would be used exclusively for research purposes, and all information would be handled with confidentiality and anonymized.

An interview guide with a list of discussion points was written beforehand (Scalvini, 2020b: Appendix 1). At the beginning of the interviews, the participants were asked basic questions regarding their social media habits. Afterwards, the researchers sought information on TikTok, how such a platform is used, and the reasons for liking or disliking it. This discussion led to the main findings of this research enabling the researchers to evaluate the moral responses to traditional social media platforms and TikTok. To a large extent, the discussion covered the questions included in the interview protocol, such as the interviewee's reservations toward the use of specific platforms, and cultural criticisms of social media. In a bid to obtain various experiences and perceptions of the role of algorithmic recommendation systems, the interviewees were asked to browse through their ForYou page and comment about the trending hashtags. The use of open questions encouraged interviewees to express themselves and include additional information freely.

In order to promote a culture of open scientific inquiry, the present study recognizes the value of open data for discouraging research fraud and permitting critical scrutiny. For this reason, the repository of the anonymized transcripts is deposited on Harvard Dataverse (Scalvini, 2020b) in Refi-QDA format. Certainly, the goal is to increase accountability and transparency, but also to encourage a new practice of open data in qualitative research by maximizing the value of the interviewees' contributions and increasing diversity in analysis and interpretation.

### ***Analytic Approach & Procedure***

The data analysis software Atlas.ti is used for managing and coding interview transcripts. Thematic analysis is applied to data interviews to identify and report themes (Braun & Clarke, 2006, p 79-80). Specifically, a combined process of inductive and deductive analysis (Fereday and Muir Cochrane, 2016) is implemented. This approach is adopted to assure the credibility of interpretation and ensuring that the data is grounded in the subjective meaning of the interviewees' words. To ensure the validity of the coding process three steps are followed (Long et al., 2006). The first step (thematic) is based on the immersion in the data to pinpoint emergent themes. The second step (interpretative) includes referring back to the data in order to classify their content using those themes. The final stage refers to the extraction of illustrations and instances of those themes. Following Adams and Raisborough (2010), these steps modified by cross-referencing the themes to finely extract, for instance, respondents' shifts between support and ambivalence for ethical concern.

This method is best suited when ethical concern is primarily structured towards "the self versus obligations to known others" (Flores & Cares, 2012, p. 837) and the awareness of ethical responsibility. Situating the perception of ethical responsibility, moral obligation and choice in the use of social media is important but it is necessary to adopt a reductive understanding of ethical self-expression and avoid overstating self-conscious sensibilities involved in ethical reflection. In order to achieve reliability, two researchers familiar with ethics and qualitative methods compared and contrasted any discrepancies within and across interviews and resolved them by discussing and refining themes definitions. The technique is most beneficial when the primary concern is to understand the ways people feel and negotiate calls to proclaim their moral agency using personal anecdotes in complicated and even conflicting personal experiences in the interaction with social media. If we somehow manage to return

to the data to include otherwise dispersed themes in each respondents' complete response, three-stage thematic analysis can be a valuable analytical method.

## Results

TikTok's 'ForYou' feed varies depending on the preferences of the user. According to the platform's guidelines, the recommendation system takes numerous factors into consideration in order to provide content suggestions. Among other factors, the system generally recommends content from videos that users showed an interest in during the sign-up stage and eliminates videos that users have a history of disliking. Therefore, users do not have to follow any specific content creator. Instead, they rely heavily on what the algorithm suggests to them. Overall, interviewees describe TikTok as a safe space where interviewees can be themselves and feel included in a community of people who are not seeking to promote any products, but are only interested in posting content to connect and engage meaningfully beyond difference.

Interviewees think TikTok offers an accurate representation of society due to the diversity exhibited in its content. Because TikTok is used by real-life people, not models or actors. Its authenticity is also something that stands out among TikTok's social media siblings, an aspect that makes interviewees identify more with this type of content and therefore feel more invited to use the platform. However, interviewees perceive the recommendation system as manipulative. Specifically, they believe that the most critical issue to be addressed is the role the algorithm plays in proposing content.

The present section organizes the findings according to how users perceive the recommendation system, its influence on their experience using TikTok, and to what extent it violates their trust.

### *Diversification in recommendations*

Interviewees discussed how TikTok is effective in implementing a strategy to bring diversification to their feed and give them better exposure to new videos, more talented creators, and different perspectives. There is a large consensus that diversity of content experienced through the ForYou page gives the impression of bringing people from all over the globe closer together. According to interviewees, this diversity of the content improves the overall user experience. Interviewees agree that TikTok provides a balance between their preferred videos and new content or creators on their feed, which gives users a diverse experience. That being said, it is possible that users may get recommendations for videos that do not match their taste or preferences, whereas these videos may have in turn received a greater number of likes and appreciation across the platform. The rotation of such recommended videos also helps them to understand new trends or challenges that are receiving attention from other users and increase interaction amongst users.

According to an interviewee (6:360): "TikTok is a platform that enables everyone and anyone to kind of just be themselves." They therefore consider TikTok a safer space in which body positivity, mental health, and gender fluidity are discussed in a positive light. Interviewees consider there to be a significant number of alternative people or persons who differ from the dominant conceptions of beauty in the Netherlands, North America or Asia (2:224; 9:117). One interviewee points towards the success of videos featuring people with disabilities on the platform. They further note: "[...] this might be to show the world that not everything has to be perfect, or your body can be different than people say it has to be" (2:224). According to one interviewee, on other social media "you're hiding your flaws, on TikTok, you're showing them off" (17:314). Therefore, interviewees appreciate TikTok because it features content that is more aligned to their moral principles of diversity.

Interviewees agree on the fact that on TikTok, they can show themselves more naturally compared to other social media outlets. They also feel it easier to identify themselves with this type of content because it is closer to how they lead their daily lives. Not one of them claims to desire the extravagant lifestyle of an influencer, and thus they admire the simplicity of the lives they see on TikTok. According to an interviewee, on other social media: "you're hiding your flaws, on TikTok, you're showing them off" (17:314). At the same time, they are very critical of traditional social media, specifically of Instagram and Facebook, because these platforms encourage content producers to create a conventional image of the self. Therefore, enhancing diversity is the feature that plays the most vital role in evaluating TikTok as morally 'good.'

### ***See only what you are interested in***

Interviewees find that TikTok promotes a safe space for people with different choices and taste. However, they highlight that through the ForYou page, it is still possible to see a video they do not like or which does not match their taste. Nonetheless, TikTok gives users the option to mark favourite videos and to tag those they are "not interested" in. Moreover, users can also mute or hide videos of any specific user/creator or report any video if it is against TikTok's guidelines. These preferences appear to be considered by the algorithm and reflected through the ForYou feed. The effects of this highly effective recommendation system is to select only videos that users are interested in. The analysis of the transcripts reveals that interviewees feel very comfortable with this recommendation system as they perceive it to promote inclusivity. Interviewees feel reassured with the idea to have found a social media platform on which so many users openly express themselves and embrace each other's differences.

Remarkably, the interviewees appreciate finding a large amount of content that promotes the inclusion of people from a wide range of ages, origins, skin colors, body types, gender identities, and sexualities. One participant agrees, stating further that "you have people from all sorts of backgrounds, people from all sorts of body sizes, genders [...] without people receiving backlash, as commonly on other social media platforms like YouTube, Instagram, and Twitter" (Interview 38:329). Some interviewees argue they feel less alone on TikTok, while on other social media platforms, everyone feels the need to be perceived as 'perfect.' Specifically, TikTok offers the opportunity to browse content from everyone around the world; you "do not just see the same ten people in your hometown" (Interview 38:329). Interviewees share the opinion that since TikTok users can see and discover people from all backgrounds and races, everyone can go viral regardless of where they come from or what they look like. Overall, TikTok has broken the typical norm of social media platforms in this regard, seemingly for the better.

A recurring example of what is considered morally good is the perception of equality, respect and acceptance of difference toward known others in the TikTok community. Interviewees noticed that teenagers use the platform as an opportunity to come out, or "to even just support a cause or even just put it out there that you know they are acknowledging their orientations or just their personality" (6:360). One participant (38:329) commented: "[...] if people are kind of struggling with their gender [...] these kinds of videos can help them feel more accepted [...]." They see an opportunity in TikTok posts to raise public awareness for the acceptance of sexual orientation. Overall, interviewees agree that TikTok videos encourage the expression of users' sexual orientation and might help lessen alienation against people within the LGBTQA+ community.

A frequent adjective used to describe TikTok videos is 'authentic', which is mainly interpreted as something believable that a user feels connected to in some way. Likely, pressing the 'like' button on similar videos featuring inclusivity and diversity corresponds to a search for some kind of self-assurance, including the assurance that users are not alone on some particular level. Therefore, the need of TikTok users to find similar content featuring diversity can be translated as a form or desire for self-acceptance.

### ***Repetitive patterns***

Interviews agree that the ForYou feed is attractive and diverse, but they feel that the recommendation system tends to show similar or identical videos on one after another, sometimes because the videos have identical sound, or they are created by users who are quite similar in their physical attributes. The ForYou page does not recommend identical content that users may have seen already. However, users very often receive suggestions for videos liked by users with similar interests as theirs. In this way, they mention that, even though they enjoy watching challenges, videos can become repetitive when the algorithm repeatedly pushes for similar content.

Interviews are afraid that TikTok's features, such as the length of the videos, the scrolling feature, the music, and the matching algorithm, make the need to use the application more compulsive. By continually showing users precisely the content they want to see, it is tough for users to close the application or to be aware of the time they are investing in the application. This binge-consumption, as is pointed out by one of the interviewees, can result in a feeling of guilt caused by the "wasted time" they spent on the application, rather than doing something more "productive" (8: 61).

The scrolling feature is cited as the main cause for compulsive behavior while interacting with the application, as one interviewee says: “you can scroll and scroll and there is no end to it” (Interview 16:313). Unlike Facebook and Instagram, content on TikTok is never-ending, since the algorithm is always going to forward new content to its users, and by having such a simplistic way of working (scrolling), people lose track of time (36:158). One interviewee describes this:

.. when you watch one video, you want to watch the other one, and another one, and another. It is so easy to watch it, you just scroll down. Also, as one video is over, it automatically goes to the next one. I also think it can be addictive to make the videos if you get a lot of likes and comments, you get encouraged to make another one. (2:212)

The length of TikTok’s video content was also discussed. Interviewees agree that having access to so much content in such a small amount of time, watching videos and getting hooked is very easy. One interviewee explains the addictiveness deriving from a typical TikTok video’s length: “videos in 15 to 60 seconds all have an introduction, a middle and a conclusion, allowing you to watch it and go to the next and the next and the next...” (Interview 14:216). Since videos have everything needed in order to be catchy in such a small amount of time, the user is not aware of the amount of added time that can pass while watching a hundred TikTok videos. The brevity of the videos makes it very hard for the user to lose concentration.

Certainly, interviewees are able to recognize the algorithmic intervention: “The algorithm recognizes that the content is not what I’m interested in” (Interview 10:274). At the same time, participants find the recommendations in the ForYou page intrusive, since they direct users in a specific direction by trying to get them “addicted” (Interview 36:6) to targeted content. Several interviewees mentioned that the endless content and the subsequent compulsivity is the most addictive part of the application. In this way, the algorithm is perceived as harmful because it tries to manipulate and drive users towards specific videos that increase their addiction to the platform.

### ***Protecting the users' viewing experience***

TikTok’s community guidelines place user safety above anything else while setting the recommendation system. Content that includes a graphic medical procedure or which is otherwise considered unethical is not recommended to the users. For example, a video that can be shocking or depressing for users is filtered out and is not eligible for a recommendation. Moreover, spammed content, recently uploaded videos, videos under review, or videos created to get artificial traffic are also not recommended in the ForYou feed.

However, interviewees are aware of the ethical violations of TikTok that have been discussed in the news, such as the safety of minors. These concerns are addressed in the interviews when discussing the nature of the video content that appears on the platform. Interviewees express concern because in the news they read about the presence of pedophiles and sexual predators (Interviews 7, 8), which makes the platform a dangerous place for many of its users. Furthermore, oversexualized content and potentially dangerous challenges are highlighted as problematic for underage users:

There has been a bit of bad press about TikTok; there was a television show that said that pedophiles or people with less good intentions are also able to go on TikTok and they are commenting on younger kids their TikToks, so what do you think for example is essential when a younger child or a GenZer is going on TikTok (35:223).

One interviewee mentions that they worry about the kind of content their young cousin is consuming on TikTok. For instance, interviewees state that some soundtracks have explicit lyrics and are not tailored for kids, classifying this as a drawback from all the positive features that the platform presents. For example,

...it was quite a song that had explicit phrases and not really tailored for kids, it had bad words and stuff. I was surprised that she knew the song. And I want to ask her like, 'so how do you know the song?' . And she told me about it and was like 'Oh yeah I saw it on TikTok' and there's this like challenge about it.

Yeah. That was the main kind of like other kind of drawback but I would say for TikTok's background music (6:34).

For this reason, interviewees think that TikTok should take responsibility for improving the platform to eliminate safety issues for minors.

The algorithm is perceived as very efficient in targeting users but raises concerns regarding the extent to which their data and private preferences are respected. Interviewees are aware that privacy is the major ethical challenge for TikTok: "I often see things on the news that the privacy on TikTok is not really good..." (Interview 7:21). Specifically, interviewees are afraid that data are collected or shared without the user's permission. Additionally, interviewees wonder whether private data may be vulnerable because TikTok is owned by a Chinese company:

I think something on that question is that TikTok is the most important thing facing the western world as it is an app from China. So, I do hear a lot of like arguing about the privacy thing, yeah... (5:23)

Thirdly, irrespective of the degree of security ensured while collecting and storing the data, privacy issues may still exist when the recommendation system makes inferences about a user based on their data. Interviewees argue that users may not be mindful of the nature of such inferences, and they may dislike a particular use of their data if they were informed earlier about it (Milano, Taddeo and Floridi 2020). In this way, they wonder if user data are used in ways that are harmful to their autonomy (Magalhães, 2018).

The lack of transparency of the recommendation system is often highlighted as a major concern. For instance, one respondent wonders why TikTok keeps proposing hypersexualized videos of 'progressive' shirtless, muscular males fighting homophobia or racism (33:33). Interviewees consider some of the recommendations feeding the ForYou page to be questionable because they aimed at persuading or nudging in favor of particular hashtags and social causes. Specifically, participants define the exploitation of body positivity, gender fluidity, or mental health in order to generate traffic as an unethical practice. Most interviewees are also concerned that some content producers might exploit social issues in order to go viral. It is suggested that TikTok could make its method of generating personalized recommendations transparent in order to reduce the threat of violating their autonomy by providing them with details as to why TikTok recommends certain videos.

### **Addressing the Challenges posed by TikTok**

The first research question aimed at understanding how users perceive their experience on TikTok. The interviewees show concern for TikTok's violation of ethical obligations. Safety and privacy are the most evident violations emphasized by interviewees, which is in part due to the fact that the press has reported on TikTok's unethical practices. The main effect associated with privacy violations is the risk of unfair use of personal data to harm users. Hence, according to interviewees, privacy concerns can be best considered in terms of risk exposure. Personal autonomy and identity-related issues are also linked to the principle of doing no harm. Questionable recommendations can be perceived as harmful, such as when users are subjected to unfair targeting or to the use of manipulative techniques without their explicit consent.

Interviewees are aware of the ethical problems that TikTok represents, but they continue using TikTok. In order to reconcile this conflict, they provide moral reasoning that highlights TikTok's positive, inclusive functions for the individual or society. This aspect is confirmed by how interviewees acknowledge the notion of "ethical responsibility" in an abstract and cognitive manner. Consequently, interviewees focus on the unethical practices of TikTok while maintaining their moral autonomy. Therefore, the outwardness of their ethical orientation is based on the fact that they concentrate on moral actions outside the self. Instead of reasoning in terms of 'right' or 'wrong,' interviewees make ethical judgments in the form of "this will be good for me" or "this will be bad for me." This point is highlighted by the way in which they refer to authenticity through the use of concepts of inclusivity and diversity.

While interviewees have to present their moral reasoning as consistent, they also communicate their ethical reasoning as morally valid according to the public debate surrounding the platform (Grauel 2015). This point shows that interviewees take an inductive approach in which abstract principles do not provide sufficient guidance for making specific moral and ethical decisions (Rest et al, 2000, p. 384). Such rationalization can be classified as either internal in nature (e.g., “it is not harmful to me to use TikTok”) or external (e.g., “the video is actually ‘empathetic,’ so it is not that bad”). Therefore, interviewees locate the focus of morality in their own actions, whereas they justify their ethical decision through looking at society. Interestingly, this form of moral reasoning is associated with the typical judgment of individualistic persons or, in other words, an ethics marked by narcissistic qualities.

The second question focuses on how users negotiate differences between similarity and diversity, namely how users rationalize the tension between a) how the platform’s algorithm feeds users similar videos that they highly appreciate; and, inversely, b) how this recommendation system might limit the diversity of content.

Algorithmic recommendation systems can certainly contribute to diversity (Helberger, 2018). Studies that assess recommendation systems by keeping in view the knowledge extracted from domains of computer science and psychology show that diversity in the recommendation sets boosts user satisfaction (Knijnenburg et al., 2012). According to this body of literature, diversity in recommendations have a distinctive purpose to improve user’s experience (Willemssen et al., 2016). However, TikTok’s recommendation system may restrict the user experience or give limited suggestions by creating a "filter bubble" (Pariser, 2011). Apparently, the risk of an increase in similar or identical videos through the system’s optimization is based on relevance and personalization. This aspect can make some users feel that the content is repetitive, but at the same time keep them engaged with the ForYou page. For this reason, interviewees agree that the content is not there to be diverse, but rather to keep the users interested.

A recurring problem in the use of TikTok is the tension between how the platform’s algorithm feeds users target videos that they highly appreciate and, inversely, how this computational profiling denies the principle of autonomy of the user. Although, TikTok videos appear to satisfy the criteria of diversity that are not different in a sociological sense; instead, they are simply similar in a conscious attempt to create the illusion of being in a more diverse community. In other words, TikTok simply offers the impression of an inclusive space, rather than an exclusive community. Interviewees are prone to consider moral concerns, such as the idea of an idealistic society marked by acceptance and diversity when talking of their experience of TikTok. The individualistic drive of the interviewees can be exhibited through their desire for comfort, for example when they describe that they do not need to adhere to predetermined images, such as body type or sexual orientation, in comparison to other platforms (Facebook, Instagram). It is for this personal feeling of comfort that they rationalize their use of the platform.

This result may partly be explained by the fact that interviewees report their rationalizations in a performative manner in order to avoid feelings of dissonance while attempting to relate to their own self-identity (Berzonsky, 2011, p. 59). This observation leads to the idea that the concept of mediated diversity can explain the tension between the expectation of similarity and diversity in mediated spaces. Therefore, two critical dimensions of moral reasoning can be identified: one that should lead to a more group-oriented mindset, whereas the other dimension focuses on moral orientation from an individualistic perspective. However, from a moral perspective, adequately addressing diversity in everyday life would involve satisfying the desires of the inner self while managing the complexities of daily living.

For these reasons, the opacity of the algorithm recommendation system could be resolved by making transparent the principles adopted in generating personalized recommendations on the ForYou page. Such principles could be codified in the community guidelines. TikTok makes very explicit what kind of content cannot be published and the rules that can lead to the suspension or banning of a user from its community, but it does not provide clear details of the reasons why some particular videos are recommended and what kind of private data is retained for matching videos and the user’s interests. Even though the intention of TikTok is morally ‘good,’ one should consider the consequences for the users when applying any automatic filters. Social media must ask to what extent they are creating a community in a responsible and shared way. Automatic scans and filters are only acceptable if their

designers can decipher the user's perspective and motives without manipulation, thus not threatening the autonomous nature of the user (Mittelstadt et al, 2016, p. 9).

In conclusion, the case of TikTok provides an excellent opportunity to study the moral reasoning of a sample of TikTok's user community and what they consider to be "diversity" and "similarity" in terms of algorithm selection. While ethics is conventionally understood as the work involved to discern 'right' actions from 'wrong' ones, it is more precisely a field of inquiry that focuses on examining the quality of our deliberations when dealing with moral dilemmas (Scalvini, 2020). As such, ethics rarely provides clear answers about the best way to handle solutions. Rather, it offers an opportunity to combine empirical research with normative-ethical analysis and reflection (De Vries & Gordijn, 2009). An empirical-ethical approach can indeed help in the better analysis and design of algorithmic recommendation systems.

This approach is capable of not only considering ethical issues related to algorithms and the ethical responsibility of their creators, but also how social problems are interlinked with each other. However, it is difficult to empirically address issues such as violation of individual autonomy, primarily because these ethical definitions are abstract. Nonetheless the study still proves the need to use these concepts in the light of the particular social context in which they work (Milano et al, 2020). Moral reasoning varies according to values and norms shaped by the cultural and social context. Therefore, future research could also focus on intersectionality to understand to what extent individual differences in moral standards influence the ways users evaluate a violation of ethical standards.

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