

For Me or Not for Me? The Ease With Which Teens Navigate Accurate and Inaccurate Personalized Social Media Content

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ABSTRACT

Social media apps present personalized content to users. Such content is often described as “for you,” raising questions about the relationship between users’ sense of “self” and the “you” that is represented. Answering such questions is pressing in the case of teen users whose identities are still forming. Thus we ask, “What do teens think about the relationship between personalized content and their sense of self?” We interviewed teens aged 13 to 17 ($n = 15$) about their experiences with personalized content on social media. Participants so routinely saw themselves accurately reflected in personalized content that they noted the occasional inaccuracy with surprise, while simply scrolling past it. Our findings point to: the normalization of data doubles in the form of personalized content; and teens’ indifference to inaccuracies presented by such data doubles.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**; • **Security and privacy** → Social aspects of security and privacy.

KEYWORDS

Teens, social media, personalized content, identity, algorithms, data doubles, privacy

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1 INTRODUCTION

As of 2022, two thirds of teens aged 13 to 17 use TikTok – nearly one in five use TikTok “all the time” [51]. Almost as many teens use Instagram [51]. Such platforms routinely provide users with personalized content described as “for you,” thus providing ample opportunity for users to encounter accurate and inaccurate “data

doubles” [25]. Coined by Haggerty and Ericson, the term “data doubles” refers to data-driven representations of people that emerge from surveillant assemblages [25] – what might be thought of as infrastructures of “networked privacy” [32, 33].

While much research has investigated people’s *awareness* of algorithms (e.g., [15, 23]), less work has investigated the relationship(s) between personalized content and *teens’* sense of “self” – a sense that is still developing as a function of *being* teens. Yet such effort is required: algorithms shape people’s emotional landscape and concepts of self [48–50].

Teens who have grown up alongside personalized social media algorithms may have developed strategies for disentangling or merging two forms of the “self”: that which is known individually, and that which is presented through personalized content (i.e., “data doubles”). If teens know that personalized content results from the collection and analysis of data traces they leave behind, does that knowledge make personalized content more or less authoritative in relation to their sense of self?

In light of this broader question, our work is motivated by one exploratory research question:

RQ1: What do teens think about the relationship(s) between personalized content and their sense(s) of *self*?

To answer RQ1, we conducted semi-structured interviews with teen TikTok and Instagram users (aged 13–17; $n = 15$). Interviews focused on eliciting participants’ perceptions of how algorithmically personalized content relates to their sense of self. Through reflexive thematic analysis [11, 12], we found that teens have naturalized the receipt of personalized content, easily recognizing themselves in their social media data doubles and casually ignoring inaccuracies reflected by such doubles. Indeed, participants described being in “casual” control of algorithms that reflect the person and the “vibe” they want to see. Participants indicated awareness of how personalized content algorithms operate (i.e., possession and deployment of mental models); such awareness appeared to instill confidence among participants regarding their ability to influence personalized content algorithms. Further, we found that when participants encountered personalized content that was inconsistent with their sense of self, they often attributed the receipt of such content to an accidental click or a larger trend within the platforms they use. Encounters with inaccurate data doubles in the form of personalized content did not especially concern our participants.

Our work provides the following contributions:

- description of how teens understand and manage the relationships between (1) their sense of self and (2) personalized content; and

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- evidence that teens are adept at navigating encounters with accurate *and* inaccurate data doubles in the form of personalized content.

In the sections that follow, we engage with relevant literature in order to ground our research question. We then describe our method, including the sample, interview protocol, and analysis. We present our findings and situate them in discussion and implications. Finally, we describe limitations and future work and provide a summary conclusion.

2 RELATED WORK

In this section we ground RQ1 in relevant literature from two areas: (1) algorithmic awareness and resistance; and (2) digital privacy in relation to teen users.

2.1 How Users Make Sense of Algorithms

Social media users generally demonstrate *some* awareness that algorithms shape the content they see [23, 24, 37]. Such awareness often takes the form of folk theories [19, 21, 22, 29, 46], which occasionally yield “strategic knowledge” about algorithms [3] and the ability to “game” algorithms [1, 14, 17, 35]. Some evidence suggests that social media users – particularly from marginalized populations or populations whose presentation of self is vulnerable (e.g., [34, 45, 46]) – at times actively resist algorithmic interpretation (e.g., [14, 22, 29, 35]).

While the precise mechanisms of content-filtering algorithms are obscure to many users (e.g., [23]), people are known to alter their behavior in order to manage the personalized content they see [38]. Such management is effort-intensive [47]. Feelings of being profiled, tracked, and subjected to upsetting content in the “algorithmic imaginary” [15] possibly justify the exertion of such effort. Engagement with algorithm-oriented management may also be explained by the extent to which users are concerned with or interested in algorithms themselves (e.g., [4, 14, 35]). Recent research suggests that teens are mostly concerned with their digital footprint in relation to people they know, rather than, for example, in relation to government surveillance [30]; and certainly marginalizations can play a role in determining the threat model landscape [34].

Yet strikingly little work has investigated teen users’ sense of self in the absence of the identity politics of intersectionality. While such work is obviously important – we have an obligation to understand how people whose identities are systematically marginalized navigate social media algorithms and harms (e.g., [45, 46]) – the assumption that “identity” is always reducible to membership in demographic categories presents a broader confound: it filters research about the algorithmically-mediated experience of the “self” (i.e., a process that occurs at the scale of the individual) through the same statistical mechanics that allow for personalized recommendations in the first place (i.e., at a scale of *governmentality* [16]). We constructed the present study to address this theory-oriented gap in the literature. We do not contest the validity of intersectional and/or demographic approaches to identity, but we ask RQ1 in order to understand the more personal, and less statistical/governmental [16], experience of personalized content.

2.2 Algorithms, Privacy, and Teens

We cannot answer RQ1 without acknowledging the importance of privacy. Algorithm perception and privacy are inextricable in the sense that recommendations *for you* are a result of algorithms that *interpellate* “you” [18].

The SIGCHI communities have generated a great deal of knowledge about how teens navigate networked privacy [32, 33]. Early research suggested that few teens manage their privacy (e.g., [2, 6, 28]). More recent literature, however, indicates that teens are knowledgeable about the risks associated with online media and surveillance (e.g., [31, 36]) but sometimes feel powerless to do anything about it (cf [41, 43] regarding a general trend). This shift in perception highlights the need to explore possible differences in how separate generations of teens (i.e., rather than “teens” as a homogenized category) approach privacy online.

Marwick et al. found that belonging to a marginalized community amplifies risks online and contributes to social media abstinence and self-censorship [31]. Indeed, other research suggests that young people do take steps to ensure their privacy and that paradoxical privacy-related behaviors are more about disempowerment and constraint [9].¹ Both boyd and Marwick showed that teens *do* care about their privacy but that their privacy-related behaviors are shaped by structural conditions (e.g., surveillance and policing of minority neighborhoods) [31] and by different notions of what privacy contexts are [7]. Yet the relationship between privacy concerns and whether personalized content reflects or challenges *teens’* sense of self remains an open question.

3 METHODS

In this section, we describe participant recruitment, data collection, and our mode of analysis. All procedures received IRB approval by our university.

3.1 Participant Recruitment and Demographics

We enlisted a US-based recruitment service to assemble a sample of participants. Table 1 presents a summary of participant demographics. Recruiters contacted parents of teens aged 13 - 17 from an existing list of willing research participants. Parents who were amenable to their teens participating in our research gave informed consent. Their teens were then screened to confirm demographic information and ensure that: (1) they were able to identify algorithms that they think about on social media they use; and (2) that they thought about such algorithms with some frequency (i.e., occasionally, very often, or all the time). Participants (i.e., 15 teens aged 13 - 17) provided assent at the beginning of interviews after the study was described to them.

3.2 Data collection and Analysis

We interviewed each of the participants described in Table 1 via Zoom. Interviews were conducted anonymously and without video. Interviews ranged from 30 minutes to 50 minutes. To protect participant privacy – and because we are concerned with salience

¹First introduced by Westin [52], the concept of the “privacy paradox” describes a disconnect between people’s attitudes toward privacy and their privacy-related behaviors [27].

ID	Age	Gender	Sexual Orientation	Race
1	14	Male	Hetero	Asian or Pac Isl.
2	15	Male	Gay/Lesbian	Hispanic or Latino/a/x
3	15	Female	Hetero	Asian or Pac Isl.
4	17	Male	Hetero	Black
5	17	Male	Gay/Lesbian	White
6	14	Female	Bisexual	White
7	14	Male	Hetero	White
8	15	Female	Pansexual	Hispanic or Latino/a/x
9	13	Male	Hetero	Hispanic or Latino/a/x
10	13	Male	Hetero	Black
11	16	Male	Hetero	Black
12	15	Male	Hetero	Hispanic or Latino/a/x
13	17	Male	Bisexual	Hispanic or Latino/a/x
14	17	Female	Hetero	White
15	17	Male	Hetero	Hispanic or Latino/a/x

Table 1: Participant demographics including age, gender identity, sexual orientation, and race/ethnicity.

rather than counts – we do not report participant numbers in the presentation of our findings.

We used a semi-structured interview protocol to guide our interviews. Our protocol included questions about: (1) participant perceptions of their identity/self; (2) social media use; and (3) engagement with and impressions of personalized content (i.e., “for you” content). Interviews focused on participant experiences with personalized content recommended on TikTok and Instagram because these were the platforms most used by participants.

We deployed reflexive thematic analysis (RTA) [11, 12] to analyze interview data. We engaged in iterative processes of open coding, identification of candidate themes, and, finally, the construction of a representative narrative involving final themes. As noted by Seberger et al. [42, p.9], Braun et al. specifically described RTA as involving the deployment of inference, domain expertise, and analysts’ personal experience in order to generate a “compelling interpretation” from data [13, p.848-849]. Within such “compelling interpretation,” it is possible for themes to contain subthemes that tell seemingly contradictory stories, and in doing so “demonstrate [a] hierarchy of meaning” [10]. For instance, the subtheme “casual control” was developed as a result of codes that cross the deductively separable, but inductively related, final themes of “Perceived Alignment” and “Perceived Misalignment.”

4 FINDINGS

Here we present the results of RTA. We focus on two final themes: first, Perceived Alignment between personalized content and participants’ sense of self. Second, Perceived Misalignment between personalized content and participants’ sense of self. Before engaging with these themes, we briefly describe the privacy-related backdrop of personalized content as our participants described it.

4.1 The Privacy Backdrop

Participants universally acknowledged that their online behavior is tracked. They also acknowledged that tracking is what allows

for the production of personalized content. Yet these acknowledgements did not always imply complete comfort with being tracked:

I guess it just kinda weirds me out that, like every single thing I click on and I look up is just right there [...] Where’s me at? [...] I have to like face all my random thoughts that I have throughout the day.

In fact, discomfort was uncommon among participants. Yet it highlights the importance of understanding how teens perceive of, and interact with, the results of tracking. It further highlights the relationship between identity and personalized content as a site of ongoing negotiation (e.g., “Where’s me at?”). Thus, the data doubles that emerge from personalized content are always already contextualized within a broader discourse of “privacy.” For all participants, receiving personalized content was a naturalized experience: they expected and appreciated it as a feature of life online. Yet persistent problems of “privacy” (i.e., the ongoing transformation of “privacy” as a discourse) underlie all of the findings described below.

4.2 When “For You” Really Is For You (Perceived Alignment)

4.2.1 Personalized content is based on what you do. Participants felt that personalized content was representative of the identities they described during initial phases of interviews. Participants deployed mental models of personalization algorithms to explain such representation and how they can influence what they see. Most participants, like the one quoted below, imagined that what they see is related to what they like or how long they watch a given video:

Usually after a couple videos, if I like them, soon after there is something that’s related to it. So I always think in my mind, ‘If I like this video, I know I’m going to get more of these things that I always like.’ I always have that in the back of my mind.

Participants further acknowledged the extent to which data tracking blurs boundaries between life “online” and “real life:”

I’ve gotten used to the fact that things I liked in real life were on my phone and social media. I prefer it to be specialized, so I don’t get content I don’t agree with.

Yet while many participants believed that personalized content on TikTok and Instagram reflects “who they are,” they were generally aware that they see content because of how they interact with it and because of what we might call the networked culture in which they exist. While participants generally perceived of personalized content as reflective of their identities, they often acknowledged the shallow relationship between online actions (e.g., liking, following etc.) and identity:

I get a lot of stuff about music-related things, because I’m really into different bands and stuff. So I get a lot of posts about, you know, David Bowie, or My Chemical Romance. Those are bands that I follow a lot. So I guess stuff gets recommended to me for them.

4.2.2 Casual Control. Participants described feeling “in control” of the personalized content they receive. Yet such participants indicated that they don’t work hard at pre-emptively curating personalized content:

I sort of influence what I see on social media. [...] I think I definitely thought about it before, because, you know, I’ll, like, look something up in the search bar, and I’ll scroll through that for a little bit. And then the next thing I know my explore page, I have a bunch of like posts of that type of stuff.

Such descriptions of casual control over personalized content – the “sort of influence” described above – challenge findings from prior work that portray algorithm maintenance as labor-intensive. Indeed, when participants encountered personalized content that did not align with their sense of self, they quickly attributed such content to prior accidental interactions (i.e., clicks) with content.

4.2.3 Not just what I like but who I am. Participants believed that personalized content provided via social media reflects not just the content they like and consume, but the kind of person they are. One participant described themselves as “kind” and “respectful.” As such, they expected personalized content to reflect those facets of their identity. This extends not just to the content but the nature of discussions (e.g., kind and respectful).

If I look up something that is important to me that will show up as one of the top posts [...] and] it’ll show like people [like me] that are having a nice discussion.

Another told us that they present “upbeat” or “energetic vibes” on social media and expect their feed to be mostly or entirely positive as a result.

Most participants seemed to take for granted that algorithms show them content because they “interact with it” (e.g., like or watch it more than twice) or “searched for it” or followed certain people or posted certain things (on Instagram). However, some participants pondered the larger implications of receiving personalized content:

It just makes me think more about how it all works.

4.3 When “For You” Really Isn’t For You (Perceived Misalignment)

4.3.1 Misalignments are easily explained. Participants noted instances in which personalized content did not align with their sense of self. When participants receive personalized content that is perceived to be misaligned with their sense of self (e.g., “hyper-masculine content” or “nasty” content), they try to justify why they received such content. Sometimes they are stymied:

Every once in a while I’ll get something like hyper-masculine, like, weight training videos which I don’t. I don’t know why it gives me that. I don’t interact with that kind of stuff.

Yet participants generally felt that all personalized content is connected to what they have done – for example, accidentally clicking on a “kid video” and subsequently receiving personalized content including videos for children under the age of ten.

On occasion, participants said that when they encounter something that is not consistent with their identity, they might review

what they have clicked on or done online and decide whether it is linked. Some participants assumed that they must have interacted with related content without knowing, or that something is trending if it’s completely out of character. However, participants occasionally entertained the idea of their phone engaging in ambient listening. Such considerations highlight the overall perceived accuracy of personalized content, especially on TikTok: participants viewed TikTok’s “for you” content as so accurate as to not only be responding to “interactions” (i.e., data traces that represent prior online behavior) but potentially listening in:

At some point I saw something about that show, maybe on TikTok, and I interacted with it without actually realizing. Like, just sort of in the back of my mind. And I didn’t process it. And then I just sort of kept it in my head. Does that make any sense? So I think it’s something like that. But I know a lot of people think that, like, you know your phones listen to you and stuff like that which also a possibility [...] I’m trying to think like creeped out like. I don’t know. Like, is it listening to me? Or, you know, stuff like that?

That some participants consider the possibility of ambient listening to justify the receipt of mis-aligned personalized content highlights their expectation that personalized content *should* be accurate and reflective of their identity.

Nevertheless, most participants noted that when they encounter inaccurate personalized content, they just keep scrolling:

Mostly just like, oh, this is interesting, and I sort of just scroll away.

4.3.2 Misalignments do not challenge sense of self. When teens encounter stuff that’s truly surprising to them – which is rare – it is because it is something they don’t associate with a previous interaction or click. While most ignore it when that happens, others were mostly concerned that it reflected something that they didn’t remember doing and so may have had to question their mental model. It did not challenge their sense of self, however. As one participant said, if they found things in their Instagram feed that were not “targeted towards” them they would be “unsettled” but added that this simply made them think about why the algorithm would do that in relation to prior online behaviors – not *who they are*.

I think if I were to log on to Instagram and on my explore page was a bunch of stuff that was not targeted towards me whatsoever, I’d be a little bit unsettled.

Notably, when encountering personalized content that does not align with their sense of self, the majority of participants noted that they simply ignored it:

I pretty much keep it moving. Just swipe, and you know, keep going about my day.

While participants were generally unfazed by inaccurate personalized content – or else were comfortable “leaning in” (i.e., gaming the algorithm) to see personalized content they want to see – one participant called for oversight from tech companies regarding the provision of emotionally fraught personalized content:

Like, if the website makes it that the algorithm is good, it would show you the same type of videos that you’re

interested in, while also not showing you bad topics that are usually considered not good things. [...] I'm not sure if it's still a thing, but like, if you had searched up like anxiety or depression on TikTok, it would just keep showing you those videos. And then you would actually think you have that, and you would start acting a different way. [...] I would say, algorithms are fine when they're used in a good way, and algorithms are not good when they're just being told to push out the same kind of stuff.

While this participant was, like others, generally comfortable with the ways in which their online behaviors reflect them through personalized content, they indicated a greater concern for other users who they suspect might be more vulnerable (*in theory*). This concern stemmed from the obvious possibility that erroneous or otherwise “bad” personalized content may, in some circumstances, shape others’ identities in negative ways.

5 DISCUSSION AND IMPLICATIONS

We begin this section with a summary of findings in answer to RQ1. For the teens we spoke with, encounters with data doubles in the form of personalized content have become naturalized. Participants were comfortable with a social media world curated by algorithms. They were also comfortable with discerning (and casually influencing) content described as “for you.” For example, if their sense of self is tied to being “kind” or “upbeat,” they expect their personalized content to reflect that. While they may take steps to “tweak” the algorithm, they don’t often find that is necessary – nor did they go to great lengths to do so (cf [38, 47]).

Participants preferred a digital milieu that is customized to them: the best algorithm-generated content on social media reflects what they agree with. They were quick to attribute discordant content to prior accidental interactions or current popular trends, but did not describe discordant content as a challenge to their sense of self. Personalized content that did not align with participants’ sense of self was ignored – participants just kept scrolling.

5.1 What Should HCI Researchers Do?

Given that our teen participants described feeling in control of personalized content and were comfortable both manipulating *and* ignoring their data doubles on social media, what are the implications for HCI researchers?

There is something somewhat concerning about teens’ preference for algorithmic landscapes in which they encounter only personalized content that aligns with their sense of self. For many, this is a way of avoiding depressing, nasty, or extreme content – and that is generally a good thing. But it also shelters teens from diverse perspectives and risk. Researchers and practitioners in HCI are therefore obligated to consider the limits of designing algorithms that merely present teens with what they want to see. Where once data doubles [25] were concerning because of their inaccuracies, presently it may be the case that data doubles in the form of personalized content are *too accurate*.

Given this noted lack of friction compelling teens to actively consider their data doubles (cf [47]), we see transparency around content to be an imperative. Further, we urge HCI researchers and

practitioners to consider an unlikely question: “When are doubles *too accurate*?” Consideration should actively include critical engagement with participatory design and the logics of optimization.

Researchers should explore ways that explanations could challenge data double “accuracy” as a function of behavior and not of *being*. We also encourage short-term steps towards designs that normalize certain privacy protective steps (e.g., limiting cookies, having different search profiles, and turning off location when using certain apps). These would limit the accuracy of algorithms, even if teens don’t necessarily like it.

5.2 The Changing Nature of Data Double

Given the naturalization of personalized content, it is likely that the data double has changed in nature during the twenty or so years since it was introduced [25]. The participants we spoke with were all born well after 2000 (i.e., the point in time at which the “data double” was identified as an effect of then-new surveillant assemblages). Having grown up in a world where data doubles are as normalized as mirrors in a bathroom, participants seem to have developed a particular indifference to inaccuracies in their data doubles – or confidence that they can easily rectify inaccuracies by gaming algorithms (cf [1, 14, 17, 35]). Further research about generational differences in people’s perceptions of personalized content and the data doubles such content represents is needed.

5.3 Moving on from Old Frameworks

We contend that HCI has moved past the era where awareness and understanding of how algorithms work [24] is all that empirically relevant to understanding how teens experience personalized content in social media. We may be ready to move on from literature focusing on algorithmic curation [23] and the potential for mutually shaping content [15]. Understanding algorithmic folk theories [19–21] and resistance [22] is essential, and we applaud such work; but such focus may also distract us from the less active relationship many teens have with their algorithms and resulting data doubles [25]. While we are starting to get a better picture of how teens manage complex online spaces and realities [8, 33], more research is required if we are to understand how teens perceive of relationships between their sense of self and the personalized content they receive as a function of being social media users.

Our analysis uncovered teens’ nonchalance about how recommender algorithms work (i.e., the “folk theories” they deploy). It is possible that participants felt casually in control because they experience little friction. But teens know they pay a price, perceiving that their every click is tracked to the point that every last incongruous detail can be accounted for by aberrant clicks. In the context of teens’ resignation to surveillance [26, 31], we argue that hyper-accurate data doubles may foster further resignation: when your data double is accurate, and its accuracy is rewarding, there is little reason to consider the broader privacy ecology.

5.4 Toward Humanistic Frameworks

Going forward, we must embrace the idea that the contemporary generation of teens is fundamentally different [50]; they are, indeed, showing signs of normalization with regard to algorithms and the extent to which personalized content does and does not reflect their

sense of self. After all, they have been born into an historical period predicated on algorithmic technology – an historical period unlike those in which older generations were born [44].

Personalized content might, in fact, be so well calibrated that there is no room for self-reflection or self-critique – as participants pointed out, they rarely encounter personalized content that doesn't align with their sense of self. That is, if interaction and identity are so tightly coupled, when do we contemplate our selves? The necessity of such a question implies the growing relevance of humanistic epistemologies for the social study of computing (e.g., [5, 39, 40]). Humanistic epistemologies (i.e., modes of knowing that are not primarily grounded in metrication, quantification, and optimization) allow for holistic consideration of users as *people*. In the case of teen social media users, humanist epistemologies can provide frameworks for sensitivity *to*, and exhibition of care *for*, development beyond behaviors like “gaming” algorithms (e.g., [14, 17, 35]). Metrication, quantification, and optimization should be balanced with care for people as *sui generis* [5].

6 LIMITATIONS AND FUTURE WORK

Our sample was comprised of teens who think of algorithms at least occasionally and as such might be more sensitive to the way they influence what they see. Future research should explore comparisons between populations stratified by levels of knowledge about, or interest in, algorithms. Further, although our data was collected as part of a larger intersectionally-oriented study, we did not identify intersectional trends. Future research will aim to explore intersectional differences; additional work is required to determine the scalar limits of intersectionality's relevance.

7 CONCLUSION

We conducted interviews with teen social media users in order to understand what they think about relationships between personalized content and their sense of self. We found that our participants readily identified themselves through and in relation to personalized content on TikTok and Instagram. Our participants also felt in control of personalized content: they described devoting regular, but minimal, mental effort to adjusting their social media data doubles. Surprisingly, our participants were not unnerved or otherwise challenged by the occasional receipt of personalized content that doesn't jibe with their sense of self. Indeed, they just kept scrolling. We note that teens' preference for customized “for you” environments where they only see what they agree with raises some questions about the world teens are inhabiting: a world in which conflicts central to the development of a stable “self” are easily avoided through manipulation of algorithms: a world in which debate, conflict, and even friction are minimized through the naturalized and cool machinations of personalized recommendation.

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