

# White Ignorance and Attention in the Age of Digital Technologies

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In the past few years, digital technologies have received intensifying criticism about the impact that their algorithms have on user attention. In adopting an “attention economy” business model that relies on profiting off of user attention, tech companies have an incentive to engage users in ways that demand increasing amounts of their attention.<sup>1</sup> This business model, naturally, leads to significant costs in terms of diminished attention, including decreased academic and social outcomes for students, increased inability to attend to salient social problems, and, strikingly, diminished overall attentiveness even when one is not actively on their device.<sup>2</sup> Moreover, the addictiveness of social media as products that one cannot realistically distance themselves from and that co-opt their users to become more addictive raises serious moral considerations.<sup>3</sup>

In satisfying their demand for attention, digital technologies—we focus specifically on social media platforms, search engines, news applications, and other technologies that influence epistemic processes—are designed to take hold of user attention. Such attention-capturing technologies, sometimes referred to by scholars as “adaptive algorithms” or “behavior modification,” aim to direct and maintain our attention on specific content for as long as possible.<sup>4</sup> Standard practices associated with attention-capturing technologies include the use of cookies to track user habits and target users with personalized content, the use of clickbait to drive traffic to certain webpages, and behaviorist reward structures that keep users engaged.<sup>5</sup> Because of the finite and zero-sum nature of attention—paying too much attention to one thing inevitably entails paying too little attention to another—to the extent that attention-capturing technologies make it difficult to pay attention to things

that we ought to pay attention to, they compromise our ability to be aware of important issues. To foreground this feature of digital technologies, we refer to them as attention-compromising practices (ACPs).

ACPs have increasingly been the subject of criticism due to their economically exploitative nature, embedded racial and gender biases, and the broad threat that they pose to democratic societies, among other things.<sup>6</sup> In this paper, we set aside these broader implications and present a limited argument against the use of ACPs, which pertains to their likelihood to contribute to epistemic injustice. Specifically, we build on Charles Mills's account of white ignorance to suggest that the existence and prevalence of white ignorance is facilitated by the use of ACPs, which impede race-related knowledge acquisition that is conducive to the disruption of white ignorance.<sup>7</sup> This mode of maintaining white ignorance operates at the level of attention which is logically prior to the cognitively distortive mechanisms that Mills identifies. Our aim is to therefore broaden our understanding of how structural forms of ignorance work beyond the impact of cognitive biases, which are typically the focus of scholarship that examines how well-meaning people may contribute to the maintenance of racial oppression. This exploration also extends work linking ACPs to cognitive biases, by focusing on ACPs' contributions to educational injustice. It should be noted that, while we restrict our argument to issues of white ignorance due to space limitations, we believe that the implications of our argument extend beyond race to other structural forms of ignorance that preserve the social advantages of dominant groups along lines of gender, class, ability, and more.

The paper proceeds as follows: First, we outline Mills's account of white ignorance and the cognitive distortions that allow it to propagate. Next, we explain why attention is distinct and a higher-order process than the cognitive processes that Mills describes. We then discuss the kinds of ACPs that digital technologies rely on to capture and monetize on user attention. This is followed by an analysis of the wrongs of ACP usage. These include the wrong of white ignorance and wrongs inflicted on digital technology users as knowledge producers and receivers.

## DISTORTED COGNITION AND WHITE IGNORANCE

The term *white ignorance* was coined by Mills to describe the peculiar situation wherein whites have constructed a world that is racially beneficial for them and simultaneously conceals the racialized nature of reality from them. White ignorance is not simply a passive lack of race-related knowledge but a way of knowing that maintains racial hierarchies by propagating falsehoods and actively concealing information about the racialized nature of society.<sup>8</sup> It is a kind of “nonknowing that is not the innocent unawareness of truths to which there is no access, but a self and social shielding from racial realities that is underwritten by the official social epistemology.”<sup>9</sup> In exploring white ignorance, then, Mills does not only aim to describe what kinds of knowledge whites lack, but rather what processes make it so that whites are less likely to possess knowledge that accurately reflects the racialized nature of society and, in doing so, facilitate the reproduction of white supremacy.<sup>10</sup> Mills therefore explores patterns of race-based ignorance—including “both false belief and the absence of true belief”—to determine how they impact differently positioned members in a white supremacist society and what processes allow such ignorance to reproduce.<sup>11</sup>

In examining the source of patterns of race-based ignorance, Mills focuses primarily on cognitive processes.<sup>12</sup> Specifically, he shows that cognitive processes like “perception, conception, memory, testimony, and motivational group interest” are distorted through socialization in a white supremacist society and influence one another in ways that maintain dominant narratives and the white ignorance that these narratives presuppose.<sup>13</sup>

How these distortions occur is, of course, well established. Mills demonstrates clearly that our conceptions are impacted by our social milieu, which largely delineates the shape of our linguistic capacity and hence the scope of intelligibility. Relatedly, our perceptions are not neutral but rather influenced by our conceptual apparatus. In white supremacist historical contexts, for instance, the conceptualization of Europe as exceptional and distinct from the rest of the world and of non-European populations as “savages,” enabled Europeans to perceive their expansion as being legitimate and any resistance they encountered

as illegitimate and worthy of violent suppression.<sup>14</sup> Importantly, our beliefs and worldview influence how we respond to new perceptual information, whether this information is favorable to our beliefs and worldview or not. Empirical research, for example, shows that perceptual bias influences one's ability to learn information depending on whether or not that information aligns with one's political beliefs, with motivated cognition constituting an important reason for the presence of misperception.<sup>15</sup> Memory is also error-prone, with exposure to misinformation or social influences often priming people to misremember things.<sup>16</sup> This is only exacerbated by the curation of history to exclude past atrocities which contributes to our collective forgetting of past injustices.<sup>17</sup> As to the role of testimony, Mills demonstrates the ways in which the testimonies of people of color have been historically downgraded compared to those of whites, disregarded, and even forcibly suppressed.<sup>18</sup> Moreover, the work of Miranda Fricker and other scholars of epistemic injustice has established how testimonial injustices impede members of racially marginalized groups from being viewed as credible sources of information.<sup>19</sup>

### COMPROMISED ATTENTION AND WHITE IGNORANCE

We wish to extend Mills's account of white ignorance to consider how attention as a distinct process might contribute to the (re)production of white ignorance. We argue that attention is distinct from, and a higher-order mental process than, the cognitive processes discussed by Mills, and that compromising it has the potential to (re)produce white ignorance regardless of the role that distorted cognition might play.

But what is attention and why is it distinct from the cognitive processes discussed by Mills? Unsurprisingly, theories about the nature of attention abound.<sup>20</sup> Philosophers of education, moreover, have addressed the role of student attention in education, with some even focusing on the impact of technology on student attention.<sup>21</sup> Our aim here is neither to contribute to these debates nor to evaluate how educational technologies reshape the ways in which students or adult learners attend to subject matter. Instead, we want to focus on the connection between attention and white ignorance and how this is mediated by ACPs. This narrow focus, of course, ought not be construed as

implying that ACPs do not impact learning more generally or that the negative learning outcomes of ACP usage do not extend beyond white ignorance. Rather it allows us to zero in on one among many manifestations of the educational wrongs of ACPs with significant social consequences, and in doing so increase our understanding of how ACP usage contributes to educational and social injustice. In light of this, we set aside enduring debates and rely on a recent account of attention advanced by Sebastian Watzl that brings together different strands of theoretical and empirical studies on attention into a coherent whole.<sup>22</sup>

According to Watzl, attention is a sorting mechanism that structures the mind and its content. It organizes “the mind into parts that are central or prioritized and those that are peripheral.”<sup>23</sup> Attention is not one more cognitive process that stands as co-equal to the processes that Mills highlights. Rather, it is the mechanism that sorts these cognitive processes and the stimuli they provide so that, depending on the circumstances, we are prompted to prioritize one cognitive process over another (e.g., attention to perceptions vs. memories), one aspect of a cognitive process over another (e.g., attention to visual perception vs. auditory perception), or even one object of one aspect of a cognitive process over another (e.g., attention to ambient noise vs. a sound that stands out). Attention thus operates on a different level than the cognitive processes that Mills discusses and cuts across such processes such that it becomes relevant to how various cognitive processes materialize.<sup>24</sup>

As a higher-order process, moreover, attention is not limited to sorting cognitive processes. It sorts all relevant mental processes, including affective and conative processes. In this sense, attention is logically prior to the cognitive processes described by Mills as well as other relevant processes of the human mind. Cognitive, affective, and conative processes do not begin to influence the ways in which one thinks, feels, or desires, whether consciously or unconsciously, unless these processes are so structured by attention as to receive priority over other processes.<sup>25</sup> More specific to the cognitive realm—the realm of white ignorance, according to Mills—one cannot even begin to misperceive, misremember, or erroneously disregard someone else’s testimony if the objects of perception, memory, and testimony are not in one’s scope of attention.

It follows that for cognitive distortions that enable the (re)production of white ignorance to occur, attention must be somehow directed toward the cognitive processes that cause these distortions, and toward stimuli thereof. Attention is, after all, a precondition for cognitive processing to occur. If cognitive processes are dependent on attention, moreover, then this is the case for both distorted and veridical cognitive processes. Attention mediates the acquisition of race-related knowledge irrespective of whether this knowledge is true or distorted. White ignorance can therefore also be produced at a higher-order level than cognitive processing, when race-related knowledge is de-prioritized by an epistemic agent through the sorting mechanism of attention.

Yet, attention can also be compromised by external factors, namely, by having one's finite capacity for attention fully occupied with misinformation about race or with unrelated content such that one is functionally unable to attend to accurate race-related information. Compromised attention can then lead to the (re)production of white ignorance either by (1) prioritizing distorted cognitive processes that sustain white ignorance or (2) failing to prioritize veridical cognitive processes that disrupt white ignorance. Pathway (1) is tantamount to the cognitive distortions that scholars of white ignorance of a Millsian persuasion have long been addressing. However, as we show in the next section, pathway (1) can also be significantly exacerbated through digital technology use and the barrage of mis- and disinformation to which users are often subjected. Pathway (2), on the other hand, is relevant insofar as impediments to paying attention can make it difficult to disrupt one's white ignorance, even if one is inclined to do so should the opportunity arise through exposure to knowledge regarding the racialized nature of society. In the next section, we discuss how digital technologies sustain white ignorance through both pathways and how, in doing so, they contribute to a structural form of white ignorance.

#### ATTENTION-COMPROMISING PRACTICES

Attention-compromising practices (ACPs) contribute to white ignorance by compromising our attention to knowledge about the racialized state of the world. According to the first pathway described above, this happens by drawing attention to as much false or misleading information about race as

possible, which makes true information unlikely to register even if noticed by the user. We identify one ACP associated with this pathway: *distortion*. The second pathway involves redirecting user attention toward unrelated information and makes users unlikely to notice true race-related information. We identify two ACPs associated with this second pathway: *diversion* and *distraction*. In this section we describe how each of these ACPs manifest in digital technologies.

## DISTORTION

The first ACP distorts our attention by making us focus on content that is likely to drive traffic and increase profits—content that is often related to mis- and disinformation. Safiya Umoja Noble has discussed extensively how this occurs, focusing on the impact of profit-driven website rankings on what internet users are likely to encounter when searching the internet. Specifically, Noble shows that search engine optimization can be gamed by content providers and advertisers so that websites that are more profitable for Google appear higher on Google’s search results. The impact of website ranking can have serious consequences for the reproduction of racial stereotypes and white ignorance.<sup>26</sup> In an illuminating example, Noble discusses how white nationalist Dylann Roof, who killed 9 people in an attack targeting an African American Church, was radicalized through a Google search that exposed him to white supremacist propaganda about “black on white crime” instead of accurate crime statistics on government websites or factual content by vetted news and academic sources.<sup>27</sup>

Distortion also occurs through the algorithmic recommendations of social media websites. YouTube’s algorithms, for example, have been shown to increase exposure to misinformation which, in turn, may influence users’ beliefs.<sup>28</sup> Importantly, the use of algorithms has been shown to impact not only the prevalence of, but also the likelihood to believe, misinformation. In examining the likelihood to believe misinformation about Muslim congresswomen, Saifuddin Ahmed and Teresa Gil-Lopez found that “frequent users of YouTube search features susceptible to personal biases and algorithmic influences are more likely to believe in the inaccuracy of misinformation and are also more likely to share them on their social media.”<sup>29</sup> In increasing the likelihood of users to

not only believe but also share misinformation, algorithmic use exacerbates the presence of distortive information on the internet and social media platforms, in addition to directly propagating it.

## DIVERSION

The second ACP diverts our attention away from issues of racial justice by drawing user attention toward race-evasive information. Diversion essentially privileges information that is perceived to be irrelevant to issues of race—or “racially neutral”—over information that foregrounds race as a central lens through which to interpret social reality. The race-evasiveness of diversion can be observed both at the structural level of algorithms and in the character of particular content. As to the structural level, race influences the ways in which content is categorized and websites are ranked, such that race-related information may be often unavailable to users who do not know to look for it.<sup>30</sup> This is depicted, for instance, in Charlton McIlwain’s discussion of how a popular black news site, at the time of writing, did not appear on a Google search for the term *news* but appeared in the top three search results for the term *black news*.<sup>31</sup> A black news site was “rendered virtually invisible and ghettoized when searched according to its identified category (as a nonracial, news site),” while highly visible only when associated with the marginalized racial identity of people whom the news site presumably concerns.<sup>32</sup>

As to the race-evasive character of particular content, it can be seen in social media posts and other content that explains away the impact of race on the lives of racialized people. Recent work, for example, has shown how popular posts on Reddit often rely on “colorblind” tropes that downplay the impact of race on people of color.<sup>33</sup> The race-evasiveness of social media posts is further amplified by social media content policies that effectively allow race-evasive content that promotes racist and racialized discourse to propagate, but may prohibit the (re)production of race-forward content that calls out racial injustices observed in society.<sup>34</sup> Insofar as whites do not perceive race to be relevant to their lives then, it is likely that the structure of the internet will reinforce these perceptions by diverting them away from race-forward content.



## DISTRACTION

The final ACP we address distracts users by drawing attention away from urgent social problems like racial injustice and toward increasing amounts of information that, whether relevant or irrelevant, can be overwhelming. This effect of digital technologies is often described as “information overload.”<sup>35</sup> While information overload is not new or unique to digital technologies, its causes are amplified by digital technologies which deliver increasing amounts of information that people have difficulty processing. The amount of information delivered through digital technologies can, of course, be overwhelming on its own, but digital technologies also amplify other factors that contribute to information overload. Such factors include the increasing diversity and complexity of information as well as the ease of access and ever-present availability of new information through notifications. These and other factors relevant to the use of digital technologies can contribute to information overload.<sup>36</sup>

While diversity of information is generally desirable, especially in circumstances of epistemic segregation and exclusion of marginalized knowers from dominant discourse, the level at which it exists in digital technologies can surpass the productive tensions that one would experience at a smaller setting when having a conversation with a diverse group of interlocutors. Instead, exposure to so much diverse content can simply be too much to process and epistemically debilitating to seriously consider. Distraction is thus an inevitable effect of information overload, even in the best of circumstances where mis- and disinformation do not make up a significant portion of the information made available through digital technologies. The volume and breadth of content created and presented to users can exhaust even the most discerning and responsible user, despite their best intentions to uncover the most relevant information about the state and causes of racial injustice in society.

## THE WRONGS OF ATTENTION-COMPROMISING PRACTICES

One can undoubtedly identify many wrongs that result from the use of ACPs, based on the numerous harms that ACPs are thought to cause. The range can incorporate anything from social wrongs, like the destabilizing force

ACPs exert on democratic governance, to individual wrongs, like ones that are inflicted on people *qua* autonomous agents. Here we focus on three wrongs that are distinctly epistemic and educational: a wrong of white ignorance, a wrong to knowledge producers, and a wrong to knowledge receivers.

### WRONG OF WHITE IGNORANCE

The use of ACPs that compromise digital technology users' attention constitutes a wrong in a very explicit and intuitive sense: since ACPs (re)produce white ignorance in society, then ACPs are *pro tanto* contributors to epistemic injustice in the form of white ignorance.

The wrong of white ignorance as a distinct form of epistemic injustice is well established in the literature, so we will not dwell on it.<sup>37</sup> However, we wish to highlight that this wrong is directly related to education. This is because, as Barbara Applebaum's extensive work on the subject has shown, white ignorance can be a significant barrier to effective social justice education.<sup>38</sup> The use of ACPs therefore does not only directly (re)produce white ignorance but also undermines educational efforts to disrupt white ignorance and racial injustice more broadly.

Finally, the wrong of white ignorance when caused by ACPs is structural in nature.<sup>39</sup> This is because it is attributable to digital technologies that aim to capture as much user attention as possible. In being programmed to capture as much attention as possible and to adapt to users' preferences to ensure their maximal engagement, the algorithms on which digital technologies rely cannot be said to be in any meaningful sense responsible for (re)producing white ignorance. Neither was this the intention of the programmers, nor the logic behind algorithmic adaptations. It is the coming together of multiple users under nonideal circumstances and profit-driven corporate incentives that makes this fertile ground for white ignorance to proliferate.

### WRONG TO KNOWLEDGE PRODUCERS

A second wrong of digital technologies' use of ACPs, is one inflicted on users *qua* knowledge producers—we use the term knowledge producers to include both people who directly produce knowledge and people who reproduce

it by transmitting it on the internet, even though they may not be the ones who produced it. This involves compromising users' epistemic agency as knowers who have relevant and important knowledge to contribute and who have a right to do so. This kind of wrong has in recent years been associated with forms of epistemic injustice that impede epistemic contributions. These include testimonial injustice, in which a marginalized person's knowledge contributions are rejected due to a deflated level of credibility that listeners who are prejudiced against their identity ascribe to them, and contributory injustice, in which a marginalized person's knowledge contributions are rejected due to the willful hermeneutical ignorance of an interlocutor who refuses to use nondominant epistemic resources.<sup>40</sup>

Leonie Smith and Alfred Archer have extended this focus of epistemic injustice to matters of attention. As they show, epistemic attention deficits deprive people of the ability to influence conversations in important ways, even when they do not suffer credibility deficits.<sup>41</sup> People who suffer epistemic attention deficits, and therefore cannot command the attention of other knowers, are unable to influence (1) other people's beliefs, (2) what goes on the public agenda, which determines what issues are discussed by mainstream media and what policies are voted into bills, and (3) our collective epistemic resources by making their situated knowledge widely known, if only to be contested by those who are inclined to remain willfully ignorant.<sup>42</sup> According to Smith and Archer, this form of epistemic exclusion causes significant harm to those on the receiving end of epistemic attention deficits, because their morally relevant epistemic agency is compromised by being denied an essential ingredient for actualizing it—namely, attention.<sup>43</sup> Importantly, these harms reflect broader patterns of systemic marginalization and are therefore more likely to harm certain groups of people, entrenching their marginalization through feedback loops of exclusion and attention deficit.<sup>44</sup> This epistemic harm is therefore also a wrong that is significant in its own right.

## WRONG TO KNOWLEDGE RECEIVERS

A final wrong of digital technologies' use of ACPs, is one inflicted on users *qua* knowledge receivers. As with the above case, ACPs compromise the

epistemic agency of digital technology users, only this time by denying them knowledge to which they have a right.<sup>45</sup> The wrong to knowledge receivers is distinct from the wrong to knowledge producers in that it is primarily distributive rather than discriminatory.<sup>46</sup> In this case, ACPs may limit the information to which users have access by selecting knowledge for the user and without the user's knowledge or control.<sup>47</sup>

Since ACPs are often exploited by malicious knowledge producers to spread disinformation, knowledge receivers are also vulnerable to harms that are associated with the consumption of disinformation. For instance, exposure to anti-vaccination mis- and disinformation undermined people's confidence in COVID-19 health interventions. Importantly, although these harms impact all users exposed to disinformation, they disproportionately impact people of color. While 80 percent of all Americans reported encountering mis- and disinformation in at least one social media app, COVID-19 disproportionately affected the lives of people of color, who were also more likely to be hesitant about vaccinations.<sup>48</sup> Vulnerability and susceptibility to disinformation is, of course, not exclusively determined by one's race. Other relevant factors include religiosity, age, level of education, and political ideology.<sup>49</sup>

Digital technology algorithms also reinforce racial biases in ways that render it more difficult for users to escape their grip. Such is the case, for instance, with the hypersexualization of women of color or with the disproportionate silencing of racial justice activists of color whose posts and accounts are flagged as inappropriate.<sup>50</sup> The more users consume content on the internet, the more likely they are to consume racially biased content which, in turn, may reinforce their own biases in ways that make it more difficult to accept information that belies their assumptions and disrupts their white ignorance.

## CONCLUSION

In this paper, we expanded Mills's account of white ignorance to include the compromising of attention as an important mechanism through which white ignorance is maintained. Moreover, we discussed the impact of compromised attention in the context of digital technologies, whose attention economy busi-

ness model distorts, diverts, and distracts user attention such that important information about the state of racial injustice is ignored. This, we argued, leads to wrongs to people of color, knowledge producers, and knowledge receivers. Moreover, as we suggested at the beginning of the paper, the wrongs of ACPs to marginalized groups extend beyond racial identity to groups that are marginalized on the basis of gender, class, and ability, among other identity traits.

To mitigate these wrongs, the impact of digital technologies on user attention ought to be given serious consideration. This is because the use of ACPs has created unique new circumstances that are not easy to disrupt. Relying on individualistic solutions, like persuading people to reduce or be more mindful about their use of technology and increasing individual awareness by offering media literacy education, can be helpful but not sufficient.<sup>51</sup> Similarly, while technological innovations that aim to disrupt epistemic bubbles by exposing us to diverse information can counter the production of ignorance, they do not solve the underlying problems of the attention economy which will continue to find ways to exploit our attention for financial gain and inadvertently maintain white ignorance in one or more of the ways described above.<sup>52</sup>

What are social justice educators left to do, then, when it comes to addressing the role of the attention economy in the propagation of white ignorance? We believe that one promising educational solution is to tackle the root cause of ACPs by embedding ethics education within the professional training that software designers receive. This, in our view, is the best way to ensure that social justice values are reflected in the software produced rather than the biases that are embedded in the algorithms that manipulate our attention or the indifference of tech companies to ethical implications that conflict with their profit-driven motives.<sup>53</sup> This requires more than a tokenistic approach to ethics education in engineering and other computer science adjacent fields. It requires a holistic approach that includes more than a standalone course in ethics and examines the interrelation between software engineering and society, addresses ethical dilemmas that are relevant to software engineering in social contexts, and fosters a culture that is conducive to the creation of technologies that promote the public good.<sup>54</sup>

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