**Chapter 2**

"Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication" (McLuhan, *Medium is the Message,* 8). In this chapter, we will consider some of the criticism tech sociologists have made about social media and discuss the roots of the criticism as side effects of particular design decisions rather than something inherent to online mass communication.

Sherry Turkle, one of the leading tech sociologists of today, explains the thesis of her book *Alone Together* as this: "We are confused about when we are alone and when we are together" (329). This is a more nuanced and defendable claim than the frequent lamentation that people are on their phones all the time these days. Turkle's claim is not one about how the most recent technological device no longer allows us to communicate in more personal ways. Actually, it is not about the devices at all. Turkle suggests that while placing networked communication into our pre-networked lives, we have created virtual selves for whom some constraints of the real selves do not apply; it has certain entitlements. For example, she says of the virtual self: "It can absent itself from its physical surround [...], it can experience the physical and virtual in near simultaneity. And it is able to make more time by multitasking" (155). In itself, these entitlements are advantages of the system, and each marks an ability that is denied to a physical self. However, the problem stems from the confusion of the user between the two selves.

Turkle hammers this point home when she agrees that "we have always found ways to escape from ourselves, neither the desire nor the possibility is new with the Internet" (160). However, she claims, the difference that makes the Internet a worthwhile case study to investigate is its capacity to weave together the virtual and the physical, allow a simultaneous access to both; what she calls a "life mix" that is co-constituted by one's life offline and online. Clearly, this capability does not inherently harm its users, but Turkle's findings suggest that users now allow themselves to partition their attention to the fields in a sense of "continual copresence" (161). In turn, the misuse of these technologies transforms the capabilities and advantages of networked communication into social and personal deficiencies. The ability to experience two worlds simultaneously harms our social interactions in physical spheres, as we begin to think of people as "pausable" (161). Similarly, when misused, the ability to communicate instantly and at any time ironically hinders communication because "when media are always there, waiting to be wanted, we lose a sense of choosing to communicate" (163). The ability to be connected to a wider world is transfigured into a feeling of "always feeling behind" (164), or a fear of missing out; "FoMo". One study defines FoMo as "the pervasive apprehension that others might be having rewarding experiences from which one is absent” and finds that the self-reported feeling is strongly correlated with the user's level of social media engagement (43).

The main pitfall we must avoid while reading Turkle's findings is to regard the negative consequences of networked communication as inescapable conclusions that we must accept from the outset. The capacities that are native to the system versus the misdoings in its perception are clear in Turkle's analysis. Indeed, this is what pushes us to search for a reformation in design, since design stands between the native system and the user that populates, shapes and ultimately realizes the system. The first set of design choices that are relevant in the user's misuse into a "life mix" is ones regarding notification settings.

If the main gate that connects the physical and virtual worlds is the phone screen, especially in the cases Turkle is concerned with where one "moves into the virtual [world] with fluidity and on the go", then the notification icon is the knock on the gate. In Facebook lingo, it is called the "Red Alert Notification" (Internet References, 4). The Red Alert Notification serves as an indicator to the user that some activity that is relevant to her, presumably even personally addressed to her, just occurred in real time. The alert is likely to create a sense of urgency, especially because it arrives in real time and can trigger the aforementioned fear of missing out. Similarly, it is likely to grab the user's attention as a bright red bubble that places itself in the app icon and makes itself readily visible in the user's home screen. Of course, once again, the notification is a capability to alert the user to some relevant activity. However, one must take caution that while serving this purpose, the alert does not induce an anxiety in the user to enter the platform. In other words, the user must have some say in what notifications she gets. These are called notification settings.

When we investigate notification settings of the most popular social media platforms, we encounter many points of deficiency. Facebook's notification algorithm is a prime example (1). Settings regarding app notifications in smart phones are shared between the smart phone settings and the app settings, but phone settings are out of the scope of this thesis. In undetailed terms, smart phones generally have on/off settings for notifications of any specific app, but they do not have any customization ability. Sensibly, more detailed configurations are left to the app settings. However, looking at Facebook's notification settings, we can see that the design lacks many settings that could prevent a user from being confused in the "life-mix" between the virtual and physical worlds.

The main statement of Facebook's notification settings reads: "You can't turn off notifications entirely, but you can choose what you're notified about and how you're notified" (8). This is a reasonable approach, given that users expect to be notified about certain activity, since we have established the ability to be connected in real time as an advantage of networked communication. However, the choice on what/how one will be notified proves to be somewhat of a burden. Using Facebook on the web, the following is the method of altering notifications: "You'll see every notification on Facebook, but you can turn off notifications about specific posts as you view them" (8). This means that Facebook is generally opt-out; the user will get a greedy notification algorithm by default and can change it as he goes through the platform, one by one. Like any opt-out policy, to change the user must have some level of awareness and capability. Furthermore, the requirement that some settings can only be changed individually makes certain changes virtually impossible if the user has become aware of them after some time of using the app. For example, notifications from third party app requests and activity can only be turned off app by app. Currently, I have 132 apps, the only way to turn all of which is to go through 132 clicks (9). Since using the "Continue with Facebook" (10) button on any third-party platform generally puts their app on the list, large numbers such as this should not be rare.

However, even the discerning user might fail to keep up with notification settings due to Facebook's frequent app updates. New settings are introduced or some settings are reorganized with updates, and Facebook generally defaults all of these settings to opt-out. As Android Central notes: "Facebook likes to do a lot of "opt out" rather than "opt in" changes on its app updates" (2). This forces the discerning user to not only engage in the process of changing notification settings once, but to do it regularly, i.e., every time Facebook updates its app. This is especially a burden given that some of the updates can reasonably be perceived as intrusive: "[T]he Facebook app update has added a new notification -- a persistent "ongoing" notification that lives in your notification pull-down" (3). A notification that does not signify any particular activity and re-appears every time it has been responded to fails to capture the purpose of a notification that we have outlined above. Although this is an extreme example that might have been a bug, the point stands that Facebook frequently updates its app, and often does not document all the changes in the description (5). Estimated around once to twice a week, Facebook updates its app with the same description for every update that does not provide any details into the specific update. It reads (6): "Thanks for using Facebook! To make our app better for you, we bring updates to the App Store regularly. Every update of our Facebook app includes improvements for speed and reliability. As new features become available, we'll highlight those for you in the app."

This is not standard practice, since other apps, even WhatsApp and Messenger that are owned by Facebook Inc detail out the specifics of each update in their update descriptions. In the end, the burden to regularly organize one's settings is left to the user, which is one of the culprits for the "life mix" that Turkle criticizes. Especially with "push notifications", which are the red alert notifications that appear in the user's device screen when she is not "actively using Facebook", the only configuration is a complete on/off that the user can change from the smart phone settings (6). Facebook does not have any native configurations to pause all, or any, notifications, either indefinitely or for a time being.

Therefore, opt-out notification settings may push the users to live in the "life-mix" even if the users are not aware of it. We have established that often, our journey in a social media platform begins with our intention to see what the notification is signaling. This is because the icon is not purely informative, but also has an inviting function. Once the user clicks the notification to view it, although he may view the content of the notification in isolation, it is not difficult to get sucked in the platform without noticing. This is not only true for the virtual world, but the physical world as well. Humans are wired to view the world in circumspection. As an example, we can think of a store that has a "50% discount on selected items" sign on the door. Inside the store, the items on sale are likely proximate to the rest of the items. Any shopper knows that once he enters the store, there is a good chance that his attention will move beyond the items on sale, to be grabbed by an item from new season. Once the customer's initial motivation to check out the sales is overcome, the customer is just like any other who has come to check out the whole store.

When this happens during the user's engagement with the physical world, we *experience* ourselves in the platform instead of in the outside world. Just like when we are watching a movie or reading a book, our experience is not purely determined by where we are located, but where our attention is directed. For example, we can imagine a pedestrian who is checking her phone while walking who does not seem to notice our presence. Therefore, the awareness of the physical environment is heavily reduced when one is engaged with the online world.

In an alternative platform with a different design architecture, the platform app can allow the user to make more specific changes in push notifications. To ensure the user still has access to activity that is worth interrupting her offline world without creating a sense of "continuous copresence", the app can at the very least have a "conservative" configuration that is all opt-in, meaning that its default state is no notifications. Since the default settings of current apps are all-permissive, meaning that they require the user to actively opt-out, the conservative configuration can act as a balance and be all opt-in.

Furthermore, this allows users that are less willing/able to change specific configurations to turn off all notifications at times without dealing with the smart phone settings separately, and users that are more willing/able can configure their conservative settings to their liking. All the meanwhile, users that do not wish to engage in any notification restrictions can have a similar experience to the current state without being bothered by these more advanced settings. The tradeoff between opt-in and opt-out is varied, and its complications are discussed in Chapter 3 in the form of a counter argument. In short, the meta-options of "permissive", "conservative" and "power user" can be used to create a balance between flexibility and ease of use. Thus, the user is granted capability to remain offline for a period of time and has a choice in how connected he will be during general use. Finally, the user can be taken to a settings page at the time of signing up to be informed on the default opt-out policies, as this is a natural place for initial configuration settings. She can be introduced to the three options aforementioned during the sign up process as well.

A more radical type of techno-pessimism is found in Siva Vaidhyanathan's *Antisocial Media,* where he seems to argue that "the problem with Facebook is Facebook" (Vaidhyanathan, 1). However, when one examines his arguments, which are valid and well-put, it is clear that there is nothing inherently problematic in social media, and his polemic is with Facebook's design. Of course, we can generalize Vaidhyanathan's arguments to more social media platforms than just Facebook.

Vaidhyanathan recognizes that in Facebook, there is a difficulty to distinguish between different types of content (5). Whether it is a news article, a friend's vacation photos, or a post announcing a loved one's death, all posts have the same basic structure: A description of the event type, a text, an optional visual component (a photo or a video), and the engagement bar (which includes the options: like, share, comment). This invariant structure that is encouraged also by the main form of engagement that is "scrolling through" (5) the feed creates a confusing whirlwind of posts for the spectator. This fact generalizes to Instagram, Snapchat and Twitter as well. Instagram switches the placement of the visual component and the text; Snapchat works with clicks instead of scrolls, and Twitter emphasizes the text more. However, besides small differences, the invariant structure is the same in all of these platforms.

It is a fact of educational psychology that we find it easier to make sense of information when we also have a context for that information, as opposed to a piece of information that is given out of context. When discontinuous posts with similar formats but widely ranging content becomes the units through which we experience social media, the possibility of a context, or a gradient of a story becomes impossible. If it is a goal to retain the information we received during a visit to social media or have an overall understanding of our experience that we keep after the visit, we would need to group relevant posts together. This thesis will not present evidence that users of Facebook have this kind of a goal. Indeed, perhaps users do not want to seriously engage with the platform, but to use it as a distraction without much regard for a longer-term consequence. However, given the claim that social media's potential exceeds its current main use of pure entertainment and distraction, the grouping of the posts (or lack thereof) and the resulting confusion of the user throughout a visit to the platform is a possible culprit.

Furthermore, sponsored ads closely mimic regular posts in the feed. In Facebook, sponsored content has the same three sections, with the only difference being a "sponsored" sub-text. To blend in with regular posts, ads often use videos or news articles that do not make it clear from the initial engagement that they are sponsored content. For example, this body-building app presents itself as a regular engagement page with a video and a survey for its users, which reveals itself to be an ad at the end of the survey (12). Similarly, Instagram's ads are photos posted in the same style, except with a clickable caption, and Snapchat stories include sponsored videos that often begin as a regular story and then reveal themselves to be ads.

This is a useful marketing strategy, since a good number of people have a negative gut reaction to ads, and therefore are more likely to retain information if they first do not recognize it as sponsored. Especially when ads are targeted, the content is often relevant to the users' interests. Therefore, it is not surprising that one might not be able to discern between sponsored content and regular content during a quick scroll-through. Indeed, a recent Stanford University study observed that "more than 80 percent [of participating students] believed a native ad, identified with the words 'sponsored content,' was a real news story" (13). Along with the confusion induced in the user due to the invariant structure of the posts, the indistinguishability of the sponsored content from regular content is prone to creating a distrust in the user, since she may have the experience of engaging with a post that she believes is "genuine", only to find out that it was an ad. Furthermore, a ProPublica study on the US 2018 midterm elections discovered political ads that misrepresented themselves as news organizations, such as "Ohio Newswire" and "Breaking News Texas" (16). Once again, this is a sensible strategy for advertisers, and it makes sense for social media platforms to take advantage of it. However, Vaidhyanathan's claim that users being unable to differentiate between ads and native content is in some way detrimental is insightful and deserves design-oriented investigation.

The invariant structure affects the way social media is used both by the posters and the "lurkers" (a word Internet culture uses to mean spectator). Since the less and more significant types of content are identical in structure, it encourages the lurkers to pay little attention to any given post. Given that the pure entertainment, personally intimate and politically significant are mashed together in a complete similarity that requires active attention to separate, the lurker ends up glancing through the feed, only stopping for the posts that catch her eye. Most of the time, the posts that catch her eye are the more sensationalists ones -- the posts that use a flashy picture or a radical word. However, the attention granted even to these posts cannot be too long, because due to the scrolling-feed, the next post already makes itself visible while the user takes a look at the current post. Furthermore, due to the practically unending home feeds, the user has virtually infinite content that she can scroll through. Therefore, even if she chooses to engage, she is likely to click one of the reaction buttons (like, share, other emoticons), or write a short comment. In the end, leaving the platform, it is difficult for the user to come away with having retained any of the information she has observed. As Vaidhyanathan puts it a bit harshly: "On Facebook babies and puppies run in the same column as serious personal appeals for financial help with medical care, advertisements for and against political candidates, bogus claims against science, and appeals to racism and violence" (Vaidhyanathan, 17).

The invariant structure has a similar trivializing effect on how the poster's use the platform. Since posters are lurkers are not separate groups but the same individuals at different times, the poster is acutely aware of how lurkers scroll through the feed. Therefore, if he wants to be read and engaged with, which we can reasonably assume a poster of a social media platform does, he has to create one of the posts that catch the lurkers' eyes. As previously mentioned, these are the more sensationalist posts that include a portion that is outrageous, unfamiliar, or in some way extreme, so that it jumps out of the rest of the feed with innumerable posts. The lurkers' behavior encourages the posters' behavior, and vice versa, so that in the end, a vicious cycle of lack of attention and reflection from users is sustained.

Furthermore, another criticism targeted at social media falls under the same design choice. In *On the Internet,* Hubert Dreyfus warns us against the levelling effect of organizing a platform without a concern for inter-post context(75). Due to the undifferentiation of the content of each post, the user cannot help but view all posts with the same mentality; she automatically equalizes them in value. During a scroll through, it takes conscious work for a user to identify what group any post belongs to, so she must view them on the same grounds. Then, since the post that is not significant (say, the puppy photo) cannot elevated to the status of significant, the opposite happens; all posts are viewed from a place of "detached reflection" (72). In Dreyfus' terminology, this is a type of virtual nihilism in which no matter how essential the content of a post is, it cannot move the user to engage in a way that demands work. In other words, the posts are not likely to push the users to take action that extends outside of the platform, since the ones that have that capability are drowned by the ones that only demand an in-platform engagement. In his words: "Nothing is too trivial to be included. Nothing is important that it demands a special place" (79).

Dreyfus cites Kierkegaard as denouncing the press because it makes all information immediately available to everyone. Doing so, it deprives the reader of any notion of what is more local, more relevant, and what is not. Thus, the reader is reduced to the lowest common denominator in which he can make sense of all of the information. However, this common denominator, by absolute inclusion, becomes infinitesimal. Therefore, the reader's grounds are absolutely abstract, such that he "[cannot have] an essential engagement in anything" (76).

That being said, we must recognize that information about the trivial, as well as the serious, is a function of social media. One could moderate posts to rid the platform of trivial posts, but this would take away from what social media has to offer now. Therefore, our solution cannot be the strict moderation of all social media platforms.

Instead, we can make use of another type of social media that is rarely a part of the discussion. If we were to bifurcate social media platforms according to how they are organized, Facebook would fall under those that bring users together by common history. On the other end of the spectrum, platforms such as Reddit, Quora and other forums have organizations that make the prior history between users irrelevant, and instead focus on grouping similar types of content. In many of these platforms, user do not even know each other, since the norm is anonymity. Through "threading", which is the categorizing of content depending on its subject matter, these platforms create different local structures with independent communal norms. We can imagine a version of the friend-based social media platforms that adopt threading, so that the claim that "nothing [...] demands its special place" can be superseded.

A similar levelling issue in current friend-based platforms stems from most platforms' lack of a capability to differentiate between user groups. Whereas our physical lives are governed by different sets of norms and rules depending on the social circle we are in at a given moment, social media platforms by default conflate all circles into one home feed, and only some of them allow for a different grouping at all. Therefore, we cannot dictate how we would like to interact with a certain group of people; we must cater to the entire mass following. One way to show the inadequacies of having to target all of one's following in each post is using Sartre's explanation of an extreme anxiety that comes from the feeling of being watched by an unknown other.

Social media platforms are designed in a way to encourage the dissipation and visibility of one's material. When the user posts, the tendency (and perhaps the purpose) of the platform is not to keep the post private but make it available to the public. Even though there are a few options for the user to target a specific group of people in the post, they are not made to be the primary use case scenarios of the platform. For example, Facebook allows for the user to create a group for "best friends" and target a post towards this individual group, but the default is still to make the post public to all of one's connections. Similarly, Instagram allows the user to make his profile 'private' such that he has to approve every user that gets access to the profile, but the default setting is that all profiles are open to the public.

Furthermore, both platforms have a "suggested friends" bar that appears in the middle of the feeds of both. Thus, the user is continuously encouraged to make connections with new people. Finally, there is no option to keep a post unshared; any given post the poster posts can be shared by any of its recipient, making it virtually impossible for the poster to get a hang on the users her post will reach. One way in which we can see that this has bothered some users through the evolution of the concept of a "Finsta", a secondary account that the user only tells her closest connections and feels free to use the platform in a more unfiltered way.

Using Sartre's concept, the poster who is not comfortable with the potential audience of her content experiences a peculiar anxiety of being watched by the Other. The Other is a particular individual that observes her judgingly. Recognizing the presence of the Other, the poster can no longer be herself, because she does not experience herself as a subject: "By the mere appearance of the Other, I am put in the position of passing judgment on myself as an object, for it is as an object that I appear to the Other" (Jean-Paul Sartre, *Being and Nothingness*, 392). Even if the individual is not correct about her being watched by the foreign Other, the mere appearance of being watched causes the loss of subjectivity. Furthermore, The Other is not merely a revelatory power; it changes the subject's being: "All of a sudden, I am conscious of myself as escaping myself, not in that I am the foundation of my own nothingness but in that I have my foundation outside of myself. I am for myself only as I am a pure reference to the Other" (403). Thus, the subject loses her subject-hood, and becomes an object of her own experience (408). No longer a master of her own self, the user experience what Sartre calls an existential anxiety.

Once again, it is not native to the concept of social media that the poster must feel such an anxiety. The user experiences the look of the Other only when she feels that there is a possibility of another stranger user, for whom the post was not intended, seeing her post. To be fair, the age of the Internet holds that any information that is documented might forever remain on the Internet, but there are ways in which a social media platform could alleviate this anxiety.

Similar to our previous recommendation, we can see a platform that while separating content by subject, can also create a distinction between mass following vs following by group. Making "following by group" -- or navigating the social media platform in the framework of different groups -- can fix the problem of the gaze and the alienation and mistrust it creates. Different levels of significance and intimacy should be separated by design. As Vaidhyanathan explains: "Different forms of friendship have distinct layers and values embedded in them and operate by different norms" (Vaidhyanathan, 47). Therefore, the conflation of different layers causes a reduction to lowest common denominator, a denial of strong forms of engagement, and an anxiety caused by the possibility of invasion of one's intimacy. By having concretely separated communities with differentiated and explicit norms to which each post is "tagged", the user can choose to view them in mixture or in curation. Having different communities will also make the platform more viable to having pages with ends, so that the experience does not feel infinite, contributing to the "fear of missing our" articulated by Turkle. Furthermore, partially responding to this problem, Instagram recently rolled up a "You are all caught up" feature that allows the users to get a sense of natural conclusion to their time in the platform. (44)

  When there is practically infinite content, curation consumes content. What we experience is no longer a function of what content is available in the planform, but how the platform curates the ordering of the content. Therefore, the question of how platforms curate their content becomes one of the fundamental questions of our experience of social media. With this in mind, the last critique we will consider, articulated by Vaidyanathan and Zeynep Tufekci, concerns the curation of social media platforms.

The main worry of social media critics on the question of curation is engagement-based news ranking or recommendation algorithms many platforms purportedly use. Vaidhyanathan notes that Facebook -- although the mechanism is generalizable to Instagram and Twitter as well -- orders the posts on a user's home page depending on (along with a few less significant factors) how "engaging" the post is, which is decided on by the indicators of number of "reactions", comments, and shares the post has received so far (6). The first insight we can construct from this mechanism is that it builds a positive feedback loop for posts that get early recognition, and a negative feedback loop for the posts that do not get attention early on. If a post gets some engagement when it is first posted, it is more likely to resurface on other users' home pages. Given more visibility, the post is more likely to get even more attention, which grants it more visibility. Similarly, posts with little engagement early on are less likely to appear towards the top of other users' home pages, which makes them less likely to get engagement later on. In other words, a post "survives" as long as it creates a strong reaction, either partiality or controversy. If it gets neither kind of reaction, it has a short half-life and "dies" quickly.

From the lurkers' perspective, the clearest side effect of this, which has been discussed mainly in terms of "fake news" and "filter bubbles" but also holds true for all types of posts, is that more emotionally provoking, and consequentially more extremely worded content gets the longest half-life. Although this does not mean that more nuanced posts do not make it in users' home pages, it means they appears less frequently than their more provocative counterparts. Vaidhyanathan says: "most inflammatory material will travel the farthest and the fastest. Sober, measured accounts of the world [will not]" (6). Therefore, users end up getting a picture of their social worlds that is skewed towards more extremism. Similarly, from the posters' perspective, reaching more of their social circles requires that they cooperate with this curation algorithm. "Click-baits", posts that grab the users' attention quickly and require low levels of engagement, become the posters' best bet. As the posters' patterns of posting end up validating the lurkers' conception of social media as a trivial platform, they themselves continue the same trend when they are posters, and the cycle of loss of nuance, appeal to lowest common denominator and increasing polarization continues.

Another factor in curating one's home page is the user's previous activity. Platforms decide on what content to show by calculating a predictive score of each item (6) that predicts how likely the user is to engage with the post given her history. In a basic understanding, if the user has engaged with a certain kind of post in the past, she is more likely to engage with similar kinds of posts in the future. As Vaidhyanathan notes, this contributes to the same politically polarizing consequences, such as the formation of filter bubbles: "the intellectual isolation that can occur when websites make use of algorithms to selectively assume the information a user would want to see, and then give information to the user according to this assumption" (Internet References, 14). Instead of being in a global conversation, we end up creating disjointed circles that always experience the same type of content.

Zeynep Tufekci expresses a similar worry about the "Up Next" column that uses Youtube's recommendation algorithm, which does not create circles among users of the platform but among types of videos. Tufekci claims that looking at a user's watch history, YouTube constructs a personality type for the user shows him videos that "people like him" would watch. This results in an ever-increasing extremism in the types of videos YouTube recommends, not just politically but in all fields. When we watch a video about vegetarianism, we get an "up next" about veganism; "It's like you're never hardcore enough for YouTube" (17). The algorithm pigeonholes the user to a certain type of personality. It is possible that through mere exposure effect, the user ends up fitting his archetype more by watching more of the videos that "his type of a person" would watch, ironically fulfilling his YouTube crafted destiny.

Targeted ads use the same recommendation system that groups users into different "types of people". The aforementioned ProPublica study shows that Facebook has a "lookalike audience" ad-targeting feature, which allows advertisers to use the groupings that the Facebook algorithm makes for curation purposes (19). The study has found that in the 2018 US mid-term elections, more than 70 percent of all political ads targeted one side of the political spectrum at least twice as much as the other (18). In other words, almost three quarters of political ads were seen by voters who were identified as possibly being convinced by those ads. Less than 20 percent of ads made it to people from both sides of the spectrum close to bilaterally. This means that for most parties, it was impossible to contest the facts of an ad from the other side of the spectrum simply because they never even saw those ads. The possibility of social media as a public sphere significantly deteriorates when users do not have common grounds through which to engage in public discussion.

Another insight we might construct from these facts is that algorithmic curation only allows users to participate in the decision on curation indirectly, from a second-degree. The user gets to pick what he engages in and what he ignores, and in return gets a certain view of his home page the next time he visits the platform. To make a rough analogy, the user's experience is similar to going to a restaurant that brings you a meal depending on your history of enjoyment of previous meals. There is definitely something useful and fascinating in getting a meal that you did not have to particularly order and still enjoyed. However, it rids the user of the possibility of changing preferences whenever he wishes to. If the user of the platform wants to change his experience of the platform, all he can do is dig down and find the posts that he would not normally engage with, engage with them, and continue this intentional pattern-breaking for long enough that the platform notices the change of pattern. But, what if the customer wants to be exposed to different types of food without having to have his taste narrowed down, or worse yet, if he goes vegan overnight? To synthesize the idea with the analogy, an algorithm that makes decisions for us makes it difficult for us to keep an open mind or actively decide to change ourselves. When we are unintentionally pigeonholed by the algorithm, we might get stuck there.

Finally, Tufekci takes caution against the other factors the recommendation algorithms consider that we may not be aware of (21). She explains that to this day, ML algorithms have been allowed to remain "black box", meaning there has been little effort to structurally make sense of the partial progress in the system. Because of this, algorithms are evaluated not on the basis of whether or not they were able to discover the right characteristics, but on the percent of accurately categorized examples. Therefore, what the algorithm considers is sometimes a mystery. Of course, we will consider the argument in Chapter 3 that human decision making is similarly a mystery; humans are notorious in how biased and inarticulate they are when making decisions. However, Tufekci seems to demand better of machines, given that this is possibly. For computer scientists, the mysterious perception of the algorithms is merely a misperception due to the effectiveness of the algorithms: They can detect patterns that humans cannot, and this is part of what makes them powerful. But the other side of the coin is that even when one wishes to, it is often not possible to figure out what the deciding mechanism of the algorithm is. Tufekci gives the example of targeting plane tickets to Las Vegas: It is uninteresting to us that a company might target single men in the ages of 30-40, because we are aware of this type of strategies, and in some senses, immune to it. However, an ML algorithm might just as well target people with bipolar disorder at the onset of a mania episode. Actually, the latter would be considered a more successful algorithm than the earlier, given its higher percentage of accurate sales. Again, the amorality of targeting a particularly vulnerable group between the two cases differs perhaps in degree, but not in kind. However, implicit in Tufekci's algorithm that since AI-based decision making is not human but human-made, we should demand that it improve on the faults of human decision making.

Whether or not we agree with the claim that these practices are morally problematic, the criticism that engagement-based algorithms encourage radical content and unfairly discriminate against people in targeting ads is one that is widespread in the field of tech sociology. However, among types of criticism we have articulated, this is also the one that is most clearly targeted at a specific feature of the platforms, rather than the medium itself. The optimization of an algorithm is human-made and therefore subject to change. There is no method of "general optimization" for an algorithm; optimization is always geared at a certain set of parameters. An optimization algorithm seeks to minimize a given definition of a cost, but it is up to the programmer to determine what the parameter to be reduced is. Then, the cost function attempts to minimize the difference between the expected value of a parameter and the empirical value of that parameter. Perhaps engagement is a convenient parameter to optimize, but it is not necessarily the correct parameter, and it is decisively not a unique parameter. Thus, by picking cost functions that optimize more complex notions of user satisfaction than pure engagement, an alternative social media platform could be protected from these types of criticism.

Furthermore, event current social media platforms have been updating and developing their cost functions to mediate some of the very problems we have described. In January 2019, YouTube has released a statement explaining how they have been combatting videos that have sensational titles but low-quality content, known as "clickbait":

You might remember that a few years ago, viewers were getting frustrated with clickbaity videos with misleading titles and descriptions (“You won’t believe what happens next!”). We responded by updating our system to focus on viewer satisfaction instead of views, including measuring likes, dislikes, surveys, and time well spent, all while recommending clickbait videos less often. (32)

Admittedly, given that Youtube's algorithm is proprietary, we do not have access to the exact nature of this change. However, the declaration at least shows an understanding from Youtube's part that simple parameters such as views do not result in the best user experience, and cost functions generally need to incorporate a set of distinct parameters to combat issues of radical content and model the complex criterion of "viewer satisfaction".

In conclusion, the many blows social media takes from critiques are insightful and necessary for the betterment of the platforms, but they must be viewed as design problems to allow for problem solving to properly function. The questions of notification settings, post structures and curation algorithms all pertain to particular design choices made by the platforms, not mandates of the medium. With this in mind, we use Chapter 3 to anticipate counter arguments to specific claims and to our overarching thesis claim.