**Synthetic Social Alienation: The Role of Algorithm-Driven Content in Shaping Digital Discourse and User Perspectives**

**Abstract**

This study investigates how algorithm-driven content curation impacts mediated discourse, amplifies ideological echo chambers and alters linguistic structures in online communication. While these platforms promise connectivity, their engagement-driven mechanisms reinforce biases and fragment discourse spaces, leading to Synthetic Social Alienation (SSA). By combining discourse analysis with in-depth interviews, this study examines the algorithmic mediation of language and meaning in digital spaces, revealing how algorithms commodify attention and shape conversational patterns. This study also categorizes participant comments as positive, negative, and neutral using sentiment analysis and attempt to examine the emotional tone of these comments. While high success was achieved with 100% recall in the negative class, all predictions were correct in the positive class, though some true positive examples were missed. The findings highlight the need for regulatory interventions and ethical algorithm design to mitigate discourse polarization and restore critical engagement in digital public spheres.

**Keywords:** Algorithmic alienation; Synthetic Social Alienation (SSA); echo chambers; digital disconnection; ideological silos; alters linguistic norms; sentiment analysis.

**Introduction**

In the era of algorithm-based digital media, social media platforms shape information consumption and the evolution of public discourse (Fisher and Mehozay, 2019; Saurwein and Spencer-Smith, 2021; Stark et al., 2020). Building on Marx’s concept of estrangement, digital alienation extends beyond economic production into the realms of social and intellectual interactions. The commodification of user data on social media mirrors traditional labor exploitation, as platforms monetize engagement metrics without users’ active consent (Fuchs, 2014). This dynamic underscores the systemic nature of alienation in algorithmic environments, where individuals are both the producers and products of digital systems (Mosco, 2016).

However, beyond its impact on individuals, algorithmic mediation also shapes the structure and nature of discourse itself (Klinger and Svensson, 2018; Magalhães, 2018; Milan, 2015; Rehman et al., 2024). Social media platforms are not neutral communication conduits; their recommendation algorithms curate, amplify, and suppress specific discourses based on engagement metrics (Chavanayarn, 2024; Sanseverino, 2023).

Besides this, echo chambers and filter bubbles limit the diversity of perspectives encountered by users. While echo chambers actively exclude dissenting viewpoints, filter bubbles arise passively through algorithmic recommendations that isolate users within homogenous content loops. These phenomena create polarized communities and reinforce biases, underscoring the need for content curation and user education transparency.  
Echo chambers and filter bubbles fragment public discourse by narrowing the scope of perspectives accessible to users, often amplifying ideological polarization. Recent studies (Bok, 2023; Buhmann et al., 2020; Cinelli et al., 2021; Reviglio della Venaria, 2020) highlight that these mechanisms are exacerbated by algorithmic personalization, which optimizes user engagement over informational diversity. Echo chambers and filter bubbles are often discussed interchangeably but represent distinct phenomena. Echo chambers actively discredit external viewpoints, fostering systematic distrust of outside information sources (Nguyen, 2020). Conversely, filter bubbles arise from passive exclusion, where algorithms inadvertently omit diverse perspectives, leaving users in isolated informational environments (Bruns, 2019; Pariser, 2011). Both structures can reinforce preexisting biases, but echo chambers rely on deliberate exclusion and manipulation of trust, while filter bubbles result from personalized algorithmic recommendations (Nguyen, 2020; Zimmer et al., 2019).

Furthermore, social media platforms and search engines utilize algorithms to personalize user experiences by analyzing online habits and preferences. These algorithms aim to reduce information overload and enhance engagement but often lead to informational silos (Costa Netto & Maçada, 2019). Pariser (2011) argues that such systems create a “personalized universe of information” that filters out opposing views, contributing to ideological segregation. Similarly, Nguyen (2020) highlights how algorithms promote epistemic bubbles by unintentionally omitting alternative viewpoints. However, studies by Arguedas et al. (2022) reveal that algorithmic curation can lead to slightly more diverse news consumption for non-partisan users, complicating the narrative of uniform adverse effects.

Algorithmic systems also shape individuals’ behavior and identity. Vallejos et al. (2021) emphasize that algorithms influence user well-being by creating environments prioritizing convenience and engagement over diversity and transparency. This lack of agency further entrenches users in self-reinforcing informational ecosystems. Similarly, Netto and Maçada (2019) argue that the interplay of filter bubbles and echo chambers affects identity construction by restricting individuals’ access to diverse viewpoints and fostering homogeneity.

Addressing the challenges posed by algorithmic curation requires a multifaceted approach. Increasing transparency in algorithmic operations and enhancing digital literacy are critical first steps (Zimmer et al., 2019). Policymakers must regulate platforms to ensure that algorithms prioritize diverse content exposure over profit-driven engagement. Furthermore, fostering cross-platform collaborations to promote content diversity can help mitigate the adverse effects of echo chambers and filter bubbles (Vallejos et al., 2021).

This paper examines how digital commodification alters not just individual agency but also **public discourse as a collective process**. In this context, we discuss and introduce the Synthetic Social Alienation (SSA) concept and extends Marx’s alienation theory to contemporary digital spaces, emphasizing how algorithms commodify data and redefine interpersonal and intellectual experiences. Building on Synthetic Social Alienation, we argue that prolonged exposure to algorithm-based content creates a cognitive and emotional disconnect from diverse perspectives, critical thinking, and authentic social connections. We also argue that digital alienation manifests itself through reliance on curated feeds, leading to a narrow worldview, diminished initiative, and isolation within homogenized content ecosystems. We argue that platforms like Twitter, YouTube, and TikTok use machine learning models to prioritize content based on virality, polarization, and retention, influencing what gets discussed and how. We conduct in-depth interviews with 10 people across demographics to understand this. As a result, discourse is increasingly shaped by algorithmic imperatives rather than organic human deliberation.

**Literature Review**

**(i) Alienation, Algorithms and the Digital Media Ecosystem**

Marx conceptualized alienation as the estrangement of individuals from their labor, the products of their work, and their social environments in capitalist societies (Marx, 1844/1978). This estrangement is rooted in commodifying human activity, where workers lose control over their contributions, resulting in a disconnection from their inherent creative potential. While Marx’s theory was situated within the context of industrial labor, its relevance has expanded to contemporary issues, including digital environments, where users contribute their time, attention, and data to platforms in ways that mirror exploitative labor practices (Fuchs, 2014).

In digital spaces, alienation manifests in the commodification of user data and how algorithms mediate and shape human interactions (Dainow, 2016). Users often become passive recipients of algorithmically curated content, experiencing a loss of agency over their social and intellectual environments (Seuren, 2024). This aligns with alienation as a process where individuals feel increasingly powerless in the face of systems they unwittingly sustain.

The algorithmic architecture of social media platforms serves as both a technological and sociological force, reshaping how individuals consume information and interact with the world (Milan, 2015; Reviglio and Agosti, 2020). Algorithms are computational processes designed to sort, prioritize, and present content based on users’ behaviors, preferences, and predicted interests (Gillespie, 2014).

By constantly prioritizing content that aligns with previous interactions, algorithms foster environments of ideological homogeneity, known as echo chambers (Sunstein, 2001). This dynamic can limit exposure to diverse perspectives and contributes to a distorted understanding of social reality, reinforcing biases and dividing discussions (Pariser, 2011).

Furthermore, as platforms compete for user attention to maximize advertising revenue, algorithms are optimized for engagement metrics rather than informational or societal value (Zuboff, 2019). This commodification of attention creates a system where sensationalism, emotionality, and conformity are rewarded, often at the expense of critical thinking and inclusivity.

Therefore, echo chambers refer to environments where users are predominantly exposed to information that aligns with their existing beliefs while dissenting views are marginalized or excluded (Sunstein, 2001). Similarly, filter bubbles describe the phenomenon of algorithmically curated content that limits exposure to diverse viewpoints, effectively “trapping” users within a narrow ideological spectrum (Pariser, 2011). These phenomena contribute to alienation in several ways. First, they create a sense of disconnection from broader societal dialogues by isolating users within specific informational silos. Second, they diminish opportunities for meaningful engagement with diverse perspectives, fostering a sense of intellectual and social stagnation. The lack of exposure to challenging or unfamiliar ideas can erode critical thinking skills, further entrenching users within their curated realities.

**(ii) The Psychological and Sociological Dimensions of Algorithmic Alienation**

Research has shown that exposure to homogenous content can reinforce cognitive biases, such as confirmation bias, where individuals selectively process information that supports their preexisting beliefs (Festinger, 1954). This perpetuates ideological divisions and contributes to feelings of isolation and disconnection, as users are deprived of the richness and complexity of diverse human experiences (Baumeister & Leary, 1995).

The commodification of user activity on social media platforms parallels Marx’s critique of estranged labor. In the digital economy, users’ data—generated through likes, shares, comments, and clicks—becomes a valuable commodity that platforms monetize (Terranova, 2000). This process transforms users into producers and products, where their participation fuels the systems that exploit their attention and privacy (Fuchs, 2014).

This dynamic contributes to alienation in two keyways: (i) First, it creates a sense of disempowerment, as users have little control over how their data is collected, analyzed, and utilized. (ii) Second, it fosters a feeling of dehumanization, as individuals are reduced to mere data points in algorithmic systems designed to maximize profitability. The tension between users’ creative contributions and their commodification mirrors Marx’s description of laborers being estranged from the products of their work.

Moreover, the algorithmic prioritization of engagement often amplifies polarizing and superficial content, undermining the quality of digital interactions. This further alienates users from meaningful connections, as pursuing virality and monetization takes precedence over genuine human engagement.

Baumeister and Leary’s (1995) theory of belongingness posits that humans have an innate need for close and positive relationships. However, despite their promise of connectivity, social media platforms often fail to fulfill this need. Algorithms prioritize content that maximizes engagement, amplifying emotionally charged or sensationalist content, which can lead to a distorted sense of social reality (van Dijck, 2013). This creates an environment where users are inundated with idealized portrayals of others’ lives, fostering feelings of inadequacy and alienation. Social comparison theory (Festinger, 1954) provides a valuable framework for understanding these dynamics, as users often measure their own lives against the curated realities presented online, resulting in decreased self-esteem and heightened social anxiety.

The psychological effects of algorithmic alienation extend beyond individual experiences to societal implications. As users retreat into algorithmically curated spaces, opportunities for empathy, understanding, and collective action diminish. This deepens societal divisions and undermines the potential for collaborative solutions to complex social issues.

**Research design and methodology**

The study addresses alienation as a systemic consequence of external forces shaping human interactions. In order to understand this kind of alienation, the study asks these following research questions:

**RQ1:** How do social media algorithms influence users’ sense of agency, belonging, and intellectual engagement?

**RQ2:** What linguistic and discursive patterns emerge in users’ descriptions of their algorithmic experiences?

**RQ3:** How does digital alienation affect professional and activist discourse, particularly visibility and engagement?

**RQ4:** How does Synthetic Social Alienation (SSA) manifest in users’ engagement with algorithm-driven social media platforms?

Therefore, we conducted interviews with 10 participants who are frequent users of algorithm-based platforms (e.g., TikTok, YouTube, Twitter) and focused on their understanding of how algorithms shape their content consumption and their emotional and social responses. We selected participants from diverse demographics to examine varying impacts of algorithmic alienation (e.g., different age groups, political affiliations, or cultural backgrounds). We focused on users who engage with platforms that heavily utilize recommendation algorithms. Since we are studying algorithmic alienation on social media, we consider age groups as younger users (18–25), middle-aged users (26–40), and older users (40+). We included users of platforms with strong algorithms like TikTok, YouTube, Instagram, Facebook, and Twitter (X). We balanced heavy users, moderate users, and skeptics to explore differences. We captured diverse cultural perspectives and different income levels correlated with distinct experiences of alienation. We assumed that more educated individuals might have a critical perspective on algorithms while others might experience alienation unconsciously. We included content creators, students, office workers, and others to explore varying dependencies on social media.

This study employs a hybrid methodology combining in-depth interviews and discourse analysis to examine the influence of algorithmic curation on discourse formation. The study applied discourse analysis to analyze algorithmic content flows in Twitter trending topics, YouTube comments, and TikTok discussions, tracking to understand lexical frequency shifts (e.g., how specific phrases gain prominence in algorithmic spaces) and sentiment shifts (e.g., how engagement-driven algorithms amplify emotional discourse), and topic fragmentation (e.g., how discussions diverge into isolated bubbles based on algorithmic sorting).

Combining in-depth interviews and discourse analysis allows a comprehensive examination of how algorithmic curation shapes discourse formation. Interviews provide valuable qualitative insights into users’ experiences, perceptions, and interpretations of algorithm-driven content, offering a human-centered perspective on how algorithms influence their engagement and discourse participation (Shin and Park, 2019). Furthermore, discourse analysis examines algorithmic content streams, revealing patterns in language, emotional shifts, and topic fragmentation across digital platforms (Dillet, 2022). By integrating these methodologies, the study combines subjective user experiences with empirical linguistic and structural trends, providing a more holistic understanding of how algorithms mediate discourse and influence meaning-making in digital spaces. Moreover, we use sentiment analysis and attempt to examine the emotional tone of these comments. The sentiment analysis and SSA classification model developed in this study achieved an accuracy rate of 80% in correctly predicting the majority of the test data. While high success was achieved with 100% recall in the negative class, all predictions were correct in the positive class, though some true positive examples were missed. Both the macro and weighted average F1 scores of 0.80 indicate that the model demonstrates a generally balanced performance. However, the small size of the dataset may limit the generalizability of these results and testing with a larger dataset is recommended.

**Profile of the interviewees**

The interviewees represent diverse digital media users, each engaging with social platforms differently based on age, profession, and interests: (i) Younger participants, such as a 20-year-old college student and a 16-year-old high school student, primarily use TikTok and Instagram for entertainment and social interaction. (ii) Professionals, including a 38-year-old marketing expert and a 26-year-old AI specialist, rely on LinkedIn and Twitter for career growth. A 26-year-old gamer connects with the gaming community through YouTube and Twitch, while a 42-year-old journalist turns to Twitter for real-time news. A 29-year-old from a rural area uses Facebook to stay in touch with family and friends, whereas a 32-year-old stay-at-home parent engages in parenting communities on Facebook and Instagram. Meanwhile, a 22-year-old social activist leverages social media to promote causes and network with like-minded individuals, and a 65-year-old retiree relies on Facebook and YouTube for news and family connections. These participants, labeled as Profile 1 through Profile 10, illustrate the diverse ways individuals interact with algorithmic content across different platforms.

Describing how algorithm-driven content curation impacts mediated discourse, reinforces ideological echo chambers and alienates users is complex and challenging. Therefore, this study combines discourse analysis with in-depth interviews to examine the algorithmic mediation of language and meaning in digital spaces. We also attempt to understand how algorithms commodify attention and shape conversational patterns. Thus, we conducted in-depth interviews with active users who are hyper-conformed to social media. Due to gender, self-relationships, and disclosures, each participant had to volunteer, allowing the study researchers to interview only volunteers (as discussed and used by Gürkan et al., 2024). Therefore, as a convenience sample, our sample was not representative of the entire population (all social media users) but did provide theoretical insight into active social media users within this population.

The interview questions are as follows:

**Table 1: The Interview Questions for the Participants**

|  |
| --- |
| What motivates you to use social media? (e.g., entertainment, news, work, connection) |
| How familiar are you with algorithms curating content on social media platforms? |
| Do you notice patterns in the kind of content recommended to you? Can you give examples? |
| How do you feel about the personalization of content by these algorithms? |
| Do you think the content you see on social media reflects a wide range of perspectives? Why or why not? |
| How often do you encounter content or opinions that challenge your beliefs? |
| How does the content you see on social media affect your perception of others outside your immediate circles? |
| Do you think social media algorithms make connecting with people from different backgrounds or beliefs easier or harder? |
| Have you ever tried to bypass or limit algorithmic recommendations? How did that affect your experience? |

These interview questions aim to understand how users engage with social media algorithms and how these systems influence their content consumption, perceptions, and interactions. By exploring users’ motivations, awareness of algorithmic curation, and experiences with content recommendations, we can assess how algorithms shape discourse, reinforce biases, or facilitate exposure to diverse viewpoints. Besides this, these questions help examine whether users actively resist or modify algorithmic recommendations and how personalized content affects their understanding of different perspectives and social connections.

**Data and Analysis**

Findings from the **interview data** suggest that users experience, we suggest a new term *Synthetic Social Alienation* (SSA) through algorithmically reinforced discourse patterns. This discourse analysis shows how algorithmic mediation shapes users’ engagement, perceptions, and interactions on social media. By examining linguistic patterns, framing mechanisms, and power dynamics, we try to identify how users conceptualize their agency, emotions, and visibility within algorithmic environments. Moreover, discourse analysis further reveals concrete **shifts in conversational structure** due to algorithmic mediation. Key insights include as follows:

(a) Echo Chamber Effects & Repetitive Language: (i) Lexical Choices: Users often describe their experience with phrases like “*I always see the same thing*,” “I*t’s just an endless loop*,” or “*I feel trapped in this content*.” (ii) Discourse Pattern: The use of deterministic and passive language suggests a perception of limited agency and a structured engagement dictated by the algorithm. (iii) Implication: The algorithmic reinforcement of familiar content creates a discourse of inevitability, reinforcing ideological silos.

(b) Emotional Amplification & Speech Economy: (i) Lexical Compression: Emotional responses such as “*It’s addictive*,” “*It makes me anxious*,” or “*I love the recommendations*” reveal the amplification of emotions through algorithmic exposure. (ii) Binary Framing: Users tend to categorize content as either highly engaging or frustrating, indicating that algorithmic curation fosters polarized emotional experiences. (iii) Implication: Algorithmic mediation intensifies emotional discourse, pushing users toward more extreme affective responses.

(c) Perceptions of Control and Manipulation: (i) Passive Engagement: Users (Profiles 1, 2, 3, 5, 6) use phrases like “*I have no control*,” “*It just shows me things*,” or “*I feel stuck*,” indicating a discourse of helplessness. (ii) Active Resistance: Users (Profiles 4, 7, 8, 9, 10) state, “*I try to break the algorithm*,” “*I engage critically*,” or “*I search for alternative content*,” suggesting a counter-discourse of agency. (iii) Implication: The contrast between passive and active language highlights a divide in algorithmic literacy and perceived agency.

(d) Algorithmic Dependence in Professional and Activist Discourse: (i) Paradoxical Framing: Social media professionals and activists express both reliance and frustration (e.g., “*I need the algorithm to reach people, but it also limits me*”). (ii) Linguistic Strategies: Their discourse balances pragmatic engagement (“*I optimize for visibility*”) with resistance (“*I fight against suppression*”). (iii) Implication: Algorithmic mediation structures professional discourse into a negotiation between visibility and control.

(e) Shaping Worldviews and Intellectual Engagement: (i) Polarized Language: Users describe opposing views as “*nonsense*,” “*toxic*,” or “*dangerous*,” reflecting how algorithmic exposure frames alternative perspectives as extreme or invalid. (ii) Intellectual Confinement: The lack of discursive variation (e.g., “*I don’t see new perspectives*,” “*It’s always reinforcing my beliefs*”) suggests a narrowing of intellectual engagement. (iii) Implication: Algorithmic discourse structures reality by reinforcing existing ideological positions rather than fostering critical thinking.

(f) Visibility Inequality and Speech Hierarchies: (i) Hierarchical Discourse: Users acknowledge algorithmic bias in visibility, stating, “*Only certain voices get heard*,” “*Smaller creators disappear*,” or “*It favors mainstream content*.” (ii) Resistance Strategies: Users who recognize visibility hierarchies attempt countermeasures like manual searches and engagement strategies. (iii) Implication: Social media algorithms create a digital speech economy where visibility is a currency governed by algorithmic logic.

These findings underscore how **algorithmic mediation shapes what is seen and how discourse is structured, framed, and sustained**. The tables formed with the collected data are organized into three key areas: (i) user motivations and experiences with algorithmic content, (ii) perceptions of Synthetic Social Alienation (SSA), and (iii) strategies for managing algorithmic content. The common themes from the interviewees’ responses are shown in Table 2, which includes themes, everyday observations, and examples. Table 2 categorizes the interviewees’ responses based on common themes related to their social media use, highlighting the motivations behind their engagement with platforms, their awareness of algorithms, and how they perceive the content they encounter. This table reveals varying levels of awareness, from passive content consumers to more critical, actively engaged users, reflecting diverse experiences with algorithmic personalization.

**Table 2: Themes and Observations on Social Media Use and Algorithmic Influence**

| **Theme** | **Common Observations** | **Comments from Interviews** |
| --- | --- | --- |
| **Motivations for Social Media Use** | Entertainment, work, and connection are primary drivers, varying by age and occupation. | Profile 6: “*I use TikTok for entertainment*.”; Profile 9: “*I use Instagram to promote causes*.” |
| **Awareness of Algorithms** | Most users are somewhat aware of algorithms but differ in the depth of understanding. | Profile 8: “*I am very aware of algorithms and how they shape what I see*.” Profile 7: “*I do not understand how it works.*” |
| **Patterns in Recommended Content** | Users observe repetitive content loops, often aligned with their preferences. | Profile 4: “*I see much political content that aligns with my views*.”; Profile 3: “*I get recommended gaming videos all the time*.” |
| **Feelings About Personalization** | Mixed feelings: Some appreciate convenience, others find it intrusive. | Profile 6: “*I find the recommendations helpful.*”; Profile 9: “*It is manipulative; it makes me see only what I like.*” |
| **Exposure to Diverse Perspectives** | Echo chambers limit exposure to differing viewpoints. | Profile 7: “*All I see is content that confirms what I already know*.”; Profile 9: “*It is hard to reach new audiences.*” |
| **Encountering Challenging Content** | Rare encounters with content that challenges beliefs, especially in younger users. | Profile 3: “*I never see content that challenges my views*.”; Profile 9: “*Sometimes I face polarized discussions*.” |
| **Effects on Perceptions of Others** | Limited or skewed portrayals in content shape perceptions. | Profile 10: “*I feel disconnected from others*.”; Profile 8: “*My feed shapes my view of people in my field.*” |
| **Connections Across Differences** | Difficulty connecting with diverse groups due to algorithmic filtering. | Profile 7: "I mostly see content from people like me." Profile 4: "It is hard to engage with differing perspectives." |
| **Attempts to Bypass Algorithms** | Attempts include using manual search or following diverse accounts, with mixed success. | Profile 3: "I follow accounts manually to get different content."; Profile 10: "I try to use the platform’s tools, but they do not work well." |

According to the research data, younger users demonstrate a strong dependence on platforms like TikTok and Instagram for entertainment and social validation. While they enjoy the convenience of algorithmic recommendations, their awareness of algorithmic manipulation is limited. This causes alienation by design, as their digital environments become confined to repetitive, dopamine-driven content loops.

Profiles such as the marketing professional, gamer, and AI expert highlight the professional reliance on algorithms. While these users are more critical of algorithms, they experience *alienation* through dependency. Their success often hinges on navigating and appeasing opaque systems, leading to a paradoxical relationship with platforms.

The activist highlights the challenges algorithms pose in advocating for change. Algorithms favor polarizing or viral content, often sidelining nuanced discussions. This results in *alienation* through selective amplification, where the system promotes visibility but compromises the genuineness and reach of its message.

Stay-at-home parents and older users share a more passive relationship with social media. Their usage focuses on personal connection and community-building, but they report *feelings of alienation* through algorithmic noise, where irrelevant or overly targeted recommendations overshadow genuine interactions.

Across all profiles, there is a recurring theme of algorithms reinforcing existing beliefs and preferences. This alienation through homogenization restricts exposure to diverse perspectives, fostering ideological silos and distorting perceptions of broader social realities.

We can categorize the answers of the interviewees according to *the sense of agency, belonging, and intellectual engagement:*

**Table 3: Discursive Strategies of Social Media Users**

|  |  |  |  |
| --- | --- | --- | --- |
| **User Type** | **Discourse Patterns** | **Key Linguistic Markers** | **Implications** |
| Passive Consumers (Profiles 1, 2, 3, 5, 8) | Repetitive, deterministic | “I always see the same,” “It’s an endless loop” | Low agency, algorithmic dependence |
| Active Curators (Profiles 4, 6, 7, 9, 10) | Adaptive, strategic | “I try to manipulate it,” “I avoid certain content” | Algorithmic literacy, resistance discourse |
| Algorithm-Dependent Users (Professionals, Activists) | Paradoxical, negotiated | “I need it but hate it,” “I optimize for reach” | Tension between reliance and critique |

Profile 1, 2, 3, 5, and 8 express a limited sense of agency, feeling constrained by the algorithm’s repeated content. They acknowledge that while algorithms present tailored content, it feels repetitive, and they find themselves in cycles of seeing the same types of content. These users feel somewhat stuck within a predictable, repetitive loop. They desire more control or new content but are often overwhelmed by algorithmic predictability.

Profile 4, 6, 7, 9, and 10 engage with the algorithm actively and may feel more in control of the content they see. They engage more purposefully by interacting with content to expand their feeds or shift algorithms toward diverse topics. These users maintain a stronger sense of agency by curating their experiences, although they still acknowledge the algorithm's influence.

Profiles 1, 2, 3, 4, 5, and 6 focus on a sense of belonging within spaces that align with their interests, where they primarily interact with like-minded people. This reinforces their sense of connection but might limit exposure to other viewpoints. These users feel comfortable in their spaces but are less likely to encounter diverse perspectives, which may lead to limited intellectual growth.

Profiles 7, 8, 9, and 10 express a more varied sense of belonging, seeking diverse communities and opinions. However, they also note that algorithmic personalization often reinforces their current views, limiting their exposure to opposing perspectives. These users actively try to break out of the echo chamber, yet the algorithm still tends to limit interactions with diverse groups or ideas.

Profiles 1, 2, 3, 5, and 6 experience limited intellectual engagement due to the repetitive nature of content. They often scroll past content that challenges their opinions or fail to find enough thought-provoking material that encourages deeper engagement. These users may feel intellectually stagnant or disconnected from new ideas, as the algorithm primarily delivers content they already agree with.

Profiles 4, 7, 8, 9, and 10 show more intellectual engagement, actively seeking diverse content and engaging with challenging material. However, they acknowledge the algorithm’s tendency to push content that is still aligned with their preferences, making it hard to encounter truly diverse ideas. These users engage more critically with the content they see but still recognize that the algorithm limits their ability to access various intellectual challenges.

Users in Group 1 (Profiles 1, 2, 3, 5, 6) face frustration with the repetitive nature of algorithmic content, leading to a limited sense of agency and intellectual engagement, users in Group 2 (Profiles 4, 7, 8, 9, 10) feel more empowered to engage with the algorithm, curating their content more actively but still experiencing limitations in intellectual diversity due to the algorithm’s inherent bias towards familiar content.

**Table 4: SSA in users’ experiences**

| **Theme** | **Common Observations** | **Comments from Interviews** |
| --- | --- | --- |
| **Understanding of SSA** | Most users know how algorithms create a sense of detachment or alienation, but the depth of their understanding varies. | Profile 1: “*It feels like I am constantly being fed the same stuff, and the platform does not care about what I need*.” |
| **Perceptions of Social Interaction** | Users experience a sense of isolation or detachment from genuine human connections due to algorithmic filtering and content curation. | Profile 6: “*Even though I interact with people online, I feel like I am not truly connecting with them*.” Profile 7: “*It is like we are all in echo chambers, and it does not feel real*.” |
| **Impact on Emotional Well-being** | SSA is often linked to feelings of frustration, dissatisfaction, and emotional disengagement with the content they consume. | Profile 8: “*I sometimes feel emotionally drained from the repetitive content that does not resonate with me*.”; Profile 3: “*The endless gaming videos make me feel stuck.*” |
| **Alienation from Diverse Perspectives** | The algorithmic environment limits exposure to differing perspectives, reinforcing feelings of detachment from broader social conversations. | Profile 9: “*I do not see much of the other side of issues, which makes me feel disconnected from people with different views*.” |
| **Attempts to Counter SSA** | Some users actively try to break free from SSA by seeking more diverse content, though success varies due to algorithmic filtering. | *Profile 2:* “*I manually search for new topics to get out of the bubble, but it does not always work*.”; Profile 10:“*I follow accounts from different perspectives, but it does not make much of a difference.*” |
| **Social Engagement in Digital Spaces** | SSA is often linked to superficial or transactional interactions in digital spaces rather than meaningful, in-depth connections. | Profile 4: “*I am engaging with the same type of people, but it feels more like networking than true connection.”;* Profile 5: “*There is only so much I can gain from these platforms before they start feeling empty.*” |

The Table 4 focuses on Synthetic Social Alienation (SSA), examining how participants relate to feelings of isolation, disconnection, or exclusion resulting from algorithm-based content recommendations. It highlights whether participants feel disconnected from broader societal contexts or communities due to the personalization of content and their inability to quickly encounter opposing viewpoints or diverse perspectives.

**Table 5: Strategies for Managing Algorithmic Content**

| **Theme** | **Common Observations** | **Comments from Interviews** |
| --- | --- | --- |
| **Active Content Curation** | Some users actively engage with algorithms by curating their feeds, choosing specific accounts to follow, or using search features. | Profile 1: “*I try to follow various accounts to diversify my feed.*” |
| **Manual Content Search** | Users rely on manual searches and browsing to seek content outside algorithmic suggestions. | Profile 6: “*I search for things manually to find new content that the algorithm does not suggest.*” |
| **Engagement with Diverse Accounts** | Some users follow a range of diverse accounts or topics to counter algorithmic homogeneity. | Profile 9: “*I follow accounts that challenge my views to broaden my perspective*.” |
| **Frequent Unfollowing/Muting** | Some users unfollow or mute certain accounts to control their content to prevent overexposure to repetitive content. | Profile 2: “*I mute accounts that keep pushing the same content I do not find interesting.*” |
| **Limiting Time on Platforms** | A strategy for coping with content overload and algorithmic influence is to reduce overall platform usage. | Profile 10: “*I limit my time on social media so I do not get caught in these loops*.” |
| **Seeking Alternative Platforms** | Some users attempt to move to other platforms with less algorithmic control or a different type of content structure. | Profile 5: “*I have started using a new platform where I can curate my content more freely.*” |
| **Awareness and Avoidance of Bias** | Some users consciously avoid content that reinforces biases by actively seeking diverse opinions or questioning algorithmic suggestions. | Profile 4: “*I question whether the content I see is biased, especially in politics*.” |
| **Engaging with Algorithmic Feedback** | A few users try to alter algorithmic suggestions through likes, shares, and other feedback loops to create more personalized content. | Profile 8: “*I like videos that are more diverse to try to influence my recommendations*.” |
|  |  |  |

The Table 5 shows the different strategies users employ to manage the influence of algorithms on their social media experiences. The techniques vary from manual content curation to changing platforms or reducing screen time. They could provide insights into the level of agency users feel they have in curating their digital experiences. This table focuses on how participants deal with content recommendations, personalization, and the perceived limitations of their social media and algorithm-based platforms.

### Data Set for Sentiment Analyses

The data analyzed in this study were obtained from two Microsoft Word documents (.docx): one labeled (for training) and one unlabeled (for testing). Each interview starts with the prefix “Interviewee:” and in the training file, each sentence is labeled with an emotion label: “Positive”, “Negative” or “Notr”.

* **interviews\_train.docx:** Labeled training data. Each interview starts with the phrase “Interviewee:” and ends with the emotion labels “Positive”, “Negative” or “Notr”.
* **interviews\_test.docx**: Unlabeled test data. Used for estimation and SSA analysis.

### Data Preprocessing

The text data was cleaned in the following steps:

* Lowercase conversion
* Removal of numbers and punctuation
* Extraction of stopwords (stopwords.words)
* Retention of words longer than three letters only

These operations are performed with the clean\_text() function.

### SSA and Emotional Keyword Matching

Two special word lists are defined:

* **SSA\_PHRASES:** Statements representing social alienation (Synthetic Social Alienation) in the digital environment
* **EMOTION\_WORDS:** Words reflecting positive and negative emotions

Sentences were scanned against these lists to determine how many matches they contained. The results were exported as CSV and graphs.

### Emotion Analysis

The sentiment polarity of all sentences was measured through the **TextBlob** library.  
This value ranges from -1.0 (negative) to +1.0 (positive).

### TF-IDF + Random Forest Classification

The labeled training data was transformed into a 1000-dimensional word matrix with TfidfVectorizer.  
**SMOTE** (Synthetic Minority Oversampling Technique) was applied to balance the unbalanced class structure.

Modeling process:

* **Classifier** RandomForestClassifier
* **Parameter search** GridSearchCV (n\_estimators: [50, 100], max\_depth: [None, 10])
* **Evaluation metrics:**
  + Accuracy
  + Precision, Recall, F1-score
  + ROC AUC
  + 5-fold cross-validation

The results are reported as graphs and CSV files.

### SSA Classification with Sentence Embedding

In a second approach, sentences were embedded into the vector space using the SentenceTransformer model **(paraphrase-MiniLM-L6-v2**). Using these embeddings, **the LogisticRegression** classifier was trained and SSA predictions were made on the test set.

### Reporting and Visualization

**SSA NLP report** has been created. The report includes:

* Horizontal bar graphs for SSA expressions and emotional words
* Summary table with number of sentences, match frequencies and average sentiment score
* Sentiment histogram, keyword frequency graphs, confusion matrix and ROC curve were generated.
* The results were compiled as a PDF report and all data files were exported as CSV.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Label** | **Precision** | **Recall** | **F1-score** | **Support** |
| 0 (Negative) | 0.67 | 1.0 | 0.8 | 2 |
| 1 (Positive) | 1.0 | 0.67 | 0.8 | 3 |
| Accuracy |  |  | 0.8 | 5 |
| Macro Avg | 0.83 | 0.83 | 0.8 | 5 |
| Weighted Avg | 0.87 | 0.8 | 0.8 | 5 |

* The overall accuracy of the model is 80%, indicating that 4 out of 5 test instances were correctly classified.
* For the Negative class (0):
* Recall is perfect (1.00), meaning all actual negative samples were correctly identified.
* Precision is 0.67, indicating some false positives (positives incorrectly labeled as negative).

- For the Positive class (1):

* Precision is perfect (1.00), meaning all predicted positives were correct.
* Recall is 0.67, suggesting the model missed some actual positives.
* Macro and Weighted Averages both yield an F1-score of 0.80, indicating balanced performance.

Despite the model’s small dataset:

* Captures all negative samples (high recall).
* It labels the positive class with high accuracy.
* These metrics are variable due to the small sample size (support). The more data, the more precise the results.

Evaluation of the model:

çizgi, öykü gelişim çizgisi; kumpas; grafiğini çıkarma, diyagram, eğim, bayır içeren bir resim

Yapay zeka tarafından oluşturulmuş içerik yanlış olabilir.

The graph above is the ROC curve of the model with a ROC-AUC score of 0.667:

* Orange **line** Classification performance of the model
* **AUC (Area Under Curve)**: 0.667- Average model performance, some classes have adequate separation but could be improved.
* **Blue dashed line**: Baseline of the random guess

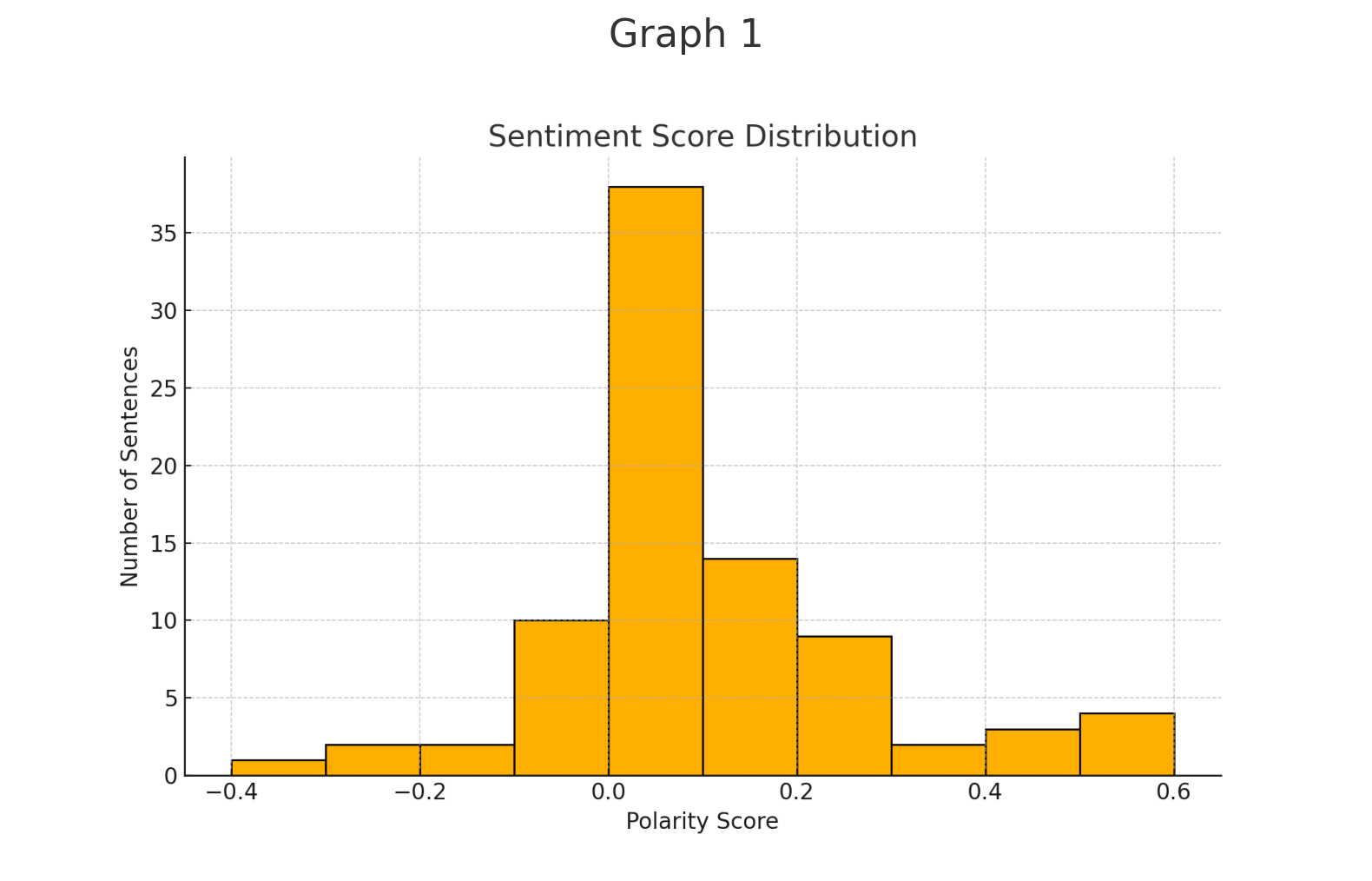
çizgi, öykü gelişim çizgisi; kumpas; grafiğini çıkarma, metin, sayı, numara içeren bir resim

Yapay zeka tarafından oluşturulmuş içerik yanlış olabilir.

**X axis** Recall (sensitivity / true positive rate). **Y axis** Precision

**AP (Average Precision)** ≈  **0.92** → Fairly good classification accuracy.

SSA Charts:

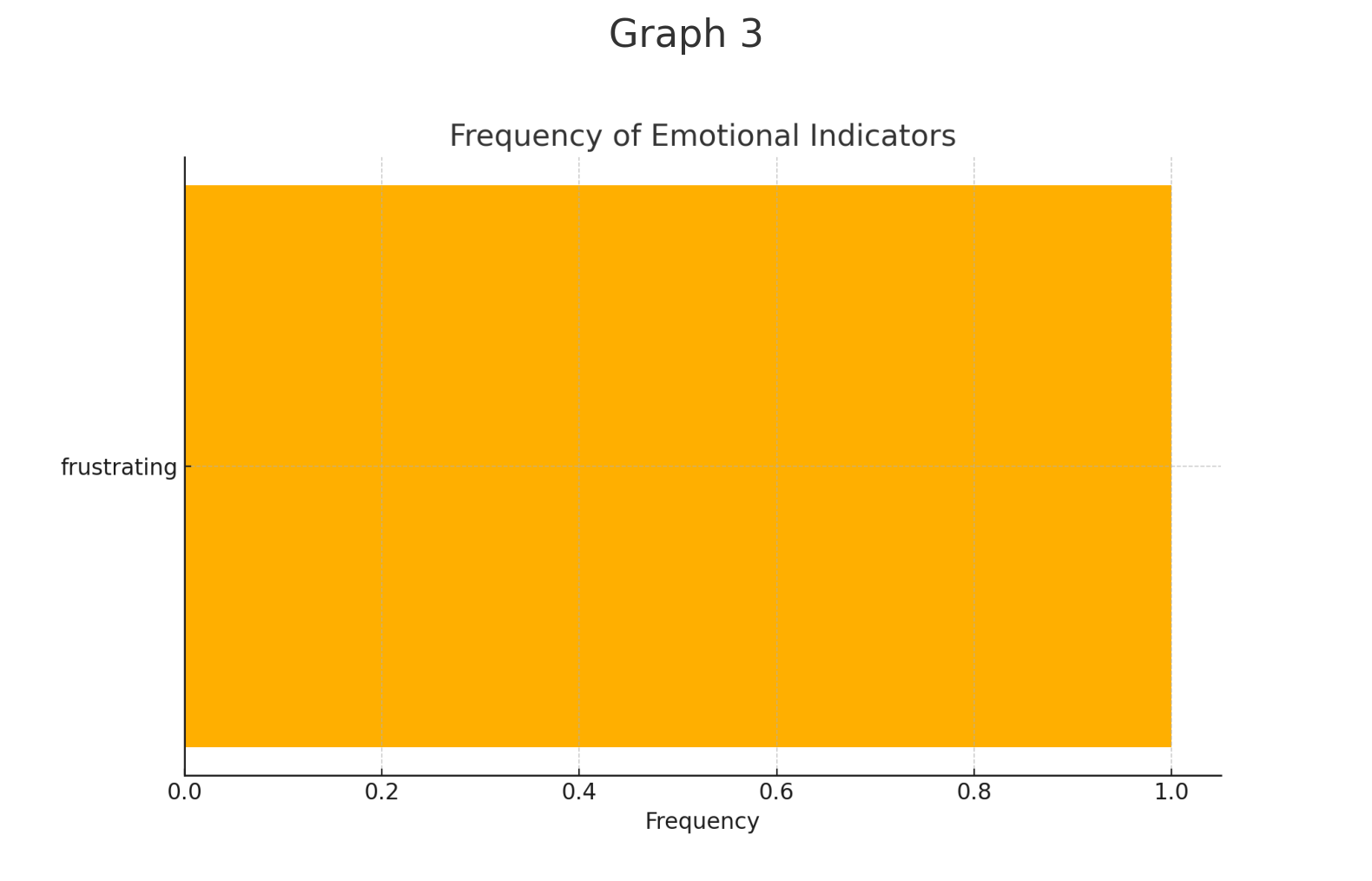
* This graph shows the sentiment scores of the sentences in the analyzed texts. The average sentiment score is low, around 0.087 and neutral. This indicates that the text is generally neutral or slightly negative in tone. **Average sentiment score** ≈ +0.087 (around neutral)
* **SSA matchups** 2
* **Emotional word matches:** 1

**Comment:**

* Texts are generally neutral or slightly negative; not explicitly negative/positive.
* SSA and emotional expressions **are vague**, not direct.
* Users **share more thoughts**, emotional reactions are weak.

metin, ekran görüntüsü, sarı, dikdörtgen içeren bir resim

Yapay zeka tarafından oluşturulmuş içerik yanlış olabilir.

* The graph shows how many times the keywords associated with "Synthetic Social Alienation" occur in the analyzed text. Only 2 matches were found. This shows that SSA themes are very rare in the text.
* This graph shows the frequency of words containing emotion. Only 1 emotional word was detected, indicating that the text in general is not emotionally intense.

The analyzed text contains very little emotional content and a low level of SSA-related keywords. The sentiment analysis suggests that the overall tone of the text is neutral or slightly negative, but without a clear theme of social alienation.

metin, ekran görüntüsü, diyagram, sayı, numara içeren bir resim

Yapay zeka tarafından oluşturulmuş içerik yanlış olabilir.

The model is mostly successful in separating negative examples. Although it catches the positives correctly, it misses a few (FN). (The reason is again the small training dataset)

metin, ekran görüntüsü, çizgi, yazı tipi içeren bir resim

Yapay zeka tarafından oluşturulmuş içerik yanlış olabilir.

* **Most important word:** "connect" (40% impact)
* Words like "trapped", "loop", "satisfying"
* These are **emotional states** or **clues about SSA**
* The model categorizes users based on words such as "connection", "isolation" and "satisfaction". It overlaps with social alienation.

|  |  |  |  |
| --- | --- | --- | --- |
| **y\_true** | **y\_pred** | **proba** | **error\_type** |
| **0** | 0 | 0.1 | TP |
| **0** | 0 | 0.4 | TP |
| **1** | 1 | 0.35 | TP |
| **1** | 0 | 0.8 | FN |
| **1** | 1 | 0.9 | TP |

 Errors only occur in **false negatives**, i.e. in samples that were positive but were incorrectly predicted to be negative.

 The model fails to detect some positive content. These contents **may** have **low SSA symptoms**.

**Discussion**

As mentioned before, this study proposes a new term *Synthetic Social Alienation* (SSA), which examines how algorithm-based systems reshape social connections and individual identities. SSA highlights the nuanced impacts of algorithmic environments, focusing on simulated relationships, the commodification of engagement, and the erosion of realness. These dynamics illustrate how algorithms restructure personal and intellectual interactions, offering a lens through which Marx’s theories of alienation apply to digital spaces (Berry, 2014; Poloni, 2024).

The first dynamic is simulated relationships, in which users engage with curated content and personas that reflect algorithmic priorities rather than organic social interactions, fostering a detachment from real connections. This commodification of engagement is the second dynamic, where social bonds and interactions are reduced to data points such as likes, shares, and comments. These are exploited for economic gain at the expense of genuine relational depth. Finally, performative and curated digital personas disconnect individuals from their true selves and others, leading to a broader sense of alienation within homogenized content ecosystems and erosion of realness.

The theory of alienation provides a foundational lens for understanding algorithmic detachment syndrome (ADS), an essential part of SSA. Alienation arises from individuals' estrangement from their labor, the products they create, their fellow humans, and ultimately themselves within a capitalist system (Marx, 1844/1978). In algorithmic media, this alienation is not merely economic but extends into the cognitive and social realms, as individuals become estranged from actual social experiences and diverse perspectives.

The algorithms commodify their engagement for corporate profit, mirroring Marx’s concept of labor exploitation. Algorithms prioritize engagement metrics, fostering echo chambers and fragmenting communal bonds. Users experience connections shaped by artificial mechanisms rather than genuine human interaction—algorithmic feedback loops foster curated digital personas, estranging individuals from their original identities. Social media platforms rely on user-generated content and interactions, which are captured as data and sold to advertisers. Terranova (2000) highlights how this unpaid labor is central to the digital economy, reinforcing systemic exploitation.

In the context of ADS, users unknowingly contribute to their detachment. Their time and effort engaging with algorithmically curated content reinforces the platforms’ profit models while deepening their cognitive narrowing. ADS thus aligns with the commodification of user activity, illustrating how digital labor extends the scope of alienation theory into the algorithmic age.

Zuboff (2019) argues that these systems extract behavioral data and manipulate user behavior to generate predictable engagement patterns, ensuring profitability. Surveillance capitalism intensifies ADS by stripping users of their autonomy. Algorithms dictate what content individuals see, effectively shaping their thoughts and interactions. This constant manipulation fosters a sense of detachment as users lose control over their digital environments. The resulting alienation is compounded by the inability to escape these systems, which are embedded into the fabric of modern life.

Van Dijck (2013) critiques the culture of connectivity in which social media platforms simulate social interactions through algorithmic mechanisms and argues that these platforms commodify relationships by prioritizing content that maximizes engagement rather than fostering meaningful connections.

ADS draws on van Dijck’s concept of synthetic engagement to describe the alienation users feel when algorithms mediate their interactions. Rather than engaging with content or people authentically, users interact within a synthetic ecosystem designed to generate revenue. This synthetic nature of engagement amplifies the disconnection from genuine social experiences, reinforcing the core elements of ADS.

Algorithms designed to personalize user experiences often trap individuals in echo chambers, repeatedly exposing them to similar viewpoints and content. This limits exposure to diverse perspectives and fragments of social cohesion. SSA encapsulates the psychological and social impact of this narrowing of engagement, manifesting as isolation and estrangement in a hyperconnected world.

The concept of Synthetic Social Alienation (SSA) is intricately tied to the dynamics of discourse. Discourse, as the structured way language conveys meaning and constructs social reality (Foucault, 1980), is central to understanding how algorithm-based environments shape user experiences. Through content curation by algorithms, social media platforms influence the discursive landscapes users inhabit by amplifying dominant narratives while marginalizing others (Pariser, 2011; Nguyen, 2020).

The feedback loops algorithms create prioritize content that maximizes user engagement over diversity, forming echo chambers where certain discourses are reinforced and counter-narratives are excluded (Bruns, 2019; Flaxman, Goel, & Rao, 2016). This narrowing of discourse limits intellectual engagement and fosters a sense of disconnection from broader societal conversations.

The contextual nature of algorithmic systems further compounds SSA. Social media platforms operate within specific sociocultural contexts, shaping and being shaped by their users’ values, norms, and ideologies. Algorithms reflect and reinforce these contexts by selectively curating content that aligns with users’ preexisting beliefs, perpetuating systemic biases and exacerbating polarization (van Dijck, 2013; Zuboff, 2019). In politically polarized environments, for instance, users are more likely to encounter content that reinforces their ideological stances, deepening divisions and reducing opportunities for cross-cutting dialogue (Nguyen, 2020).

The commodification of discourse on social media also plays a significant role in SSA. Algorithms designed to maximize engagement favor sensationalist and emotionally charged content, which distorts reality and undermines critical discourse (Zimmer et al., 2019). This aligns with the theory of alienation, where users are both producers and products of these systems, estranged from genuine interactions and intellectual diversity (Marx, 1844/1978).

Moreover, social media platforms have fragmented the public sphere by creating spaces where discourse is context-dependent and user-generated content lacks consistent editorial standards (Couldry & Mejias, 2019). This fragmentation intensifies SSA by complicating users’ ability to navigate polarized and complex information landscapes.

SSA provides a framework to analyze how **algorithm-driven environments alter mediated discourse**, emphasizing three key dynamics:

**(i) Discursive Fragmentation:** Algorithmic prioritization of engagement-based content creates ideological echo chambers, where exposure to counter-discourses is minimized. This limits the diversity of perspectives users encounter, reinforcing epistemic closure.

**(ii) Lexical and Rhetorical Shifts:** Algorithms favor sensationalism and emotionally charged content, leading to linguistic homogenization where discourse becomes **simplified, reactionary, and performative** rather than nuanced and deliberative.

**(iii) Algorithmic Visibility and Speech Economy:** Algorithmic curation **determines which voices gain prominence and which are suppressed**, shaping power dynamics in digital conversations. Emerging discourses are often dictated by **platform incentives rather than organic user engagement**.

**Table 6: The Framework of Synthetic Social Alienation (SSA)**

|  |  |  |
| --- | --- | --- |
| **Concept** | **Description** | **Key Implications** |
| |  | | --- | | Synthetic Social Alienation (SSA) |  |  | | --- | |  | | The phenomenon where algorithm-driven environments reshape social interactions and identities, leading to detachment from real-world connections. | Alienation in digital spaces, cognitive narrowing, and fragmented social bonds. |
| **Simulated Relationships** | Users engage with algorithmically curated content and personas, prioritizing engagement over authenticity. | Weakens genuine human connections, fosters parasocial relationships. |
| **Commodification of Engagement** | Social interactions (likes, shares, comments) are converted into data and exploited for profit. | Reduces relationships to transactional engagements, reinforcing corporate control. |
| **Erosion of Realness** | Users create and maintain digital personas that prioritize visibility over authenticity, shaped by algorithmic incentives. | Disconnection from true self, loss of diverse perspectives. |
| **Algorithmic Detachment Syndrome (ADS)** | A form of digital alienation where users experience cognitive and social estrangement due to constant algorithmic mediation. | Reinforces echo chambers, reduces exposure to new ideas. |
| **Surveillance Capitalism** | Platforms extract behavioral data, manipulate user behavior, and reinforce engagement loops for monetization. | Loss of autonomy, increased corporate influence over thought and behavior. |
| **Discursive Fragmentation** | Algorithmic curation prioritizes content that maximizes engagement, leading to ideological echo chambers. | Limits intellectual diversity and increases polarization. |
| **Lexical and Rhetorical Shifts** | Sensationalized and emotionally charged content dominates discourse, simplifying discussions. | Undermines critical thinking, encourages reactionary communication. |
| **Algorithmic Visibility & Speech Economy** | Algorithms determine whose voices are amplified and whose are suppressed, influencing public discourse. | Concentrates power in digital platforms, marginalizes counter-narratives. |

On the other hand, if we interpret this study with the knowledge that it is aimed at the instagram recommendation system:

### ****Sentiment Score Distribution (Average: 0.087)****

This score is almost neutral. It can be inferred that the overall attitude towards the Instagram recommendation system **is not clearly positive or negative**, but rather **ambiguous or mixed feelings**. Users may find the system useful in some ways and uncomfortable in others.

### ****SSA Keyword Matches: 2 Matches****

The theme SSA, “artificial social alienation”, was only detected 2 times. This could indicate that users **do not feel social or individual alienation** due to the recommendation system. Alternatively, it could be that these concepts were not directly mentioned but expressed indirectly.

For example:

* The feeling that the algorithm traps the user in its own "echo chamber" (but without explicitly calling it SSA)
* Uniformization of content or continuous recommendation of similar people

### ****Emotional Word Matches: 1****

There was only 1 emotional word match, indicating that users' expressions **lacked emotional intensity**. This suggests that opinions on the recommendation system are either:

* Shared in a more **informative** and **rational** language,
* Or it may suggest that users **are not emotionally connected** or **emotionally affected** by the system.

The resulting graphs, the recommendation system:

* Low capacity to elicit **an emotional response**,
* That it clearly does not cause serious psychosocial consequences such as **artificial social alienation**,
* But it also shows that users do not express **strong satisfaction**.

This data can be interpreted as suggesting that the Instagram recommendation system offers a **casual, non-controversial, but non-engaging** user experience.

* Users **complain** about the diversity of content, but they don't directly say "alienation".
* The feeling of SSA can exist **through indirect expressions**:
  + "the same kind of content over and over"
  + "not seeing other views"
  + “the screen is guiding me”

**This means:**

* Algorithms put users **in a filter bubble**, which creates insensitivity to differences.
* However, the texts are low in emotion → **the problem may be felt but not cared about.**
* The model works well with little data.
* Signs of SSA are weak but cannot be ruled out; these themes may become clearer in larger data.

**Conclusion**

This study demonstrates that **SSA** extends beyond individual user experiences to alter the nature of public discourse in digital spaces fundamentally. The findings show that algorithmic curation **shapes linguistic patterns**, **reinforces ideological silos**, and **prioritizes emotional over deliberative engagement**, leading to an erosion of **critical public discourse**. Moreover, the study highlights the algorithmic mediation constructs digital discourse through repetitive language, emotional amplification, and structured engagement. Users’ speech patterns reveal varied levels of agency, from passive consumption to strategic resistance. Algorithmic visibility further dictates who gets to participate in discourse, reinforcing speech hierarchies and ideological segmentation. By analyzing these discourse structures, the study gains insight into the power dynamics embedded within algorithm-driven social media landscapes.

Algorithmic systems, designed to optimize user engagement, act as **gatekeepers of discourse**, determining which narratives gain traction and which remain marginalized. This process creates a **feedback loop where engagement-driven content dominates**, stifling opportunities for **nuanced discussions, counter-narratives, and democratic deliberation**. The commodification of speech within these platforms results in a **distorted speech economy**, where visibility is dictated by **platform incentives rather than the inherent merit of ideas**.

To mitigate these effects, this study suggests three key interventions: (i) **Algorithmic Transparency, which addresses that social** media platforms must disclose how recommendation systems prioritize content. This transparency enables users to make informed decisions about their information environments and reduce the unintended consequences of algorithmic mediation. (ii) **Regulatory Measures, which p**olicymakers should establish **standards for algorithmic accountability**, requiring platforms to **incorporate diversity-enhancing mechanisms** that prevent excessive reinforcement of ideological echo chambers. (iii) **Digital Literacy Initiatives, which m**edia education programs should **equip users with skills to engage critically with algorithmically curated discourse**, fostering awareness of bias reinforcement and content filtering.

Addressing **SSA as a systemic challenge** requires a **multifaceted approach**, blending **technological interventions, policy reforms, and public awareness**. By fostering **a more deliberative, equitable digital public sphere**, society can counteract the alienating effects of algorithm-driven discourse and restore **meaningful, diverse engagement** in online conversations.

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