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Algorithmic Medias Res: YouTube Shorts, Affordances, and the Reconfiguration of Agency in Digital Consumption Practices

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Abstract

Digital platforms have influenced and reshaped the consumption of culture, entertainment, and news through their sociotechnical nature and algorithmic systems. Scholarly approaches to studying content flows within these environments have emphasized various perspectives: some focus on algorithmic systems' power in structuring environments that aggregate similar viewpoints, while others highlight user agency in resisting and repurposing platforms, still others focus on combinations of the two. This paper contributes to this debate through a longitudinal analysis of YouTube, based on data from 107 Italian users, comprising over three million data points across a decade. By triangulating users' searches and consumed content, this article considers how individuals navigate algorithmic recommendations while accounting for platform-level changes such as the introduction of YouTube Shorts. Findings reveal users increasingly consumed content while relying less on search features and more on algorithmic systems, demonstrating how new affordances can restructure user agency beyond algorithmic optimization alone. Rather than viewing agency as residing with either platforms or users, findings concur in pointing to how platforms frame agency, but it is ultimately co-constructed by technical, social, and cultural components. This in turn requires methodological approaches that can capture the evolution of the platform and the affordances framing digital consumption within it.

Keywords: algorithms, YouTube, consumption, platforms, affordances.

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1. Introduction

Digital platforms have fundamentally influenced and reshaped the consumption of culture, entertainment, and news in contemporary society. The sociotechnical nature of social media and digital platforms has generated diverse scholarly approaches to studying content flows within these environments, with particular attention to the balance between the social and material components that shape user experiences and content visibility. Existing research has focused on the interplay between user agency and the "structure" of algorithmic systems that dictate the distribution and visibility of content, while simultaneously affecting its creation. Some scholars have emphasized the power that algorithmic systems wield in guiding consumption, highlighting their ability to recommend targeted content to individuals or structure environments that aggregate similar points of view and social affinities, contributing to phenomena like topological confinement, filter bubbles, or echo chambers (Matamoros-Fernández et al., 2021; Roth et al., 2020; Shakespeare et al., 2025). Parallel streams of scholarship have focused on the agency that individuals maintain in resisting, manipulating, and repurposing platforms and social media (Bonini & Treré, 2024), on the impact of social and cultural contexts on platform use (Costa, 2018), and on the literacies affecting the understanding and navigation of algorithms and platforms (Gray et al., 2018; Pronzato & Markham, 2023). Finally, other research efforts have attempted to consider not only changes in distribution and consumption that platform-related consumption entails, but also the potential of platforms to affect and facilitate novel modes of consumption (Airoldi et al., 2016).

Thus, a growing body of research efforts has contributed to the scholarship around both specific platforms and the broader effects of social media across a variety of social, political, and cultural domains (e.g., Boyd & Ellison, 2007; van Dijck et al., 2018). This has included a focus on algorithms and algorithmic systems, due to their centrality in structuring digital environments, in turn addressing a vast spectrum of issues ranging from recommender systems to sorting algorithms, and accounting for their implications for, among others, subjectivation processes, consumption, and self-presentation (Airoldi, 2022; Caliandro et al., 2024; Gandini et al., 2023). In some cases, this has led to considering social media and platforms as "algorithmic media" (e.g., Bucher, 2018; Gillespie, 2016). While this does not mean a lesser focus on its broader effects, or on the role of individual agency in situated interaction (e.g., Klinger & Svensson, 2018), it reflects broader attempts to balance the social and technical nature of social media and platforms around algorithms. This narrow focus, it is argued, concurs in obfuscating the complex interplay between the encoded directions and objectives of a platform, each with its own political

economy, and individual cultures and contexts of use. In doing so, it centres, even if only conceptually, the potential agency of platforms and users on algorithmic systems rather than distributing it across the multiple affordances that collectively shape individuals' engagement with content (Seaver, 2017). Challenging the conceptual centrality of algorithms within the study of platforms does not mean understating or overstating their impact or influence. Rather, it is proposed to consider social media not as "algorithmic" or "new" media but, more fundamentally, as media (see Klinger & Svensson, 2018). This approach implicitly entails attention to the biographies of social media platforms, referring to the changes concerning the features and cultures of specific social media over time (Lesage & Natale, 2019). That is, we emphasize how the features, perceptions, and uses of platforms change over time, often in ways not entirely attributable to algorithmic shifts. Algorithms do not operate in isolation; they function as part of a broader ecology of media and are nested within complex systems comprising different algorithms that collectively structure digital environments. However, the media ecology of social media platforms is dynamic and evolving. New platforms rapidly emerge, introducing novel formats and interaction modes for cultural consumption within digital environments, as witnessed in TikTok's popularization of algorithmic feeds and short-form video content. Even seemingly minor and cosmetic changes within the same platform can significantly alter how individuals engage with it. On Twitter (now X), for example, the transformation of the favourite button from a star to a heart modified users' perception of the feature's possibilities, despite no functional changes in the underlying mechanics (Bucher & Helmond, 2018). As such, variations in the features of SNSs – the "low-level" affordances of social media such as the feed or the comment button (Bucher & Helmond, 2018) – can radically alter not only the structure of digital environments, but how they are used by individuals.

By focusing on YouTube's introduction of a new feature, YouTube Shorts, it will be shown how the introduction of a new affordance can concur in radically altering the morphology of a platform, affecting patterns of use, contextualising the scholarly focus on YouTube's search engines and recommendation systems (e.g., Airoldi, 2022; Rieder, 2020). By analysing the consumption patterns of 104 Italian users over a ten-year period, collected through GDPR and DSA-enabled data donations, we trace the evolution of platform engagement before and after the introduction of YouTube Shorts. Rather than focusing on how a single affordance might restructure individual engagement, the focus is on how what we conceptualize as a platform changes over time: is the short-form-based YouTube closer to TikTok, or to YouTube? This in turn raises different questions: to what extent are we studying platforms rather than specific affordances, and to what extent is a single affordance

representative of a broader platform? When analysing the output of a recommendation algorithm, how much can we infer about the platform, and how much is attributable to specific permutations of material and social practices? (Rieder et al., 2018). By providing an overview of aggregated consumption patterns on YouTube for a 10-year period, it is shown how users increasingly consumed more content over the years, while relying less on the search features to guide consumption and more on the algorithmic systems of the platform. This points to how the introduction of a new affordance can restructure user agency in ways that extend beyond algorithms and algorithmic optimization alone.

2. Theoretical framework

2.1 Algorithms, platforms, and agencies

The pervasiveness of algorithmic systems is not confined to consumption but extends to society as a whole (Burrell & Fourcade, 2021). The algorithms that govern platforms are not merely technical objects, but sociotechnical systems embedded in and shaped by cultural practices, institutional contexts, and human decision-making (Gillespie, 2014; Rama et al., 2022; Seaver, 2017). The distribution and visibility of content and issues on digital media are thus governed by social, cultural, and technical factors, making it increasingly harder to distinguish between the strict rules of bits and digital environments and the situational nature of social and cultural codes (Caliandro et al., 2024; Rieder et al., 2018). This holds especially true given the inherently iterative nature of digital environments, where the confounding effects and contaminations between inputs and outputs are especially hard to trace (Airoldi, 2022; Beer, 2022). Scholarship on consumption has thus theoretically and empirically attempted to unpack the individual, social, and technical factors affecting consumption within digital environments. This unpacking has mainly taken the form of two contrasting theoretical paradigms: one emphasizing the agency of individuals, empowered by the fluidity of digital environments; the other focusing on the constraints and nudges that platformized consumption might exert on individual choice (Airoldi & Rokka, 2022).

The duality of these approaches is visible in the body of literature focusing on the "algorithms" (Beer, 2017) governing consumption on social media and digital platforms. On the one hand, algorithms are a point of contact with platforms, fostering the development of individual and collective practices to understand and potentially affect algorithmic outputs and platforms at large (Bonini & Treré, 2024; Siles et al., 2020; Bucher, 2018). On the other, algorithms

are understood primarily as extensions of a platform that predict, nudge, constrain, and shape individual consumption practices through surveillance, datafication, and algorithmic governance (Airoldi, 2023; Flensburg & Lomborg, 2023; Kaliyamurthy & Schau, 2025; Zuboff, 2023). Both approaches emphasize either the power of users or the structure of digital platforms, with each corresponding to different understandings of individual agency within digital environments. In short, algorithms can empower individuals and groups who can develop strategic practices to navigate digital environments, in turn maintaining a degree of autonomy within highly structured digital contexts (Bhandari & Bimo, 2022; Cotter et al., 2022); conversely, a second focus is on how individual agency might be severely constrained by the power of prediction and classification of the algorithmic systems that manage the flows of content, where platform design choices and algorithmic sorting mechanisms create infrastructures of consumption that privilege certain content and behaviours while making others effectively invisible (Rama et al., 2022).

Some approaches, however, challenge a similar binary framing of agency versus platform power. Rather than focusing on the directionality of asymmetric power relations between platforms and users, then, the attempt is to balance individual agency and platform power. The emphasis then is on how algorithms might both reflect and reproduce social structures and norms, due to the situatedness of training data and human components in the development and deployment of algorithmic systems (Airoldi, 2022). Such a perspective highlights how algorithms are not neutral technical artifacts, but rather cultural products that participate, directly and indirectly, in the "techno-social reproduction" (Airoldi, 2022) of social and cultural orders (Beer, 2022; Benjamin, 2020; Noble, 2018). Emphasizing the mutual co-construction of sociotechnical systems, both in general and when accounting for their role in controlling or empowering consumption (Darmody & Zwick, 2020), does more than solve a theoretical impasse about the directionality of potential influences between platform and individual. Rather, it sidesteps the conflation of the agency of digital environments with the agency of a single non-human actor: the machine learning algorithms governing the distribution and sorting of content.

Accounting for a variety of human and non-human actors allows us to consider how algorithms might concur to affect consumption and the formation and management of identities (Rama et al., 2022; Langlois & Elmer, 2019). Implicitly, it moves the focus from algorithms - even when conceptualized as sociotechnical elements - to the broader ecology of features that structure digital platforms. Algorithms do not operate in isolation, but are embedded within complex platform environments featuring multiple affordances that collectively shape individual experiences.

2.2 Algorithms and/as affordances

In the study of social media and digital platforms, affordances have been conceptualized at different levels of analysis: high-level affordances describing "dynamics and conditions enabled by technical devices, platforms and media" (Bucher & Helmond, 2018, p. 12; Davis, 2020), and low-level affordances referring to specific technical features of a platform and its interface, such as buttons, feeds, or character limits (Bucher & Helmond, 2018). Far from being a purely analytical difference, such a distinction between two different levels reflects a broader conceptual tension concerning how to unpack the mesh of social and technical factors affecting digital media use (Ronzhyn et al., 2023, Evans et al., 2017; McGrenere & Ho, 2000). Here the focus will be on low-level affordances rather than on the broader dynamics that high-level affordances refer to, and thus on the specific interface elements and features that users directly interact with. Drawing on the ecological psychology and design perspectives that created and popularized the concept of affordance (Gibson, 1979; Norman, 1988), the features of platforms are here intended relationally: affordances will then be understood as situated between the materiality of platform environments and the perception of individuals; a relational perspective foregrounds individual agency, accounting for how needs, culture, norms, and literacies influence which features users act upon, how, and for what purposes (Faraj & Azad, 2012). The same feature - such as a "like" button - can thus be used to signal social support among peers (Hayes et al., 2018) or as a form of digital labor (Gandini, 2016). This does not mean bracketing the agency of platforms and non-human actors, as explicated by the concept of imagined affordances (Nagy & Neff, 2015). Nagy and Neff consider the expectations, beliefs, and emotional responses that emerge "between users' perceptions, attitudes, and expectations; between the materiality and functionality of technologies; and between the intentions and perceptions of designers" (2015, p. 5). This perspective allows to consider how consumption practices are shaped by a combination of what platforms technically enable, by how these features are perceived, and by the culture and intended uses encoded within interfaces and functions (see Light et al., 2018). Rather than approaching consumption as determined by either platform structures or individual agency, then, this perspective situates agency in the process of navigating, discovering, interpreting, and appropriating digital environments based on their affordances (McVeigh-Schultz & Baym, 2015). Thus, it allows us to consider how individual agency operates within the constraints and possibilities established by platform architecture.

Platforms present users with complex ecologies of affordances that collectively structure consumption practices. From this perspective, it becomes

apparent how algorithms do not operate in isolation; rather, they function in concert with other affordances to structure digital environments and thus affecting consumption practices and experiences (Airoldi et al., 2016). Different affordances often intersect and mutually influence each other. Creating a profile on a platform, for example, has a direct and often radical impact on how content is algorithmically distributed (Rama et al., 2022). For what concerns YouTube, Postigo (2016) demonstrates in his study of user-generated content how technical features such as the subscription system can be analyzed both for their specific functionalities and for how they collectively enable particular forms of content distribution, consumption, and participation. Similarly, Rieder et al. (2018) underline how different affordances such as metrics, algorithms, and interface features collectively create "ranking cultures" (Rieder et al., 2018) that guide consumption practices. Finally, the affordances guiding consumption and production are often mediated by collectively co-constructed social and cultural dynamics (e.g., Massanari, 2015; Weltevrede & Borra, 2016; Gaudette et al., 2020; Esposito & Stark, 2019; Rama et al., 2022).

Approaching digital platforms through affordance theory provides a comprehensive framework for understanding how consumption practices emerge, evolve, and diversify. This perspective recognizes that user agency operates in relation to an ecology of affordances that collectively structure consumption possibilities while remaining open to diverse interpretations and uses. As platforms introduce new features or alter existing ones, then, they reconfigure the affordance landscape in ways that can fundamentally alter consumption patterns. These changes cannot be reduced to algorithmic effects alone but must be understood as emerging from interactions between multiple affordances and user practices.

2.3 More than a feature: YouTube shorts

The introduction of new affordances can alter platformized consumption patterns in ways that extend beyond a single change. In 2021, YouTube globally launched a new feature of the platform: Shorts. Shorts are vertical short-form video content, mostly consumed through the scrolling of an infinite and algorithmically personalized feed. Following its launch, Google introduced a creators' fund to remunerate creators who produced short-form content. Several changes followed, such as the introduction of tools for creators to edit short-form content. Finally, in 2023, Shorts became fully monetizable through the YouTube Partner Program, marking their full integration into the broader political economy of YouTube. The feature and experience are somewhat similar to another short-form platform, TikTok: content is rapidly scrolled

through, and the engagement with individual pieces of content is brief and ephemeral, and the content is potentially "infinite" (Echauri, 2023; Bruschi et al., 2024). Despite such similarities, TikTok has a stronger emphasis on the collaborative and memetic dimensions of content creation and consumption, while Shorts more aptly leverages the established creator ecosystem in which they are embedded (Rajendran et al., 2024; Violot et al., 2024; Zulli & Zulli, 2022).

The implementation of Shorts on YouTube corresponds to what Gerbaudo (2024) calls "TikTokification": the algorithmic recommendation of ephemeral, continuous, short-form content, and how it contributes to reconfigure the social components of social media. From publics formed through interpersonal connections, be it with friends and acquaintances or content creators, to interest and taste-based clusters assembled through the algorithmic recommendation system structuring TikTok and, by extension, YouTube Shorts. The shift in how publics are assembled by these "second-generation social media" (Gerbaudo, 2024) is particularly relevant, as it forefronts the power and the contextuality of algorithmic systems in affecting consumption. The technical components such as vertical orientation, time limit, and swipe-based navigation of Shorts frame the algorithmic recommendation of content; in turn, the combination of these affordances concurs to structure social formations, affecting the creation and distribution of both short and long-form content (Violot et al., 2024). Finally, Shorts introduces new forms of consumption that exist in tension with YouTube's search and subscription-based long-form content; further complicated by the same content creators operating on both short and long form content (Rajendran et al., 2024). While recommendation algorithms determine which Shorts users see, the existence of the short-form vertical video format as an option fundamentally alters what content users can consume, how, and why (see Arthurs et al., 2018).

The introduction of Shorts, thus, radically alters the "flow" of the platform (Firth & Marinelli, 2025; Pietrobruno, 2018; see Williams, 2004), that is, the way that cultural and technical factors coalesce to affect the overall consumption of content on the platform. While the algorithms recommending content and sorting search results are thus paramount, the concept of flows frames the role of algorithms as one of the components structuring user experience and consumption, rather than the only or main feature guiding consumption. The conceptual centrality of algorithms is exemplified by the adoption of the term "algorithmic media" to describe algorithmically curated digital environments (e.g., Gillespie, 2016; Bucher, 2018; Carah & Brodmerkel, 2020). Such a term forefronts the role of algorithms as non-human actors, even when accounting for individual and collective understandings and situated uses of social media and digital platforms.

Due to the ever-evolving nature of social media, defining digital environments as algorithmic media obfuscates how the technical features and cultural understandings of platforms change over time. To this end, it might be more useful to account for the trajectory of platforms, considering their evolution over time rather than considering them as stable objects of research. This means accounting not only for the introduction of new features, but on the perceptions and the social and cultural context of use surrounding them. That is, considering the biography (Lesage & Natale, 2019) of social media, platforms, and digital environments as unfolding at the intersection of narratives, perceptions, and materialities. From this perspective, the introduction of an affordance such as YouTube Shorts is not only a reconfiguration of the platform's affordances. Rather, it potentially alters the very fabric of YouTube: how it is used, perceived, and understood; more broadly, the introduction of Shorts reconfigures how consumption unfolds in manifold ways.

3. Data and methods

To highlight the changes in platform dynamics over time, the focus is on how the introduction of a new affordance, YouTube Shorts, altered consumption patterns on the platform. By tracking 10 years of content consumption on YouTube, we attempt to situate the introduction of Shorts within the browsing patterns of over 100 respondents. Notably, the effort here is not to produce deterministic accounts of how a single feature might have causally affected individual browsing patterns. Rather, it is considered how the introduction of a single feature might alter and reconfigure the tensions between individual agency and platform in framing consumption. To do so, we leverage a dataset of 2.653.361 YouTube interactions, consisting of the totality of the videos watched and the searches made by a sample of over 102 Italian respondents, and collected as part of the ALGOFEED project (Feedback culture: assessing the effects of algorithmic recommendations on platformized consumption).

3.1 Data collection and the ALGOFEED project

The ALGOFEED project investigates the impact of recommendation systems on online content consumption. It focuses on the feedback loops (see Airoldi & Rokka, 2022) between users and algorithms, as mediated by platform infrastructures, and their impacts on platformized consumption. The research

involved a quota sample of 240 individuals aged 18 to 40, who are active users of YouTube and TikTok, and reside in the Italian regions of Lombardy and Campania.

ALGOFEED employed a mixed-methods research design (Punziano et al., 2024a), consisting of: 1) a preliminary survey assessing participants' digital skills, consumption habits, media and social media use; 2) the collection of individual browsing data for YouTube and TikTok, by leveraging the data donation procedures framed and made possible by the Digital Service Act and the General Data Protection Regulation; 3) qualitative interviews with a subsample of participants, focusing on individual perception and use. The sampling strategy allowed to obtain a balanced distribution in terms of gender, age, education, and location. For the data donation procedure, individuals were asked to download their data directly from YouTube and TikTok, aided by a video guide, and to upload them to a third-party platform to ensure proper anonymization.

The final dataset is comprised by 2.653.361 interactions on YouTube, which occurred between May 31, 2014, and May 31, 2024; while the original dataset reaches back to 2010, only ten years have been selected to ensure consistency across respondents, and to avoid differences given by accounts created at different times. Digital data is available for 102 respondents, and it consists of searches made on the platform and videos watched; the content does not include advertisements, which have been removed from the final dataset. The content has been enriched with additional metadata by the project's partner, AI Forensics. The dataset thus includes a variety of metadata, such as user-level metadata (age, gender, location, education, parents' education); video-level metadata (title, description, time of view); search-level metadata (search, time of search). From this, additional indexes have been composed. For individuals, cultural capital has been considered by combining individual and parental educational level: the cut-off point is the attainment of a high-school diploma, separating the low and high dimensions of cultural capital (Bourdieu, 1984). Shorts were identified based on the presence of the word "shorts" and its permutations (e.g., short, youtubeshorts) in either the title or the description. While other variables such as duration or URL discrimination (i.e.: identifying the video type from the URL) would have allowed for more precise tracking of which videos were shorts, such data was available only for the last year of data and has thus not been considered. Word-based identification, however, showed a similar distribution to length-based distribution for 2023, as well as an increase in occurrences consistent with the introduction and changes to Shorts. While using keywords to identify shorts is limiting, as it might not reflect the complete distributions of short-form content on the platform, it still contributes to

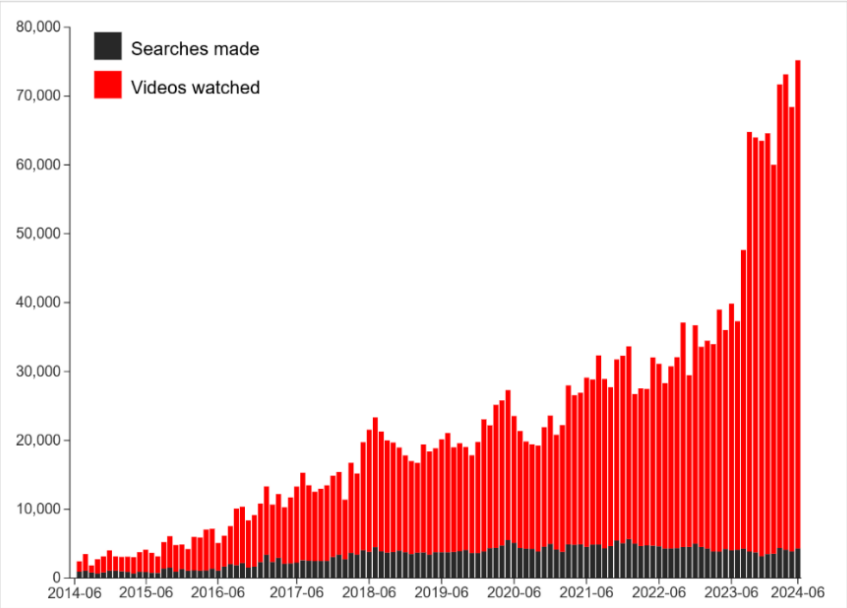
contextualise the evolution of YouTube over time - especially when considered searches and Shorts as a subsample of content watched.

Finally, a search-to-view ratio has been computed to gauge changes in patterns of consumption. It represents the number of videos watched by a user per single search made. Searches have thus been considered as an active entry point into the platform by the users, driven by individual agency rather than algorithmic recommendations; conversely, content watched without any searches has been considered as being content recommended by YouTube's algorithmic system. While operationalizing agency and platform power as search and views might obfuscate some information such as, for example, the materiality of devices framing consumption, it still provides a rich and non-self-reported source of data. Notably, data is limited to the Italian context: while Italy has its own specificities for what concerns age and media literacy, for example, the depth of the data collected still provides useful insights into how YouTube and individual consumption patterns changed over time across different social groups.

4. Findings

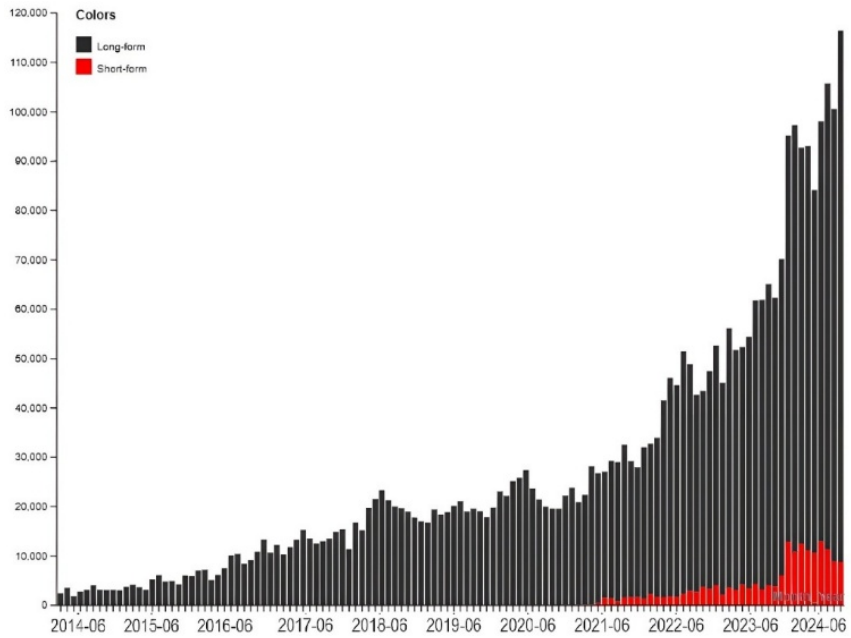
YouTube consumption patterns changed over the course of the ten years taken into account. In the following section aggregated consumption data will be considered, paying particular attention to the introduction of Shorts, and how it might have affected platformized consumption. As shown in Figure 1, the videos watched by the sample increased substantially over time, consistent with an increase in digital video consumption. While the increase follows a gradual trajectory across most of the time period considered, there is a remarkable peak in September 2023. The aggregated sample watched approximately 43,000 videos per month on average in 2023: a significant increase from an average of around 1,000 in 2015 - the first and last years for which complete monthly data is available. Despite an increment in videos watched per month, a similar pattern does not apply to searches, which remained stable – and even slightly decreased – over the course of the years.

Figure 1 - Monthly number of videos watched (red) and searches performed (black) on YouTube, 2014–2024



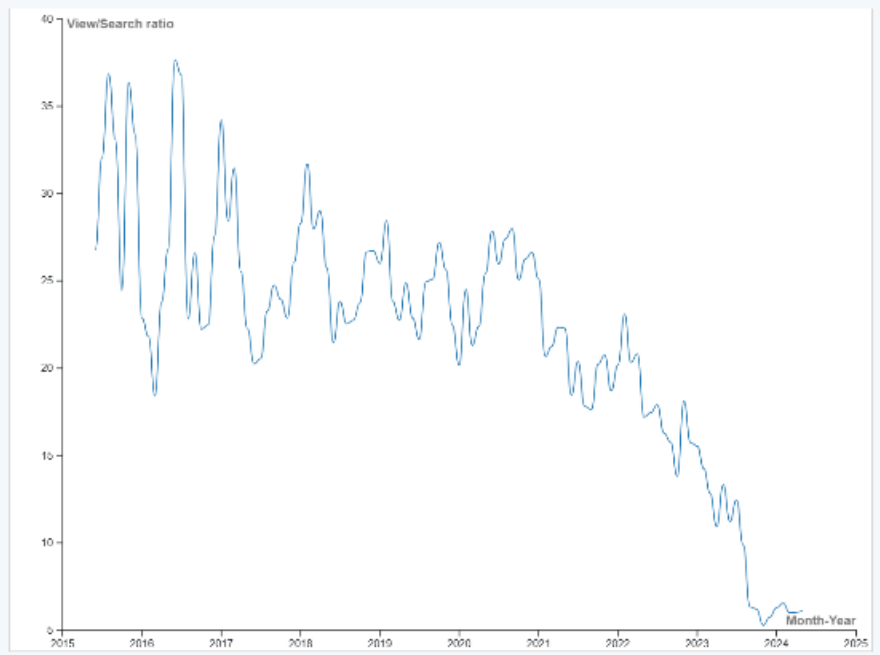
An increase in videos watched would align with the proliferation of short-form content on the platform (Rajendran et al., 2024; Violot et al., 2024), indicating an increase attributable, at least to some extent, to the reduced length of Shorts when compared to full videos, as well as to the "infinite" algorithmic infrastructure distributing said content (Echauri, 2023). As shown in *Figure 2*, the increase partly corresponds to the introduction of Shorts in 2021, and to the integration of Shorts within YouTube's remuneration ecosystem in 2023. Aside from the introduction of Shorts, an increase in videos watched might also have resulted from a variety of policy or platform affordances, changes in the materiality of devices, or overall broader shifts in consumption for what concerns digital video content. However, the introduction of Shorts provides a useful lens to consider how platform changes affect consumption in layered and complex ways.

Figure 2 - Monthly number of total videos (black) and Shorts (red) watched on YouTube, 2014–2024.



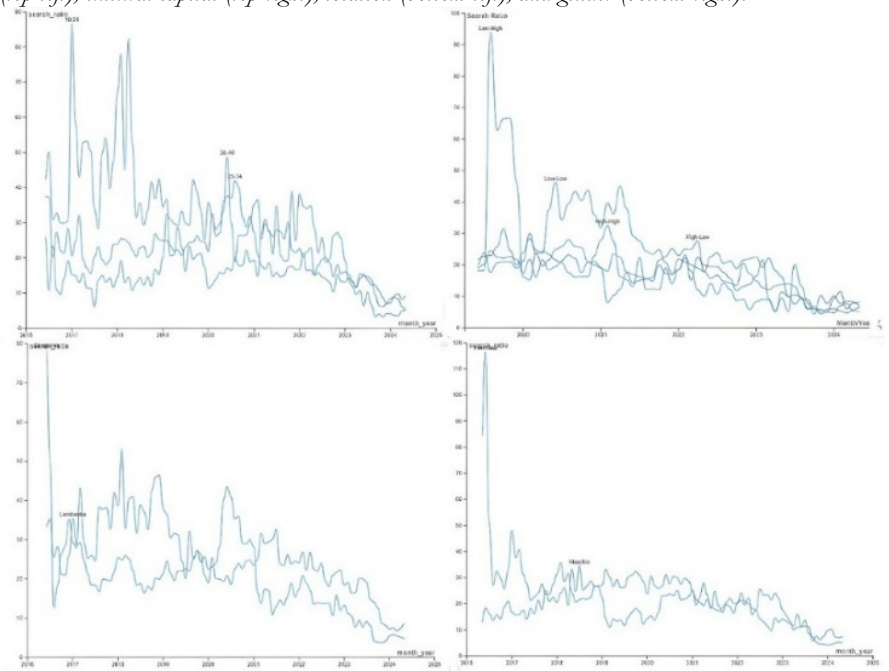
The changes in how users approach the platform is clearly seen when considering a search-to-view ratio; that is, the average number of videos watched per search query made, aggregated by month (*Figure 3*). The changes here are particularly visible: users watched 33 videos per search on average in 2015; in 2023, this number dropped to an average of 10 videos watched. This decline is particularly pronounced when considering 2023 as a whole: from an average of 13 videos watched per search in the first seven months, to just 7 in the final months of the year (see *Figure 3*).

Figure 3 - Average monthly search-to-view ratio on YouTube, 2014–2024 (number of videos watched per query.



This decreasing search-to-view ratio suggests a shift in how users discover and engage with content, as individuals search less and watch more. This might be attributable to a higher accuracy in recommending content, to shifts in the topology of the platform, or to broader changes in aggregated consumption patterns. Regardless, results point to a stronger role of algorithms in driving content consumption, circumventing individual agency understood as searches; this, in turn, further problematizes the sociotechnical roots of recommendation algorithms, especially when considering them as non-human actors fuelled by situated interaction and digital traces (Airoldi & Rokka, 2022; Beer, 2022).

Figure 4 - Average monthly search-to-view ratio on YouTube, 2014-2024. Aggregated by age group (top left), cultural capital (top right), location (bottom left), and gender (bottom right).



Changes in consumption patterns, considering the search to view ratio, are consistent across different sociodemographic groups (*Figure 4*). While usage patterns vary in absolute terms, the overall trend of increased consumption and decreased search-to-view ratios remains constant across gender, age, location, and levels of cultural capital. The videos watched per search decreased across all groups, though at different rates. When considering the introduction of Shorts specifically, the decrease in individual exploration following its 2021 introduction was not consistent across all groups, pointing to the potential relevance of individual factors in driving early adoption. Cultural capital appears significant in explaining different rates of feature adoption; however, these differences largely disappear by 2023, where all demographic groups consistently searched less and watched more content on the platform, as Shorts became increasingly embedded the platform ecosystem and its political economy.

5. Conclusions

The introduction of Shorts has concurred in altering consumption patterns on YouTube. As shown, the short-form vertical content format has been increasingly viewed, representing a growing proportion of both user consumption and content creation on the platform (Rajendran et al., 2024; Violot et al., 2024). The increase in consumption in both long and short-form content, from around 1,000 videos monthly in 2015 to 43,000 in 2023, coincides with the introduction of Shorts on YouTube first, and of their full integration into YouTube's ecosystem and monetization program in 2023. Aside from an increase in content consumed, results points to a decrease in the videos watched per search made by our users, from 33 videos per search in 2015 to around 10 in 2023, with the decrease aligning with changes in content consumption seen in the second half of 2023. This shift suggests a fundamental transformation in how users discover and engage with content on the platform. While causality directly linking Shorts to these changes cannot be claimed given the data at hand, these patterns nonetheless highlight how changes in platform affordances are not merely technical modifications. Rather, they entail changes in usage patterns in ways that are neither easily predictable nor theoretically or methodologically easy to isolate. The introduction of Shorts on the platform led to the change and implementation of a series of interconnected affordances that collectively alter the entire platform experience. This influences not only what content users consume but how they discover, engage with, and interpret content. The technical components such as vertical orientation, time limits, and swipe-based navigation, frame the algorithmic recommendation of content; in turn, the combination of these affordances alters the experience on the platform, affecting the cultural norms and the social formations unfolding within it, and thus affect the creation, consumption, and distribution of all content on the platform. For example, while the search function remains available, it has become increasingly less relevant for users over the years, as YouTube increasingly leaned on short-form content and algorithmic recommendation rather than searches.

While changes in consumption patterns on YouTube must be contextualized within broader transformations in digital content consumption habits over the past decade, the focus here is not on determining causality or directionality. Rather, the introduction of Shorts and rich longitudinal data allows to consider how changes in platform affordances reconstitute and reconfigure the distribution of human and non-human agencies that frame digital consumption practices. The introduction of Shorts corresponds to what Gerbaudo (2024) identifies as "TikTokification", entailing changes in platform affordances such as the increasing adoption of short-form vertical content,

infinite scrolling feeds, and browsing-based content. Much like TikTok, changes extend far beyond technical features: the implementation of Shorts on YouTube concurs in altering the platform's social component, by shifting from publics formed through interpersonal connections with friends, acquaintances, or content creators to interest and taste-based clusters assembled through algorithmic recommendation systems. This restructuring of how publics are assembled by these "second-generation social media" (Gerbaudo, 2024) underlines both the power and contextuality of algorithmic systems in shaping consumption. The introduction of Shorts has thus altered both the grammar and the vernacular of YouTube. The platform's grammar, that is how digital environments allow and frame action, have changed, as have its vernaculars: the cultural and social norms affecting the situated production and consumption of content (Caliandro et al., 2024). This is the case, for example, of the shift from a search and creator-based discovery to continuous scrolling, from horizontal long-form content to short, vertical, videos. How does such a change affect how we account for algorithms, and their role in framing and affecting digital consumption? The flow of the platform is regulated by algorithms for both Shorts and videos, but what and how they recommend is radically different: different content, with different interfaces, in different parts of the platform. Introducing the potential of algorithmic feedback loops (Airoldi & Rokka, 2022), or the ways through which algorithmic recommendation might involve user profiling rather than content consumed (Rama et al., 2022), further complicates the picture of how to account for agency within platformized consumption.

Conceptually, we can account for the reconfiguration of agencies by relying on affordance theory. Changes in affordances concur to restructure platform environments, their effects and implementation laying at the intersection of the agency and choices of users, designers, and technical components (Nagy & Neff, 2015), and their interpretation and agency suspended between user and feature (Gibson, 1979; Rama, 2022). As such, content consumption is not necessarily restrained or empowered by algorithms. Considering YouTube, the introduction of Search did not concur in diminishing user agency, and it was not necessarily bracketed. Rather, it underwent a reconfiguration: while it is exerted less through searches and the selection of content from a multitude of algorithmically curated choices, arguably the very choice of using YouTube Shorts is a manifestation of individual agency. This, in turn, rather than diminishing, rearticulated agency, for example by relying less on content selection and more on manipulations of the feed (see Bruschi et al., 2024). More than considering algorithms and algorithmic agency per se (Airoldi, 2022; Bonini & Treré, 2024; Pronzato, 2024), then, it is useful to consider the social, cultural, and technical context framing the algorithms affecting consumption;

considering algorithms as affordances allows to consider the ways through which agency is distributed across both individuals and technical features. This is not limited to YouTube, but rather it underlines the need to account for the history and trajectories of both individuals and platforms, technically and culturally (Lesage & Natale, 2019). As such, considering the potential shifts in what a platform is, why it is used and by whom, and what connective logics articulate the "social" of social networks becomes a necessity to fully grasp the intersection between individuals and digital media at large. Methodologically, this might point to the need for the collection of platform data spanning a longer time-period, and thus allowing to account for, or at least mitigate, reconfigurations and changes in platform affordances and their surrounding social and cultural contexts (e.g., Beuscart et al., 2022). This can be done by leveraging data donation or data tracking procedures, or by relying on qualitative techniques aimed at unpacking the individual understandings of affordances framing digital consumption (e.g., Punziano et al., 2024b; Zannettou et al., 2024). In this case, this has been done by collecting consumption data from a sample of Italian YouTube users, and by pairing digital data to sociodemographic data.

The introduction of YouTube Shorts highlighted how affordances can concur in altering and reconfiguring the agency of users within a platform. Rather than viewing agency as either residing with platforms or users, then, it is conceptually and methodologically useful to consider individual agency as co-constructed and emerging through the continuous negotiation between platform affordances and user practices.

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