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Panel 23. Human-AI feedback loops in platformized consumption

Convenors:

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Keywords: AI, consumer culture, feedback loop, platformization, recommendation systems

Platform users absentmindedly interact with proprietary AI systems recommending a variety of personalized content (e.g., social media posts, music, news, people, products). Scholars have highlighted how such recursive and generally opaque human-machine interactions are at the core of platforms' extractive business model, and discussed their social and political implications through conceptual lenses such as "filter bubble" (see Bruns, 2019), algorithmic "power" and "resistance" (Bonini and Treré, 2024), "traps" (Seaver, 2022), "hypernudging" (Yeung, 2017), "diversity" and "confinement" (Roth et al., 2020).

This panel encourages the study of platformized human-AI interactions in light of another notion, that of "feedback loop". From a cybernetic perspective, feedback mechanisms make learning possible to both humans and machines. When platform users and recommender systems interact, feedback-based learning regularly happens both ways: on the one hand, AI recommendations expose users to selections of content they "may also like", orchestrating their digital consumption habits; on the other, based on users' datafied behaviour, machine learning systems iteratively update their parameters, aiming to better anticipate future consumption desires. Hence, personalised recommendations end up shaping the very behavioural data on which they are computed, producing a techno-social circuit raising big sociological questions (Beer, 2022).

What are the effects of human-AI feedback loops on platformized consumption and "consumer culture" more broadly (Caliandro et al., 2024)? How does the accelerated temporality of online content consumption habits intersect with the predictive habits (and habitus) of machines (Airoldi, 2022)? In what ways can we trace and interpret the recursive interactions between the users of TikTok, Instagram, YouTube or Spotify, and the opaque recommender algorithms at work within such data-intensive infrastructures? These are some of the questions this panel aims to address by selecting theory-driven, empirically sound and methodologically innovative contributions that are attentive to the social and cultural dimensions of platformized feedback loops, beyond technologically deterministic simplifications.

Contributions may cover, but are not limited to, the following topics:

- feedback loops, AI recommendations and the platformization of consumer culture;
- the interplay between platform personalization and (more-than-human) habits;
- how feedback loops vary across social categories and platformized cultures;
- market infrastructures and the engineering of feedback loops;
- platform-based feedback loops in music streaming and cultural consumption;
- cross-platform analyses of human-AI feedback loops;
- innovative methodological solutions in the study of platformized consumption.

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11 JUNE 2025 14.30 - 16.30 SESSION 1

ID 660 - Exploring Feedback Loops with the Lens of Autonomy

Minna Ruckenstein, Helsingin yliopisto

Keywords: algorithmic system, autonomy, feedback loop

When people talk about their interactions with algorithmic systems, they often bring up their concerns about autonomy. How can we maintain autonomy amidst persuasive machinic agencies? Despite these widely shared concerns, autonomy is a much less explored and discussed value than privacy, for instance. One reason might be the fluid and paradoxical nature of autonomy: the concept simultaneously points to self-governance yet requires support for its fulfillment. Autonomy is also constantly negotiated, and it can never be fully resolved. In our earlier work (Savolainen and Ruckenstein, 2024), we differentiate between four dimensions of autonomy in human-algorithm relations, aiming to clarify how autonomy becomes restrained and how it can be guarded or strengthened. At its best, autonomy can be activated as reflective and informed choice. This aim can be enhanced by means of technical mastery and algorithmic literacy. Yet, human-autonomy relations also operate in the realm of the intimate, where affective aspects of autonomy become activated when algorithmic systems creep closer to our minds and bodies. This is a much more difficult realm to maneuver, and it raises questions of how to protect what we call 'breathing space' in human-algorithm relations.

In this talk, I will offer a quick overview of the four dimensions of autonomy and discuss how they relate to the notion of feedback loop. The concept of feedback loop refers to a cyclical process where the output of a system is fed back into the system as input, influencing subsequent actions and decisions. In the context of algorithmic systems, feedback loops can manifest in various ways—through user interactions that shape algorithmic responses or through the data generated by users that inform future algorithmic behavior. These loops can either reinforce user autonomy or undermine it, depending on how they are designed and implemented. Feedback loops can provide inspiring insights and control over interactions with algorithmic systems. Other kinds of feedback loops can lead to felt losses of autonomy. When algorithmic systems manipulate feedback in ways that nudge users toward specific behaviors or choices—often without their awareness—individuals may find their autonomy compromised.

By examining the active ways in which autonomy and feedback loops intertwine, we can better understand the ethical and political implications of algorithmic systems, guiding us toward issues of specific importance. The focus on feedback loops teaches us to think of the longer-term implications of algorithmic relations where users are not fully aware of how their data is being used or how their interactions are being shaped by algorithmic influences. From this perspective, autonomy is never merely a theoretical concern; it is also a service design aim and a publicly shared value that must be actively cultivated within the feedback dynamics of human-algorithm relations.

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Savolainen, L. and Ruckenstein, M., 2024. Dimensions of autonomy in human–algorithm relations. New Media & Society, 26(6), pp. 3472-3490.

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ID 461 - User Autonomy in Human-AI Feedback Loops: A Study of the Rednote Platform

Yiran Gao, University of Illinois at Urbana-Champaign

Keywords: user autonomy, AI, feedback loops, social media, rednote

This paper investigates user autonomy within the human-AI feedback loops on the Chinese social media platform Rednote, exploring how its unique interface and functionality, combined with AI-powered personalized content recommendations, provide users with a heightened sense of control over their digital

experiences. Rednote's distinct blend of features—mixing elements from Instagram, TikTok, Reddit, and X/Twitter, its engagement-by-choice browsing interface, and its quick AI training response time—creates a platform where user agency is central to its design. With a low entry bar and a welcoming posting environment, Rednote fosters a community-driven space that prioritizes sharing and discussion over influencer-centric content.

Through the lens of autonomy bias—a psychological theory applied to mediated experiences that suggests individuals derive greater satisfaction from choices and processes they perceive as under their control—this paper examines how Rednote's feedback loops promote a sense of autonomy and agency among its users. The platform's mix of search, browsing, and discovery mechanisms enhances user autonomy by allowing users to explore content without feeling entirely tethered to algorithmic predictions. The immediate feedback provided by the AI—shifting recommendations based on user interactions—reinforces users' sense of control, as they see the direct impact of their choices on the content they encounter.

However, the recursive nature of these feedback loops also raises important questions about how autonomy is mediated by algorithmic processes. While users are presented with a broader range of options and agency in shaping their content discovery, the AI continues to refine its suggestions based on accumulated data, potentially narrowing the scope of user experience over time. The use of autonomy is essentially a "feel-good" experience. This paper argues that by combining autonomy bias with AI-driven feedback mechanisms, Rednote creates a platform where user control is both empowered and constrained, illustrating the complex interplay between user agency and algorithmic influence.

Through theoretical analysis and empirical observations, this paper explores the sociocultural implications of autonomy in platformed environments, highlighting how Rednote's design navigates the tension between user empowerment and the risk of algorithmic determinism. In doing so, it offers new insights into how feedback loops shape user autonomy in contemporary digital spaces.

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ID 534 - The sanitisation of data in AI-driven market research

Laura Bruschi, Università degli Studi di Milano Statale

Keywords: Market research, ethnography, artificial intelligence, consumer data

In mainstream marketing literature, AI is often presented as both a solution for managing large volumes of data (Campbell et al., 2020; Gabelaia, 2024) and a means to achieve fast, accurate, and objective data analysis while predicting future trends (Haleem et al., 2022; Ma & Sun, 2020). However, critical scholars have highlighted how the increasing reliance on algorithms also increases the opacity of market research. In this sense, not only do claims of algorithmic neutrality and transparency remain alleged (Airoldi, 2022), but they become even more concerning when they are developed by developed by private companies and remain largely "immune from scrutiny" (Pasquale, 2015, p. 5).

Hence, this study examines the growing role of AI in marketing by investigating how consumer data is processed and analysed in AI-driven market research. To do so, it draws on data collected during a seven-month ethnographic study conducted in a market research agency that has developed its own AI-system to analyse consumer data, generate marketing insights, and forecast market trends.

In particular, this research introduces the concept of sanitisation, an AI-driven process in which (consumer) data is filtered, categorized, and refined to remove potentially disruptive elements, ultimately producing ""clean"" marketing insights. This work, therefore, aims to (1) define and conceptualize sanitisation, (2) identify the key elements that underpin this process, and (3) explore its broader implications for contemporary marketing and consumption practices. Furthermore, in alignment with the panel, the presentation will reflect on the existence of a loop of sanitised data wherein fieldwork findings indicate that market research agencies collect and analyse data that is already aligned with sanitised and corporate-approved standards. As a result, rather than offering a more comprehensive understanding of consumer behaviour, AI-driven market research may instead reinforce a narrow, sanitised vision of the market.

Moreover, this conceptualisation represents the evolution of principles that have shaped market research since its inception. It builds upon Arvidsson's (2004) analysis of the containment paradigm in early market research, where the ABCD system was used to reduce consumer complexity—shifting the focus away from consumers themselves and toward providing "scientific legitimacy" to speculations about consumer behaviour. Sanitisation thus emerges as an updated, automated continuation of this process.

Beyond the case analysed in this work and its relation to the inherent opacity that AI brings in the socio-technical construction of marketing insights, the concept of sanitisation has broader applicability for platformised consumer culture at large (Caliandro et al., 2024), but also with black boxing, and the reliance on categorisations and classifications inherent in machine learning algorithms.

Finally, the concept of sanitisation has broader implications for platformised consumer culture (Caliandro et al., 2024) and critical AI studies, that expand its significance beyond the specific case analysed in this work and its relation to the inherent opacity that AI introduces in the socio-technical construction of marketing insights.

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ID 231 - The Scope of Algorithmic Fairness and What Lies Beyond: On the Sociotechnical Affordances of Recommender Systems.

Bernhard Wieser, Technische Universität Graz

Keywords: fairness, recommender systems, affordance, power asymmetries

Recommender systems are a central element of platformized consumption. The core component of such algorithms is the analysis of previous user behaviour [6], [3]. In this way, consumers become enrolled into sociotechnical networks, rendering behavioural feedback for the refinement of recommendations that these technologies allow to compute [4].

This contribution draws on a study conducted within the framework of a research project on "fair recommender systems." Fairness is a concept that has gained particular prominence in computer science, addressing recognized problems such as the under-representation of individuals or social groups, reduced visibility, and even discrimination [1], [2]. Additionally, fairness refers to the avoidance of various types of biases causing adverse effects in the performance of AI technologies. Research in computer science not only evaluates AI-related fairness problems but also proposes methods to mitigate identified fairness concerns [5].

This contribution aims to critically reflect on such techno-centric operationalizations of fairness. Accordingly, we ask: What lies beyond the scope of algorithmic fairness, and what is required for a comprehensive understanding of inequality, exclusion, and social injustice in platform economies and their computational instruments?

To answer these research questions, we will address the material affordances of recommender systems and the infrastructure they require. Secondly, we will address the invisible human labour behind AI technologies—work that is poorly paid or not compensated at all. Thirdly, we will address the power asymmetries resulting from the monopoly position of global platforms. Fourthly, we will look into the ways in which recommender systems pre-structure choices. Against this backdrop, we show how fairness issues can be addressed through computational methods, but also what lies beyond the scope of algorithmic mitigation and thus requires a more comprehensive analysis of inequality, exclusion, and social injustice in platform economies.

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11 JUNE 2025 14.30 - 16.30 **SESSION 1**

ID 675 - When feedback fails: broken loops in insurance and healthcare

Maiju Tanninen, KU Leuven

Keywords: Feedback loop, data, algorithm, insurance, healthcare

This paper examines how the ubiquitous promises of optimization, predictability and seamlessness – supposedly achieved through digital feedback loops – manifest when data-driven feedback systems are implemented beyond tech firms, social media or streaming services. Digital feedback loops create an interactive and mutually influential relationship between an algorithmic technology and a user, in which the actions and interventions on one side impact the other (Fourcade and Johns, 2020; Mathieu and Pruulmann Vengerfeldt, 2020). This is often expected to create a seamless alignment between users and technologies, leading to optimized outcomes, efficiencies and new market opportunities. However, the recursive and predictive nature of algorithmic systems has been criticized for exerting control and potentially narrowing future possibilities, as such looping effects can amplify certain behaviours while suppressing others (Nowotny, 2021).

These concerns have been particularly relevant when the promises of algorithmic technologies are tested in established and essential fields, such as insurance and healthcare. This paper examines how the idea of a digital feedback loop is implemented in these fields using two empirical cases, with a particular focus on breakdowns in their practices. First, it discusses Finnish life insurers' attempts to collect customer-generated data for risk calculations and behavioural interventions, showing how the data loop between the policyholders and insurers dissolves at various points or is never established due to shortcomings in new technologies, regulatory barriers and aspects inherent to insurance logic (Tanninen, 2024). Second, it discusses physicians' experiences with the implementation and use of a multi-purpose patient data system in Southern Finland, highlighting the fundamental mismatch between the physicians' data labour and the system's output and the devastating effects that this misalignment has on medical practice.

The paper shows that while digital feedback loops function in some contexts, implementing similar ideas in fields with long traditions and strict regulations is difficult. It challenges the assumption that digital feedback loops emerge automatically with the right technologies – or that they are the ideal solution for all problems. Instead, the paper highlights the labour required for automation and demonstrates that, rather than achieving optimization and seamless alignment between users and systems, these cases reveal how technologies often interrupt and interfere, leading to underwhelming or even disastrous outcomes.

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11 JUNE 2025 14.30 - 16.30 SESSION 1

ID 577 - "Where Every Need Has Been Anticipated": An Antidichotomic Account of Digital Habits and Algorithmic Prediction

Simone Bernardi Della Rosa, Università del Molise

Keywords: Predictive algorithms, habit theory, semiotics, pragmatism, postphenomenology, digital subjectivity

The rise of predictive algorithms in digital platforms has intensified the entanglement between human habits and algorithmic personalization, shaping digital subjectivity and behavior in ways that remain undertheorized. This paper investigates the ontological, semiotic and phenomenological interplay between human and algorithmic habits, challenging the dichotomy existing in literature between human autonomy and algorithmic determinism (Chun 2016; Smith, 2020; Nowotny, 2021). While both human and machine habits operate through anticipation and prediction (Malabou 2004; Pedwell 2021; Esposito 2022), I argue that algorithmic habits are fundamentally more rigid, constrained by the phenomenological structure of the digital environment and the way algorithms process and utilize data. However, paradoxically, their influence stems precisely from their ability to exploit human habitual mechanisms—reinforcing, rather than overcoming, their own rigidity.

Algorithmic prediction differs from human habit in key ways: (1) it is historically bound, relying on past correlations rather than the context-dependent expectations of this "law of regularity" (Peirce, 1892); (2) it reduces complexity, simplifying behaviors into standardized patterns that exclude ambiguity; (3) it lacks a broader semiotic interpretative context, functioning purely through data extraction without engagement with the broader context meaning and values of our environment. However, despite these constraints, algorithms shape digital behaviors. This occurs through a 'grafting' effect, where algorithms share with habits some ontological and temporal structure (mediation, generality and anticipation) (Colapietro 2009; Määttänen, 2015) and latch onto pre-existing human routines. Through targeted notifications, personalized suggestions, and ecosystem design, algorithms foster a "digital comfort zone," shaping our daily experiences, narrowing and impoverishing the horizon of experience.

Drawing on pragmatist theories of habit (Peirce 1902; James 1892; Dewey 1922; Testa & Caruana 2020) and contemporary critiques of habit theory as predictive tool and algorithmic subjectivation (Manovich, 2013; Clough et al., 2015; Airoldi 2021; Johnson 2021; Esposito 2022; Romele 2023), this paper advances a model of co-constitution of digital experience, based on the idea of a "mediated" subject (Bernardi della Rosa, 2024). This perspective challenges the dichotomy between deterministic views of technological control over human behavior: "the becoming machine and data of humans" (Chun 2016; Koopman 2019) while also moving beyond purely humanist critiques that assume the algorithmic influence on behavior constitutes the betrayal of our true creative nature (Nowotny 2021; Smith 2022).

Ultimately, this analysis reveals this recursive entanglement where prediction seen as a propensity mechanism of behavioral reinforcement preempt behavior by structuring the field of possible actions in advance (Mackenzie 2018; Amoore 2020). The semiotic and phenomenological rigidity of digital environments ensures that algorithmic habits, while structurally similar to human habits, lack the plasticity and openness that characterize lived experience (Ihde 2009; Verbeek 2011). This asymmetry has profound implications: rather than merely reflecting user preferences, predictive systems actively participate in shaping the conditions of possibility for action, perception, and decision-making. By foregrounding habit as a site of co-constitution, this paper challenges both deterministic accounts of algorithmic domination and humanist pre-assumptions, arguing instead for a nuanced understanding of how digital infrastructures subtly condition the temporal, cognitive, and affective rhythms of contemporary subjectivity.

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ID 631 - Adding fuel to the fire: Feedback loops and platformized cultural production

Tuukka Lehtiniemi, Helsingin yliopisto
Laura Savolainen, Helsingin yliopisto
Hanna Reinikainen, Helsingin yliopisto
Jesse Haapoja, Aalto-yliopisto

Keywords: cultural production, emotions, platformized work, pleasing algorithms

We employ feedback loops to analyse the production side of platformized consumption, namely the human-AI interactions of cultural producers creating content on digital platforms. Our contribution is based on interviews with professional influencers and musicians, focusing on their beliefs, experiences and practices related to algorithmic visibility. We particularly sought to understand how they speak of and engage in practices of 'pleasing algorithms' (Haapoja et al., 2024) – an increasingly relevant vernacular in platformized cultural production discourse – and its outcomes for digital culture and platformized work.

In our analysis, we employ emotions connected with 'pleasing' in the context of platformized human-AI interactions as an analytical entry point for producing algorithmic knowledge (Ruckenstein, 2023). What emerges is a view on not just one but a plethora of feedback loops. Attempting to create virtuous cycles around their own content's visibility, cultural producers continuously incorporate feedback about datafied audiences, learning not only about their tastes and desires, but also about psychological vulnerabilities and weaknesses. Further, producers do not act in a vacuum, but observe how other content creators respond to algorithmic rules and patterns, and consult industry experts such as influencer agencies or record labels to hone strategies. The output of algorithmic governance – behavioral change – becomes instantly assimilated to further fine-tune competition.

As the above illustrates, feedback loops are not merely external: self-evolving patterns unfolding in and through data, and relating users, content, platforms and cultural industries in techno-social circuits. They are also internal, reaching their potential by working through and on subjectivities. Indeed, unless cultural producers were so creative in responding to and imitating observed patterns, platforms' notoriously 'addictive' algorithms would be much less efficient in hooking or engaging consumers. When producers learn to please algorithmic dynamics, they may feel a momentary sense of control, but they are simultaneously adding fuel to the fire.

A focus on subjective mediation allows tracing how our interlocutors attribute agency, blame, and responsibility, while locating sources of success, frustration, and stress in platformized cultural production. Attributions of agency do not follow simple distinctions between technology and humans, such as assigning powerful influence to algorithms, or autonomous agency to humans (Siles et al., 2024). Instead, agency and responsibility shift and intermingle ad infinitum: what at surface appears as a direct outcome of algorithmic optimization or platform policy, also hinges on how cultural producers both individually and collectively interpret and respond to algorithmic amplification of consumer behavior.

Our case then suggests that algorithmic feedback loops work on different scales, directions and across boundaries, tying together different actors, be they human, organizational, or technological. Emotional responses connected with pleasing the algorithm illustrate how feedback loops are also deeply problematic. Their seemingly self-perpetuating and dynamic character creates a movement towards a dystopian condition for both content producers and consumers – yet one that cannot be easily stopped or slowed down.

11 JUNE 2025 17.00 - 19.00 SESSION 2

ID 616 - Cultural filter bubbles? The effect of personalized recommendations on cultural diversity and inequalities on a music streaming platform

Samuel Coavoux, Institut Polytechnique de Paris

Keywords: digital platforms, recommendation, filter bubble, audience

Filter bubble theory states that the personalization of content on the internet, linked with the use of recommendation algorithms, traps users into narrow cognitive spaces. In these bubbles, users are only exposed to material they are familiar with, while challenging ideas and products are filtered out of their view. Streaming platforms are accused of producing such bubbles, but empirical research on cultural platforms is rare, and often at the aggregate level, e.g. country-level consumption. Moreover, diversity is a polysemic term. The main study on this topic considers aesthetic diversity, where aesthetic proximity is measured through how often two tracks are present on the same playlists.

In this paper, I measure the effect of the use of recommendation on a large panel of metrics of individual diversity of consumption. I use a longitudinal dataset, a digital log of the detailed music consumption of a random sample of 16,794 paying subscribers of music streaming platform Deezer, followed for eight years (2017-2024). The dataset comprises 509M unique events over 531k artists after cleaning. From this, I compute for every user and every week, the rate of use of recommendation, and various diversity metrics that account for variety (number of items consumed) and balance (proportion of consumption given to each item). I also rely on data from musicbrainz to measure artists' gender and country of origin. To analyze the data, I use two-way fixed effects models, regressing diversity on the use of recommendation, controlling for the log volume of play. The individual fixed effect removes time-invariant confounders, such as users' demographics or individual propensity towards diversity, and the time fixed effect removes the effect of fluctuating markets. All effects must thus be understood as follows: when a user increases their use of recommendation, compared to their own individuals average, diversity increases (positive effect) or decreases (negative effect) compared to own individual average.

I find that the use of recommendation have mostly positive effects on diversity. First, it has a very large, positive effect on artist diversity (number of artists one is exposed too and balance between artists). Second, it has a fairly large, positive effect on country and genre diversity: the artists added to one's portfolio are from different genres and different cultures than those from organic listening. Third, it has a small, positive effect on the share of time spent on longtail artists (defined as artists in the bottom 90% of popularity); however, it also tends to favor more popular artists on average. Fourth, it has a small negative effect on gender diversity: recommendations favor male artists. Finally, editorial recommendations are associated with more diversity than algorithmic recommendations, except for artist diversity.

Overall, this study finds evidence against a filter bubble hypothesis, but also some dimensions, gender and average popularity, where we might see bubbles emerge.

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ID 195 - Adapting the Futures Cone for platformized human-AI feedback loops found in FemTech apps

Jennifer Pybus, York University

Keywords: Menopause, health data, mobile infrastructures, AI profiling

This paper presents the novel participatory method, Futures Cone, to examine how user health data feeds human-AI feedback loops in FemTech – a portmanteau for 'female technology.' Over the past few years, FemTech has undergone rapid growth, catalysed by its promise to provide women with more agency over their health and to close the 'gender data gap', the gendered disparity in data collection and analysis which overlooks women's specific health needs. The rapid expansion of this marketplace raises regulatory

considerations and concerns about how women experience and perceive having their intimate data–highly sensitive information about women's bodies, health, sex, gender, sexual orientation, and close relationships (Citron 2022)–routinely extracted by a range of actors without explicit awareness or consent. Indeed, a recent ICO (2023) study highlights that data sharing from FemTech apps is likely a key factor behind why 17% of women received 'distressing' targeted advertisements linked to their in-app activities.

To address the production of intimate feedback loops, we have adapted the Futures Cone framework into an interactive board game that examines the impact of large technology platforms that provide embedded tracking infrastructures for most applications. The Futures Cone, developed by Voros (2003), is a framework that categorises potential futures, ranging from probable to possible. Typically, it is visualised as a cone expanding outward from the present. Probable futures occupy the narrowest inner section, and possible futures form the widest outer boundary, enabling stakeholders to explore a spectrum of future scenarios. In this study, we employ the Futures Cone approach to investigate scenarios about the impact of having user health data feed directly into human-AI feedback loops, making these dynamics more tangible and accessible to our participants.

The workshop builds participant understanding and confidence to engage with embedded data practices that connect FemTech applications with platform infrastructures. By employing the Futures Cone approach, the workshop fosters knowledge about how platforms mediate data flows, shape algorithmic decision-making, and reinforce power asymmetries in digital health ecosystems that relate to our participants' bodies. A key innovation of this methodological approach lies in its emphasis on scenario production as a means of foregrounding human agency in shaping preferred digital futures. By framing the future as a dynamic space of possibility rather than a predetermined trajectory, the workshop enables participants to move beyond passive acceptance of data extraction, towards the proactive development of novel policy solutions that challenge existing asymmetries in data governance. This participatory framework creates a discursive space in which AI-driven feedback loops—particularly those built on intimate health data—can be critically examined for more equitable digital futures.

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11 JUNE 2025 17.00 - 19.00 **SESSION 2**

ID 711 - Algorithmic Medias Res: A Longitudinal Study of Platformized Consumption on YouTube

Ilir Rama, Università degli Studi di Milano Statale

Andrea Russo, Università di Pavia

Keywords: AI, algorithms, YouTube, consumption, sociotechnical

Digital platforms have influenced and reshaped the consumption of culture, entertainment, news. This re-mediation by the hands of digital platforms is empowered by a variety of artificial intelligence and machine learning algorithms recommending, sorting, and overall regulating the flows of content within digital environments. The sociotechnical nature of algorithmic and AI systems has led to a variety of approaches to study the intersection of digital consumption and digital environments: some focused on the power that algorithmic systems have in guiding consumption, by emphasizing, for example, their ability to recommend targeted content to individuals, or by structuring environments aggregating similar points of view and social affinities; others on the agency that individuals have in resisting, manipulating, and repurposing

the algorithmic systems of platforms and social media. Less attention has been given to the iterative nature of sociotechnical and algorithmic systems, and their link with consumption, such as by focusing on the feedback loops structuring the interaction between humans and AI. Thus, it accounts for the algorithmic infrastructure of digital platforms, focusing on how the flow of content is partly based on pre-existing patterns of consumption, embedded within machine learning algorithms in the form of training data, and reinforced by in situ interaction between user and platform. However, empirically accounting for the human, social, and technical factors affecting consumption is complex, due to the difficulties to access both granular individual consumption patterns as well as comprehensive platform-level data.

In this article, we contribute to the debate on the tension between the social and technical factors affecting consumption by proposing a longitudinal analysis of YouTube. We do so based on data involving individual-level behaviour on the platform, collected through donations from a representative sample of 107 Italian respondents, comprising over three million data points over a decade. We analyse the evolution of consumption patterns across respondents, including data around content consumed and a variety of video-level metadata, as well as interactions with the platforms in the form of search queries and subsequent videos watched. More specifically, we trace how viewing patterns vary over time, considering changes in content categories, viewing frequency, users' search behaviour, and access to content. By triangulating users' searches and consumed content, we account for how individuals navigate and respond to algorithmic sorting and recommendations provided by the platform, for example by considering the proportion of content watched following a search or recommended by YouTube's algorithmic system. Additionally, we cross this data with platform-level changes, accounting for different versions of the algorithmic recommendation and sorting systems, the introduction of new affordances, and the changes in policies of the platform. This allows us to map the diachronic evolution of aggregated consumption patterns on YouTube, considering both social factors in themselves and their relationship to broader technical changes on the platform. By doing so, we offer insights into the mutual influences between social and technical factors, accounting for human-AI feedback loops and their effects on platformized consumption.

11 JUNE 2025 17.00 - 19.00 **SESSION 2**

ID 832 - Technoscience of cultural taste

Robert Bobnič, Univerza v Ljubljani

Keywords: taste, recommender systems, technoscience

According to Bourdieu, the sociological science of taste begins with a transgression: one must dissolve the boundary between the aesthetic sphere of high culture and popular culture in order to uncover the patterns of cultural consumption and their roles in social power dynamics. In the introduction to his landmark study of cultural taste in late-1960s-70s French society, he writes that the sociological "science of taste and cultural consumption begins with a transgression that is in no way aesthetic: it has to abolish the sacred frontier which makes legitimate culture as a separate universe, in order to discover intelligible relationships which unite apparently incommensurable 'choices,' such as preferences for music and food, painting and sports, literature and hairstyles" (Bourdieu 1984, pp. xxix).

In an era of pervasive recommender systems—where user preferences are continuously recalculated to generate personalized functionalities and curate selections on online media platforms—the science of taste involves a different kind of transgression: we must erase the divide between the human formation of cultural taste and its computational modeling.

While there has been extensive debate about the social implications of automating cultural consumption, including the ways such automation shapes cultural tastes, this presentation focuses on how these processes transform the science of taste. If we understand this science as the techno-scientific mathematization of taste via computational systems, then alongside the technological and platform affordances highlighted in contemporary sociologies of taste, the epistemology of coding taste into computer systems becomes crucial.

Drawing on a review of key works on the development of recommender systems—from early collaborative filtering algorithms in the 1990s to more recent implementations of artificial neural networks—I will explore how the science of taste has evolved at the data and technological levels over the past three decades. I will examine how cultural taste is abstracted in computer systems, the theoretical influences (computer science, cybernetics, behaviorism, statistics) that inform algorithmic design, and the conceptual assumptions and problems embedded in recommender systems, such as how they handle the diversity of choices.

In doing so, I will draw on Beniger's framework from The Control Revolution (Beniger 1986), which addresses how communication and information technologies have historically managed consumption, culminating in the advent of the computer. At the same time, Beniger underscores that the computation within these technologies represents an epistemological shift. While modeling consumption through datafication, measurement, and psychological studies is not new—given that analytics have powered cultural and media businesses throughout the twentieth century—recommender systems mark a distinct juncture by beginning with the computer-based recoding of human taste.