
Miscellaneous

Barbara Cyrek

<https://orcid.org/0000-0002-3270-6548>

barbara.cyrek@dsw.edu.pl

DSW University of Lower Silesia

Malwina Popiolek

<https://orcid.org/0000-0002-9566-2773>

m.popiolek@uj.edu.pl

Jagiellonian University

Submitted

October 9th, 2023

Approved

March 8th, 2024

© 2024

Communication & Society

ISSN 0214-0039

E ISSN 2386-7876

www.communication-society.com

2024 – Vol. 37(3)

pp. 73-89

How to cite this article:

Cyrek, B. & Popiolek, M. (2024). Audience Generated Content Management - Live Streamers' Strategies to Overcome Unwanted Donations, *Communication & Society*, 37(3), 73-89.

<https://doi.org/10.15581/003.37.3.73-89>

Audience Generated Content Management – Live Streamers' Strategies to Overcome Unwanted Donations

Abstract

While studies of live video streaming focus primarily on donations from an economic perspective and streamers' endorsement of donations, our study draws attention to the phenomenon of unwanted content, particularly in the context of donations. The paper examines the behavior of gaming live streamers on two leading streaming platforms: YouTube and Twitch. Our study covered hundreds of hours of public live streams conducted by streamers from four countries. Recognizing the unequal roles of streamers and their audiences, we introduce the term 'audience generated content' (AGC) as a subset of user generated content (UGC). In the article, we present features and conditions that may cause streamers to be reluctant about the donations they receive. We also provide typology and characteristics of strategies to overcome unwanted donations. Since aversion to certain donations is often related to their hateful nature, our article also highlights the major flaws in algorithmic monitoring.

Keywords

Gaming live streaming, audience generated content, donations, social media engagement, user generated content.

1. Introduction

The term 'user generated content' (UGC) has become widely embraced in academia and is utilized across various disciplines. Researchers trace the emergence of the first scientific studies introducing UGC back to 2001 (Santos, 2022).

From a humanities perspective, UGC stands in contrast to professional cultural production, encompassing all forms of amateur creations made accessible to a potentially vast audience. This concept is initially explored by Jenkins and his notion of the culture of participation (Jenkins, 2004), followed by reflections on the evolution of amateur creativity (Kim, 2012) and independent culture (Halbert, 2008).

In the realm of social communication, media, and journalism, UGC includes phenomena such as citizen journalism (Allan, 2006). It emphasizes that such media content is generated outside the institutional boundaries of media organizations, meaning it is not produced by employees, producers, or regular collaborators but by end-users (Wahl-Jørgensen *et al.*, 2016). In the context of journalism, there have been suggestions to define this type of content as

“participatory journalism” (Serrano Vázquez, 2015; Saridou *et al.*, 2018) or “audience content” (Williams *et al.*, 2011).

In the context of communication, the term UGC primarily refers to new ways of using interactive media. As Luca (2015, p. 566) notes,

UGC is material that a platform sources from its own end-users. Part of the crowdsourcing movement, UGC ranges from videos on YouTube to posts on Wikipedia to reviews on Yelp. All social media platforms contain UGC. However, not all UGC is contained on traditional social media platforms. Virtually all online platforms –ranging from online newspapers to online marketplaces– rely to some extent on UGC. UGC is dramatically transforming the media landscape.

In this sense, it is both a reference to the idea of cooperation and an extension of Rosen’s idea of transforming the audience into a user (Rosen, 2006).

An important reference point is the perspective of various business sciences regarding UGC, which is difficult to separate from communication in the broad sense (Stöckl *et al.*, 2008). Attention has been primarily given to the new nature of market relations (Benkler, 2006), as well as changes in the field of marketing (O’Hern & Kahle, 2013), consumer participation (Bruns & Bahnisch, 2009), and brand management (Arnhold, 2010). In this context, it is worth quoting the OECD definition, which focuses primarily on new business models and value creation. According to the OECD definition, the UGC: (1) is the content made publicly available on the Internet; (2) is the content that reflects some level of creative effort; and (3) is the content created outside professional routines and practices (Santos, 2022).

Livestreaming is a distinct example of UGC. In media studies, UGC denotes content published in interactive media by users typically logged into a specific service (Popek, 2010; Thornham & Popple, 2014). This term places all users of a given service on equal footing, indicating their potential opportunities. In theory, any user on platforms like YouTube or Twitch can become a star, yet in practice, only a small percentage of Internet users actively create content (Arthur, 2006). Moreover, only a fraction of YouTube users logs on to the platform at all (Lee, 2013), and relatively few of them become popular. Basically, new media or social media theory focuses most of its attention on user generated content but predominantly from the perspective of an active individual user who has the ability to produce and manage the content (produser). In this perspective, it is still an individual entity. We believe that this approach should be enriched by the perspective of the media audience, the collective entity that can operate independently of the central streamer but affects the transmission, sometimes unpredictably.

Both the streamer and the viewers possess the tools to create content, whether through broadcasting or chat posts. However, there is a notable disparity between the broadcasting side and the receiving side. In practice, streamers wield considerably more power to broadcast and control content. They have the ability to delegate various functions, such as appointing chat moderators, while also retaining the authority to revoke these privileges at any time. Additionally, not all platforms grant all users the ability to stream. Some platforms impose minimum requirements, such as a certain number of subscriptions. Hence, we find it reasonable to differentiate between streamers and their audiences despite both being users of the service.

In this context, content generated by the audience during a stream constitutes a distinct subset of UGC: audience generated content (AGC). The differentiation of AGC is vital in the study of streaming, as it lacks purpose without an audience. The potential of an active audience remains relatively unexplored (Carpentier 2011). Jas (2020) further categorizes the audience of streams into negative (critical) and positive (affirmative). AGC offers a means to analyze the distribution of these characteristics among the audience of a specific stream or streamer. The existence of a negative audience appears to be a controversial issue. This is because platform algorithms are indifferent to whether viewers join a stream for praise or

criticism: the more viewers a streamer attracts, the more potential viewers their stream will be suggested to.

During the stream, the audience can generate content through chat and donations. The first tool is relatively easy to control. Algorithms implemented by the platforms, which usually work by actively blocking words, help to remove posts that violate the platforms' rules. However, it should be noted that the creativity of users allows them to bypass this protection, for example, by substituting given letters with similar numbers. Chat moderators and streamers can also delete posts that breach community rules. Logged-in users have the option to report individual posts for deletion or moderation manually. On the other hand, controlling user donations is much more challenging, especially if they are processed through external services rather than the streaming platform itself. In recent years, the issue of holding individuals accountable for content published within donations has become one of the most prominent and widely discussed concerns for social networks (Lewis, 2018; Artwick, 2019). This paper focuses on presenting the strategies employed by gaming live streamers on YouTube and Twitch to address unwanted donations. Specifically, we explore the factors that render donations unwanted and how streamers deal with such donations. We selected YouTube and Twitch as our research subjects due to their dominance in gaming live streaming. Gaming and e-sports constitute over 50% of the live streaming market (Benítez, 2022), with Twitch ranking first in total hours watched and total hours streamed, followed closely by YouTube in both categories (Benítez, 2022). Both platforms combine entertainment and social networking by fostering and nurturing online communities (Cunningham & Craig, 2019; Cyrek, 2020).

We focus on each of the characteristics of online donations and consider how they may interfere with streamers. We then examine passive and active strategies streamers use to overcome unwanted donations. The features we pinpoint carry significant implications for both current and future streamers who (will) have to deal with unwanted content generated by their audiences. Since the aversion to some donations is related to their hateful nature, our article highlights the major deficiencies of current algorithmic monitoring.

2. Fan's Sponsorship on YouTube and Twitch – Audience Participation vs Audience Production

The evolution of streaming platforms reflects a trend towards increasing reliance on their fans to support streamers financially. Since the introduction of paid subscriptions in 2013, YouTube has progressively developed tools for what Lee *et al.* (2019) refer to as fan's instant sponsorship (FIS). In 2017, Super Chat was introduced (Palladino, 2017). Today, fans can also use Super Stickers and Super Thanks. These tools serve the economic interests of both YouTubers and YouTube itself. In addition to the FIS tools offered by the platform, YouTube streamers can also integrate external donation services into their broadcasts.

Audience participation during live streams has garnered significant research attention in recent years, particularly in the realm of gaming live streaming, where fan involvement holds paramount importance (Lessel & Altmeyer, 2019). This dynamic has posed new challenges in game design (Striner *et al.*, 2021; Glickman *et al.*, 2018). Various typologies of live-stream viewers have been developed based on their motivations (Schuck *et al.*, 2022), stream size, and audience participation styles (Flores-Savaglia *et al.*, 2019). Specific forms of participation, such as influencing the live stream, have also been subject to study (Lessel *et al.*, 2017; Lessel *et al.*, 2022). Recent studies have integrated several media theories into audience participation research, including the uses and gratification theory (Hsu & Lin, 2023; Hsu *et al.*, 2020), social presence theory (Chen & Liao, 2022; Ming *et al.*, 2021), and the theory of para-social relationships (Kowert & Daniel Jr., 2021; McLaughlin & Wohn, 2021). However, audience participation studies are not limited to audience generated content. Participation can manifest through various platform-provided means such as likes, subscriptions, emoticons, Super Stickers, and bits. This type of participation relies on content created and facilitated

by platforms, thereby circumventing the challenges associated with managing unwanted content (any content provided by the platform, e.g., Super Stickers, inherently complies with the platform’s policies). This article specifically focuses on a particular type of participation – content production.

3. Methodology

Our study, conducted between 2019 and 2022, is based on online ethnographic observation, which is appropriate for research conducted within online communities (Hine, 2000). Virtual ethnography requires co-presence in the same online space as the participants. It assumes text-based interactions with avatars whose offline identities are not critical to the study. The researcher’s access to the community is based on the regulations of the platform and becoming “native” is relatively easy (Przegalińska & Jemielniak, 2015). This “native” perspective turned out to be crucial for interpreting streamers’ behavior and the content of donations.

We observed streamers from Poland (6 streamers, 301 streams), Romania (1 streamer, 72 streams), the Netherlands (1 streamer, 34 streams), and the US (2 streamers, 27 streams) broadcasting in Polish and English. Streamers broadcasting in English received donations written mostly in English but also in their national languages (which the streamers then translated into English for the global audience). Sometimes, donations were written in other languages (presumably spoken by the donors), such as Esperanto.

Although YouTube and Twitch do not require users to use their real names, given the specificity of online donations (you can never be sure who the donor is), which makes it impossible to obtain consent to publish the donor’s nick, we decided not to publish the donor’s nicks in this article. The only exception is the nick of a publicly known deceased person.

At the same time, donors’ other personal information, such as age, gender, or national identity, remains unknown (usually even to the streamers). All information provided by the donors themselves cannot be verified, so our study omits such data.

Most importantly, from a research ethics perspective, our study only covers live streams that are publicly available without any access restrictions. For example, YouTube allows streamers to broadcast to a specific group of viewers –those who pay for a monthly subscription (YouTube Channel Membership). Because we consider such content to be “non-public” –provided for specific target audiences– we did not include such streams in our research.

4. What Makes Donations “Unwanted”?

The findings of our study show that the reasons that make donations undesired by their recipients can be divided into two groups: features and conditions. Features are related to donations, while conditions are related to circumstances, usually time. Consequently, sometimes the same donation can be welcomed or –under certain circumstances– unwanted. Hence, we address features and conditions separately in our description.

5. Features That Make Donations “Unwanted”

5.1. Amount

While donations may lack a message or even the donor’s name (the name/nick requirement can be bypassed by inserting spaces), they invariably include an amount –money is their basic purpose. Streamers’ reluctance to accept certain donations is rarely due to the amount being too low. When streamers use external services to transfer donations (not integrated into the platform), they set their own limits to ensure that the minimum donation cannot fall below the limit set by the streamer. What makes donations undesirable because of their amount are numeric hate symbols.

Numeric hate symbols are sets of numbers associated with acronyms, word counts, logos, phrases, etc., that are exploited for hateful purposes. For example, a donation of \$14.88 may represent the symbol 14/88. As explained by the Anti-Defamation League (n.d.):

1488 is a combination of two popular numeric symbols used by white supremacists. The first symbol is 14, which is shorthand for the ‘14 Words’ slogan: “We must secure the existence of our people and a future for white children”. The second is 88, which stands for “Heil Hitler” (H being the 8th letter of the alphabet). Together, the numbers form a general endorsement of white supremacy and its beliefs.

There are dozens of numeric hate symbols, and combinations of them increase the number of possible outcomes.

Some numbers can be both controversial and hateful. For example, in Poland, the number 2137 represents 9:37 p.m. (21:37), the time of death of Karol Wojtyła, who served as Pope John Paul II. This number can be used for various purposes, both for praise and ridicule.

The case of numerical symbols associated with online donations is extremely complicated. If the amount is the only thing that suggests hate, one cannot assume that the donor’s intentions are bad. Another case is knowledge –whether the streamer and the donor are aware of the meaning of such a symbol. Furthermore, meanings can vary from culture to culture. What may be considered hateful or disrespectful in one culture may not have the same meaning in another. Therefore, it is important to reiterate that the nationality of the donor is generally unknown.

Beyond issues of intent, awareness, and cultural differences, there are also technical considerations. Depending on the donation service and payment method chosen, the amount displayed may or may not include a margin. Why is the margin important? Because it creates a situation where the donor has no control over the amount displayed.

The cultural differences, the question of intent, and the technical issues make the appearance of numerical hate symbols in donation amounts a challenging puzzle to solve.

5.2. Donor’s nick

Both Twitch and YouTube enforce a policy of blocking account names that violate the respective platform’s rules. Using YouTube’s Super Chat or sending bits on Twitch is associated with the account name. These names are checked by the platforms’ algorithms but can also be manually reported by other users. However, matters become more intricate with external services.

External donation services are not linked to the user’s platform account. Donors are required to enter their nick each time they wish to donate. The nickname can contain vital information regarding the context of the donation text. For instance, in our study, we encountered donations regarding suicide that were signed with the nickname “Epstein,” radically altering the message’s interpretation. While the streamer may perceive the message as benign or humorous, the donor’s nick can significantly influence how the message is received. If the nick is not tied to the platform account, donors can post donations under any alias, ranging from gods, saints, and individuals in significant religious roles to other donors.

Donors’ submitted nicks may also include derogatory or hate speech. In our research, we encountered nicks with innocuous spellings, evading detection by spelling recognition algorithms. However, the pronunciation allowed for a different interpretation, such as using “sock” instead of “suck”. At times, when word limits prevent donors from conveying their message entirely within the donation, they utilize the nickname space to initiate their messages. In such instances, the focus is more on the nature of the content than on who is “supposed to say that.”

5.3. Sound

Streamers typically have the freedom to customize a set of sounds to play when a donation is published, serving as a “donation alert” (Recktenwald, 2016). Depending on the settings or features offered by external donation systems, a selection of sounds can be allocated to specific amount ranges. Consequently, if a donation of a notably large sum is received, the streamer can identify it by the sound alone without needing to check. Such a system benefits

game streamers who must balance gameplay with audience interaction. The sound signifies the donation amount range, providing reassurance to streamers that they will not overlook substantial donations and will not discourage generous donors.

How can the sound render the donation unwanted? Firstly, if the sound was unexpected, perhaps it is new to the pool or seldom chosen by donors. Secondly, if the sound doesn’t originate from the designated pool but was recorded by the donor. This latter scenario typically involves exceptionally large sums of money, and not all donation services permit it. Moreover, not all streamers opt for this feature, as it exposes their broadcast to the risk of being banned if the sound breaches the platform’s policy. Donor-recorded sounds may contain derogatory or hateful language, be excessively loud (e.g., screaming), or otherwise disrupt the streamer. Why some streamers choose to use this option requires further investigation.

5.4. Font and background effects

Some donation systems allow donors to customize their messages. Administrators of these systems encourage donors to customize their message to distinguish it from other donations. The “special effects” of fonts or backgrounds usually require extra payment. Our study revealed that some streamers discourage viewers from employing these effects. The rationale behind this is straightforward: certain effects render messages unreadable within the short timeframe they appear on screen.

Not all streamers use text-to-speech technology, which automatically reads the message. Such a solution is helpful because it frees streamers from having to take their eyes off the game. On the other hand, it can also be disruptive to the game, for example, by interfering with other players.

5.5. Content

Last but not least, content is another feature of donations that can cause streamers’ aversion. It should be noted from the outset that defining a universally unwelcome set of content for all streamers is challenging due to cultural disparities, varying levels of knowledge and awareness, and differences in the sense of humor. Donations that contravene the platform’s policies are invariably unwelcome, as they jeopardize the show or the entire channel’s standing, making it vulnerable to potential bans. Donors sometimes take advantage of the separability of algorithms that censor speech and writing.

For instance, in our study, we encountered the phrase “smelly_kneegrow.” This is likely an attempt to exploit the platform’s algorithms against the streamer, with the intent of exposing broadcasts or leading to the channel’s ban. The algorithm is oblivious to the streamer’s intentions and is unaware if the streamer has been deceived. In such instances, streamers may opt not to read such donations if they quickly discover the deception. When text-to-speech technology is used, the risk of the stream being banned is much higher.

Another type of donation often criticized by streamers is a message written in a language the streamer does not comprehend. In such scenarios, the streamer cannot engage with the content, respond to questions or requests, and, perhaps most crucially, identify and address any instances of hate speech or abusive language.

In terms of content, donations can disturb streamers in many different ways. The first and most obvious is derogatory and hate speech. However, identifying such instances may not always be straightforward. At times, recognizing such content necessitates the streamer’s knowledge and awareness. For example, the acronym “JD” may allude to “Jack Daniels” in English, whereas in the Polish internet subculture, it refers to “Jebać Disa” (translated as “Fuck Dis”), inciting hostility toward a Polish streamer named Dis.

Spam is also unlikely to be welcomed by streamers. Donations are sometimes used to send links or to advertise some products or services. Another type of spam donation is a “raid request.” These messages usually contain the name of another streamer’s channel and a

request to visit or subscribe to it. They may include additional information, such as that it is the streamer’s birthday and that such “a raid” would be a great birthday present. The truth of such information cannot be verified without checking out the advertised channel.

Another type of content that may be viewed unfavorably by streamers relates to social pathologies and socially undesirable behavior, such as violence, drinking, or drug use. During our research, we saw streamers sharing their stories about their addictions or traffic violations. Sometimes, it turns into a kind of “who did it worse” competition, and this type of discussion is usually not welcomed by streamers. Another example of such content is persuading the streamer to drink alcohol or engage in sexual behavior on the stream.

Sexual content may be unwelcome, especially if the stream is broadcast during daylight hours, which increases the likelihood of very young people in the audience. Tricking someone into saying or doing something on camera may also be unwelcome by streamers, who often emphasize that donations are voluntary and that it is unfair to expect anything in return.

Donations related to the streamers’ private life are also sometimes unwelcome. This applies to both comments and overly intimate questions. Streamers may not want their viewers to discuss certain topics. Our observations show that the most common sensitive topics are the streamer’s family life, sexual life, religion, political views, and the streamer’s opinion of other streamers.

Black humor is another type of content that may or may not cause the streamer’s disapproval. Streamers’ attitudes toward such content depend on their individual sense of humor. Sometimes, messages sent by donors verge on humor and abusive language.

6. Conditions That Make Donations “Unwanted”

6.1. Channel of transfer

The choice of donation transfer channel, or in simpler terms, the donation service, can provoke aversion among streamers. We observed this phenomenon, particularly among YouTubers who actively dissuade donors from using YouTube’s Super Chat.

For instance, the YouTube streamers we studied employed the following methods of discouragement:

- Excluding Super Chat users from the most generous donor rankings.
- Setting up a chatbot to regularly remind people that Super Chat is “unprofitable.”
- Verbally advising donors against using Super Chat when expressing gratitude for donations made through it.

The channel through which the donor opts to donate can critically impact the margin. Hence, streamers may sometimes prefer donations not to be sent through a specific channel, as they are aware of the portion of the donation money retained by the service administrator.

6.2. Recurrence

Sometimes, the streamer’s dislike of a particular donation is not due to the donation itself but to the recurrence of the same question or request.

This can happen in two ways: 1) many viewers ask or request the same thing; or 2) one person sends many donations under different names to create the impression that many people want something (the second case is only possible when using external donation services).

Group pressure is well-known in psychology as an effective tool of influence (Goldman *et al.*, 1965), and it can also occur in an online environment (Krassen & Aupers, 2022). Sometimes, when viewers want to influence streamers’ decisions, donations are used as a tool of persuasion. This could be the case for both the future of a given channel (i.e., future games to be played or cooperation with another streamer) and the current broadcast (i.e., decisions made in the game being played or the extension of the broadcast despite the announcement of its end). If streamers do not want to comply with the audience’s requests, the viewers are reminded that donations are voluntary. Sometimes, however, when streamers declare that

they will not comply with requests, and the requests continue to come in, streamers may become angry, tired, or upset.

In addition to requests, there are situations where many of the same or similar questions are asked of streamers in donations. The view queue can cause this: if many people want to ask the same thing at the same time (for example, if the streamer mentions something during the broadcast or shows something in the room or on the screen), their donations will be displayed one after the other.

The next possible reason is that the donor was absent while the streamer was answering the question. In such cases, the donor either does not know that the question has already been asked or did not hear the answer. So, the question is sent again.

The recurrence of questions can also lead to cooperation between fans. One of the streamers whose streams we watched was very angry when he got questions about the program he uses to organize the space on his computer’s desktop. The information about the program was in the description of each of his streams. The audience knew that, so whenever he showed his desktop, donations would come in with questions about the program. And he was not happy about it.

Sometimes, the recurrence is not caused by absence but by technical problems that can occur both on the streamer’s side and on the donor’s side.

6.3. Time

Time seems to be a crucial factor in whether a given donation pleases or annoys the streamer.

As a third condition that may cause the streamer to dislike a given donation, time is considered in three dimensions:

1. time in terms of the broadcast/game;
2. time in terms of the streamer’s personal life;
3. time in terms of the global situation and global events.

We will discuss these separately.

6.3.1. Time in the sense of the broadcast/game

In the context of a particular show or game, the timing of the donation may be one of the most important conditions for receiving a donation.

Streamers sometimes ask not to send donations for some time, for example, when they need to concentrate or want to announce something important. Such behavior is justified, given the characteristics of donations described above –donations disrupt the game and the discussion.

The amount of money donated may be related to the streamer’s results in the game. For example, if the streamer lost 5:14, donations of \$5.14 may occur. Money given to streamers may be a tool to make fun of them.

Our study showed that donations given at the time of a streamer’s failure in the game may be perceived as “pitying” –given as a consolation, especially if they are exceptionally generous. It may also be the condition that makes donations “unwanted” by the streamer. Considering the fact that the time between the donation being made and it being displayed on the screen may be extended due to the view queue or technical issues, it may be too hasty to recognize donations as “pitying” if no feature of the given donation indicates its consolation role.

6.3.2. Time in the sense of the streamer’s personal life

The same donation given at different times in a streamer’s personal life may be received differently. This rule can apply to any of the characteristics discussed earlier.

For example, the amount may be related to a date, such as a day the streamer failed an exam at university, or the day it turned out that the streamer would not be a member of the team they dreamed of joining.

The nick can also be used to make fun of the streamer, but it can also unintentionally upset the streamer. During our study, one of the streamers we followed broke up with his girlfriend. He announced this on the stream and explained that his ex-girlfriend's name would be actively blocked by the algorithm in the chat. When the donor signed the donation with that name, the streamer got upset. However, this could be the donor's real name.

The same example also shows how the reception of sounds can change due to the streamer's personal life events. Some "donation alerts" were sounds recorded by the ex-girlfriend. They did not cause the streamer's dislike before the breakup. After the breakup was announced, they were removed from the pool of possible sounds.

The same content of the donation can also be perceived differently by streamers, depending on changes in their personal lives. The content is not always directly related to the streamers' private lives, but it can be interpreted as such. Streamers' reactions to donations that relate to their personal experiences (or are interpreted as such) may vary. Many factors may influence such differences, but our study shows that recent disclosure of information about private experiences may be one of the most important. When it is publicly known that some topics have become controversial for the streamer, donations related to those topics are very poorly received. Sometimes, streamers get upset when they receive such donations shortly after announcing that they do not want to discuss a certain topic. However, it is important to remember that not every viewer watches the stream from the beginning, and joining at a random time may cause viewers to miss such an announcement.

6.3.3. Time in the sense of global situation and global events

Time can also influence reception in terms of the global situation and global events. Our study found that donors often communicate about what they are doing, such as where they are or what their plans are for a particular day. Sometimes, those plans were to go out and meet friends. However, there was an example of a streamer's reluctance towards such donations during the lockdown caused by the COVID-19 pandemic. The same goes for anecdotes and dark humor: jokes about car crashes will not make streamers laugh if there has been a recent fatal accident in the media; jokes about war seem inappropriate in times of the Russian invasion of Ukraine. The global situation may affect the streamers' reception of donations.

The discussed features and conditions may cause reluctance towards some audience generated content. Therefore, streamers have developed some strategies to overcome unwanted donations.

7. Passive Strategies to Overcome Unwanted Donations

The basis of passive ways to overcome unwanted AGC lies in the concept of the economy of attention. Attention is a limited resource and an irreplaceable good. It is associated with a high opportunity cost: devoting (part of) attention to medium A causes (limiting or) lack of this attention to medium B (Dobrołowicz, 2016). Thus, attention becomes part of the "media logic" (Altheide & Snow, 1992) and media economic mechanisms. It is particularly visible in digital media. As Halavais (2009) notes, "the web increases the amount of information available to a person, but it does not increase the capacity for consuming that information."

Summarizing the logic of the attention economy, Goldhaber (1997) concludes that "money flows to attention, and much less well does attention flow to money." Relating Goldhaber's theory to donations on Twitch, Recktenwald (2016, p. 144) states: "The streamer's attention is a scarce resource, while the attention given to them is abundant. [...] Attention did not develop into a currency, but it developed into a commodity with value." This statement can be successfully applied to streaming in general, not just to Twitch. Moreover, as Kreft (2009)

notes, according to these assumptions, attention can be bought. In short, a donation can be a form of “buying the streamer’s attention” –because attention is a rare and valuable resource.

Passive strategies against unwanted AGC are based on this very mechanism –the donor and their message are not rewarded with attention. When streamers choose to use passive strategies, they usually employ more than one of the strategies described below.

7.1. The message is not read aloud

As mentioned above, not every streamer uses text-to-speech technology. The strength of this technology in gaming live streaming is that it frees the streamers from having to take their eyes off the game. On the other hand, the biggest disadvantage is that donations are read automatically, regardless of their content. Since some donors take advantage of the separability of algorithms that censor speech and writing, text-to-speech can expose streamers to bans.

If this technology is not used, streamers usually read the donations aloud. The specificity of gaming live streaming justifies such a solution. Streamers have to strike a balance between commentary and discussion, between monologue and dialogue (Recktenwald, 2018). Reading out a message that is being replied to at the same time shows the audience to whom the streamer is currently talking. Sometimes, streamers immediately thank people for donations, even before they know their content. Not reading the donation aloud ends the interaction and results in the donor’s message not reaching people who are not currently looking at the streamer’s screen.

One of the streamers we observed sometimes used a method of responding to many donations at once. It was due to the intensity of the game being played. Donations were read and responded to in between, and unwanted ones were skipped.

7.2. The donor is not given any recognition

Streamers do not always acknowledge donations before reviewing their content. Not acknowledging the donor and not reading the donor’s name is called “spitting” on the donation.

Recognition is one of the most desirable rewards for donors, who are often motivated by prestige (Harbaugh 1998a, Harbaugh 1998b). Thus, reading the donor’s name is part of the netiquette of live video streaming. YouTube’s Product Manager for Super Chat and Super Stickers, Barbara Macdonald, openly advises YouTube streamers to “show your appreciation for Super Chatters through verbal call-outs. [...] There is nothing more engaging for a fan than hearing their own name called out by their favorite artist or creator” (YouTube Creators, 2020). Not rewarding donors by calling and thanking them by name may be a form of punishment for unwanted donations.

7.3. No response to the donation

Even after the streamer quickly thanked the donor and read the donation, not responding to the message was still an option. Recognizing the donor does not mean that the donor’s message will not be ignored. However, sometimes streamers do not respond to donation content due to technical issues, intense gameplay, or other distractions.

This strategy is especially effective for donations that contain questions, demands, or requests. In such cases, neither do streamers reward donors with comments or responses nor do they fulfill requests.

7.4. The donor is not included in the ranking

Omitting the donor’s name from the most generous donor rankings is another strategy to prevent unwanted donations. However, such a response is only possible if the ranking is generated manually, which is rare.

If the rankings are produced automatically by a system designed for this purpose, viewers can still see the names of those who have sent unwanted donations if the total amount

of money they have given allows each of them to be at the top. In such cases, streamers ignore the donor’s name when reading the rankings and thanking the donors.

This strategy is a form of donor cancellation. It shows any potential haters or creators of other inappropriate or currently unwanted content that their money is not more important than the rules the streamer has set.

7.5. *The donor is not included in other activities*

The last passive strategy we discovered in our study was used by only one streamer, so it must be noted that it is not very popular. The streamer ran giveaways during the streams. Giveaways consisted in drawing a winner from people who typed certain keywords into the chat. These keywords were chosen by the streamer and included the names or parts of the names of the highest-ranking donors. The streamer ignored the names of those who sent unwanted donations.

8. Tactics for Countering Streamers’ Passive Strategies

Sometimes, donations with similar or identical content are sent by individuals who use a different name each time. This can be assumed to be an attempt to deceive the streamer: the same person is using different nicks to draw the streamer’s attention to the same content. However, without knowing the donors’ IP addresses, it is impossible to be sure.

What we can be sure of, however, is another tactic for countering streamers’ passive strategies, which we have tentatively called the “turnaround” tactic. It involves starting the message with something neutral or flattering to the streamer, who, by the time the message is read (or heard via text-to-speech), may already be responding to the donor, for example, by thanking or praising them. Then, at the end of the message, there is unwelcome text, such as a reference to pedophilia.

9. Active Strategies to Overcome Unwanted Donations

Streamers also use active strategies to combat unwanted AGC. In contrast to ignoring, these consist of actively responding to unwanted donations. Sometimes, active strategies are used when passive strategies fail; other times, they are the streamers’ first choice. Thus, the choice of strategy can be determined by various factors. The motivation for this choice and streamers’ experiences with it is an interesting topic that deserves a separate study in the future. The strategies described below are not necessarily used separately.

9.1. *Verbal criticism*

The streamers’ verbal criticism may relate to the features of a particular donation, the conditions under which it was sent, or a combination of these. Sometimes, streamers will point out the feature that bothers them. Other times, they criticize the entire donation. The results of our research show that sometimes, the streamer’s criticism can be expressed in much harsher words than those used in the donation. Swear words in donations can lead to swear words in replies. However, sometimes, the most cruel or hateful donations are those that are very elegant or written with great creativity.

Streamers may also criticize the donor. The criticism can be direct or indirect. For example, in our study, we encountered a situation where many recurring donations were sent. Many people asked the streamer, “How is your day?” After receiving many similar messages, the streamer asked the audience if they didn’t have better ideas for the donation content. It was just a question, but it suggested that donors might not have anything clever to say in the donation message.

9.2. *A request or demand not to send messages of this nature*

Apart from outright criticism of the donation or its sender, streamers can ask viewers not to send such messages (or any messages for a certain time). Unlike criticism, such a reaction is

a clear statement that the streamers do not consent to such donations. Requests or demands such as these refer to the donor's respect for the streamer's will. Therefore, their effectiveness depends only on the donor's goodwill.

9.3. *Muting the donation*

Even if streamers use text-to-speech technology, unwanted donations do not have to be read. Streamers manage entire streams, not just video but audio as well. The streamers set the volume of the donations, and it can be adjusted during the stream. Such adjustments may include muting the donation. This strategy requires either a very quick response or a very long message. Setting a broadcast delay helps the streamer react in time.

9.4. *Removing the donation from the screen*

Another active strategy where a broadcast delay is helpful is to remove unwanted donations from the screen. This means that a donation can be made both inaudible and invisible if the streamer responds in time.

Managing the broadcast includes deciding which features to display, where on the screen to display them, and for how long. These settings can be changed during the stream. Sometimes, however, streamers do not employ screen management software and use less sophisticated methods. During our research, we saw a letter-colored background on the screen where donations were displayed to make them unreadable. For example, white letters are not visible on the background of an open Notepad or Word window.

9.5. *Setting the algorithmic censorship*

Streamers can choose to block selected words, which are then displayed as censored –letters are replaced with '*' characters. In our study, we encountered many censored donations. Sometimes, the text was impossible to decipher due to too many '*' characters. In other cases, it was possible to guess what words were blocked –swear words or the name of Pope John Paul II.

The main advantage of such a strategy is that it is assumed to be a one-time action that will continue until further notice. However, automated solutions can be easily bypassed by punctuating words with spaces or replacing selected letters with numbers or special characters.

10. Discussion

Both streamers and web users who watch them can create content during the broadcast. However, the possibility of creating and moderating content is not the same for everyone, so the typical division between broadcaster and audience is appropriate here. Therefore, we pointed out the need to define a specific subset within the already working concept of user generated content: audience generated content (AGC).

The AGC problem can also be considered from the perspective of social media engagement (SME). However, according to Trufino and Rossi (2021), there is still little agreement on a clear definition of what an SME actually is. From the social media theory point of view, it is described broadly and multi-dimensionally. In practice, it is mainly used for consumer research purposes, e.g. as a key indicator of engagement with marketing content. In this paper, the marketing dimension is not a reference point, so that the SME perspective can refer to the behavioral determinants of communication in social media. This is still an underdeveloped research perspective, as shown by Einsle, Escalera Izquierdo and García-Fernández (2023).

Dominant streaming platforms: YouTube and Twitch are developing more and more tools for fan's sponsorship. Some of these tools can also be used for content creation. Online donations combine sponsorship, messaging, and impact on the broadcast in terms of image and sound. In the article, we discussed features and conditions that can cause streamers' reluctance towards donations. The content of the message sent with the money is the most

obvious reason for streamers’ aversion, but not the only one. Sometimes, the message is considered nice or funny, but the donor’s nick changes the context and disturbs the streamer.

Even a very large amount of money given to streamers can cause their dislike if the donor uses numerical hate symbols. On the other hand, if the amount is the only feature that indicates hate, it is not necessarily due to the donor’s bad intentions. The numbers may be given unintentionally or may result from margin deductions.

Features that make donations “unwanted” can even be set by streamers, such as sound.

The same donation given under different circumstances may be unwelcome by the streamers. Since donations are the streamers’ source of income, the channel of money transfer is important for them. Large donations made through unprofitable channels may upset streamers instead of making them happy. Another condition that can make donations “unwanted” is recurrence. However, as we discussed in the article, it can also happen unintentionally, for example, due to the view queue. The most important condition seems to be time, which we discussed in three aspects: time in the broadcast, time in the streamers’ personal lives, or time in relation to the global situation.

Finally, we characterized the observed strategies to counteract unwanted donations, dividing them into passive and active ones. Passive ones use the logic of the attention economy –ignoring is the streamers’ primary tool. Active ones, on the other hand, rely on overt criticism and the use of censoring algorithms to avoid the selected words. At the same time, we have described the observed ways of cheating the algorithms applied by the viewers and even possible attempts to use the algorithms against the streamers.

Our study focuses on an unexplored phenomenon. However, we are aware that our research is not without limitations. Because we chose a qualitative method, the study was very time-consuming. Thus, we could only select a few streamers from a few countries. We chose only those streaming in English and Polish out of necessity. However, since a similar study cannot be performed in a quantitative and automated way, we believe that we are providing the best possible study.

The results of our research show two types of strategies used by streamers to deal with unwanted donations. The framework we provide can serve as a basis for future studies. Future research on this topic should include both streamers and their viewers. The question that arises after the study is: which strategies (passive or active) are perceived as more effective by streamers and stream viewers?

This study opens a discussion on the possibilities of audience generated content and its moderation. Recent research on the role of instant messaging in electoral political communication (Alonso-Muñoz *et al.*, 2022) shows the importance of new forms of communication in the political environment. Future research should pay attention to the use of AGC in political agitation, especially since it offers a relatively easy way to reach a large audience in real time. Moreover, studies have shown that active audiences use the latest social media technology to discuss elections and possible policy changes (Alonso-López *et al.*, 2023), as well as to disseminate scientific news (Maniou & Papa, 2023). This observable shift in the media ecosystem led public television to use online platforms (Eguzkitza-Mestraitua *et al.*, 2023). We predict an increase in the impact of audience generated content in news spread, as well as in the active public discussion of the political scene, both locally (streams in national languages) and globally (streams in English, reaching a global audience). Therefore, further studies on live-streamed AGC are recommended.

The authors report there are no competing interests to declare.

The publication was funded by the Future Democracy Lab, a flagship project of the POB Society of the Future, under the program “Excellence Initiative – Research University” at the Jagiellonian University in Krakow.

References

- Allan, S. (2006). *Online News: Journalism And The Internet*. Maidenhead: Open University Press.
- Alonso-López, N., Sidorenko-Bautista, P. & Apablaza-Campos, A. (2023). TikTok and active audiences in processes for political and structural change. An exploratory study based on the Scottish referendum. *Communication & Society*, 36(3), 87–101. <https://www.doi.org/10.15581/003.36.3.87-101>
- Alonso-Muñoz, L., Tirado-García, A. & Casero-Ripollés, A. (2022). Telegram in campaign: the use of mobile instant messaging services in electoral political communication. *Communication & Society*, 35(4), 71–88. <https://www.doi.org/10.15581/003.35.4.71-88>
- Altheide, D. L. & Snow, R. P. (1992). Media Logic and Culture: Reply to Oakes. *International Journal of Politics, Culture, and Society*, 5(3), 465–472. Retrieved from <https://www.jstor.org/stable/20007053>
- Anti-Defamation League. (n.d.) 14/88. Retrieved from <https://www.adl.org/resources/hate-symbol/1488>
- Arnhold, U. (2010). *User Generated branding: Integrating User Generated content into brand management*. Springer Science & Business Media. <https://www.doi.org/10.1007/978-3-8349-8857-7>
- Arthur, C. (2006). What is the 1% rule? *The Guardian*. Retrieved from <https://www.theguardian.com/technology/2006/jul/20/guardianweeklytechnologysection2>
- Artwick, C. S. (2019). *Social Media Livestreaming, Design for Disruption?* London/New York: Routledge.
- Benítez, C. (2022, September 6). *The Ultimate List of Live Streaming Statistics for 2022*. Retrieved from <https://findstack.com/live-streaming-statistics/>
- Bruns, A. & Bahnisch, M. (2009). *Social media: Tools for User Generated Content: Social drivers behind growing consumer participation in user-led content generation*, Volume 1–State of the art. <https://eprints.qut.edu.au/21206/>
- Carpentier, N. (2011). New configurations of the audience? The challenges of user-generated content for audience theory and media participation. In E. Nightingale (Ed.), *The handbook of media audiences* (pp. 190–212). Chichester: Wiley-Blackwell. <https://www.doi.org/10.1002/9781444340525>
- Chen, J. & Liao, J. (2022). Antecedents of Viewers' Live Streaming Watching: A Perspective of Social Presence Theory. *Frontiers in Psychology*, 13. <https://www.doi.org/10.3389/fpsyg.2022.839629>
- Cunningham, S. & Craig, D. (2019). *Social media entertainment: The new intersection of Hollywood and Silicon Valley*. New York: New York University Press.
- Cyrek, B. (2020). The social network(ing) YouTube –towards the classification of the site. *Media Management*, 8(2), 119–136. <https://www.doi.org/10.4467/23540214ZM.20.026.11805>
- Dobrowolowicz, M. (2016). Is Visibility a Guarantee of Success? The Effectiveness of Marketing in the Urban Space. *Culture and Society* (2), 109–122. <https://www.doi.org/10.35757/KiS.2016.60.2.7>
- Eguzkitza-Mestraitua, G., Casado-del-Río, M.-Á. & Guimerá-i-Orts, J.-À. (2023). RTVE's transmedia strategy aimed at young audiences: the case of Playz (2017–2020). *Communication & Society*, 36(3), 1–17. <https://www.doi.org/10.15581/003.36.3.1-17>
- Einsle, C. S., Escalera Izquierdo, G. & García-Fernández, J. (2023). Social media hook sports events: a systematic review of engagement, *Communication & Society*, 36 (3),133–151. <https://www.doi.org/10.15581/003.36.3.133-151>
- Flores-Savaglia, C., Hammer, J., Flores, J. P., Seering, J., Reeves, S. & Savage, S. (2019). Audience and Streamer Participation at Scale on Twitch. *HT '19: Proceedings of the 30th ACM*

- Conference on Hypertext and Social Media*, 277–278.
<https://www.doi.org/10.1145/3342220.3344926>
- Glickman, S., McKenzie N., Seering, J., Moeller, R. & Hammer, J. (2018). Design Challenges for Livestreamed Audience Participation Games. *CHI PLAY '18: Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play*, 187–199.
<https://www.doi.org/10.1145/3242671.3242708>
- Goldhaber, M. H. (1997, April 7). The Attention Economy and the Net. *First Monday*, 2(4).
<https://www.doi.org/10.5210/fm.v2i4.519>
- Goldman, M., Haberlein, B. J. & Feder G. J. (1965). Conformity and Resistance to Group Pressure. *Sociometry*, 28(2), 220–226. <https://www.doi.org/10.2307/2785652>
- Halavais, A. (2009). *Search Engine Society*. Cambridge: Polity.
- Halbert, D. (2008). Mass culture and the culture of the masses: A manifesto for User Generated rights. *Vanderbilt Journal of Entertainment & Technology Law*, 11, 921. Retrieved from <https://scholarship.law.vanderbilt.edu/jetlaw/vol11/iss4/7>
- Harbaugh, W. T. (1998a). The Prestige Motive for Making Charitable Transfers. *The American Economic Review*, 88(2), 277–282. Retrieved from <https://www.jstor.org/stable/116933>
- Harbaugh, W. T. (1998b). What do donations buy? A model of philanthropy based on prestige and warm glow. *Journal of Public Economics*, 98, 269–284.
[https://www.doi.org/10.1016/S0047-2727\(97\)00062-5](https://www.doi.org/10.1016/S0047-2727(97)00062-5)
- Hine, C. (2000). *Virtual Ethnography*. London/Thousand Oaks/New Delhi: SAGE.
- Hsu, C.-L., Lin, J. C.-C. (2023). The effects of gratifications, flow and satisfaction on the usage of livestreaming services. *Library Hi Tech*, 41(3), 729–748.
<https://www.doi.org/10.1108/LHT-02-2021-0069>
- Hsu, C.-L., Lin, J. C.-C. & Miao, Y.-F. (2020). Why Are People Loyal to Live Stream Channels? The Perspectives of Uses and Gratifications and Media Richness Theories. *Cyberpsychology, Behavior, and Social Networking*, 23(5), 351–356.
<http://doi.org/10.1089/cyber.2019.0547>
- Jas, M. (2020). Patostreaming –the dark side of the Internet. Analysis of the occurrence on selected examples. *Media Business Culture: Journalism and social communication*, 8(1), 169–180. <https://www.doi.org/10.4467/25442554.MBK.20.012.12422>
- Jenkins, H. (2004). The cultural logic of media convergence. *International Journal of Cultural Studies*, 7(1), 33–43. <https://www.doi.org/10.1177/1367877904040603>
- Kim, J. (2012). The Institutionalization of YouTube: From User Generated Content to Professionally Generated Content. *Media, Culture & Society*, 34(1), 53–67.
<https://www.doi.org/10.1177/016344371142719>
- Kowert, R. & Daniel Jr., E. (2021). The one-and-a-half sided para-social relationship: The curious case of live streaming. *Computers in Human Behavior Reports*, 4, 100150.
<https://www.doi.org/10.1016/j.chbr.2021.100150>
- Krassen, C. & Aupers, S. (2022). Pressure to play: Social pressure in online multiplayer games. *The Information Society*, 38, 13–24. <https://www.doi.org/10.1080/01972243.2021.1987364>
- Kreft, J. (2009). Media and the attention economy. *Media Studies*, 38(3), 142–152. Retrieved from <http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.ekon-element-000171432870>
- Lee, S.-E., Choi, M. & Kim, S. (2019). They pay for a reason! The determinants of fan's instant sponsorship for content creators. *Telematics and Informatics*, 45. Article no. 101286.
<https://www.doi.org/10.1016/j.tele.2019.101286>
- Lee, Y. (2013). *What percentage of people viewing YouTube videos on YouTube.com are logged into the service?* Retrieved from <https://www.quora.com/What-percentage-of-people-viewing-YouTube-videos-on-YouTube-com-are-logged-into-the-service/answer/Yee-Lee>
- Lessel, P. & Altmeyer, M. (2019). Understanding and empowering interactions between streamer and audience in game live streams. *Interactions*, 27(1), 40–45.
<https://www.doi.org/10.1145/3371299>

- Lessel, P., Altmeyer, M., Sahner, J. & Krüger, A. (2022). Streamer's Hell –Investigating Audience Influence in Live-Streams Beyond the Game. *Proceedings of the ACM on Human-Computer Interaction*, 252. <https://www.doi.org/10.1145/3549515>
- Lessel P., Mauderer, M., Wolff, C. & Krüger, A. (2017). Let's Play My Way: Investigating Audience Influence in User Generated Gaming Live-Streams. *TVX '17: Proceedings of the 2017 ACM International Conference on Interactive Experiences for TV and Online Video*, 51-63. <https://www.doi.org/10.1145/3077548.3077556>
- Lewis, R. (2018, 18 September). Alternative Influence: Broadcasting the Reactionary Right on YouTube. *Data & Society Research Institute*, Retrieved from <https://datasociety.net/library/alternative-influence/>
- Luca, M. (2015). User Generated Content and Social Media. *Handbook of Media Economics*, 1, 563-592. <https://www.doi.org/10.1016/B978-0-444-63685-0.00012-7>
- Maniou, T.-A. & Papa, V. (2023). The dissemination of science news in social media platforms during the COVID-19 crisis: Characteristics and selection criteria. *Communication & Society*, 36(1), 35-46. <https://www.doi.org/10.15581/003.36.1.35-46>
- McLaughlin, C. & Wohn, D. Y. (2021). Predictors of para-social interaction and relationships in live streaming. *Convergence: The International Journal of Research into New Media Technologies*, 27(6), 1714-1734. <https://www.doi.org/10.1177/13548565211027807>
- Ming, J., Jianqiu, Z., Bilal, M., Akram, U. & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of S-O-R theory. *International Journal of Web Information Systems*, 17(4), 300-320. <https://www.doi.org/10.1108/IJWIS-02-2021-0012>
- O'Hern, M. S. & Kahle, L. R. (2013). The empowered customer: User Generated Content and the Future of Marketing. *Global Economics and Management Review*, 18(1), 22-30. [https://www.doi.org/10.1016/S2340-1540\(13\)70004-5](https://www.doi.org/10.1016/S2340-1540(13)70004-5)
- Palladino, V. (2017, 8 February). *YouTube now lets creators with 10,000 subscribers live-stream video on mobile*. Retrieved from <https://arstechnica.com/information-technology/2017/02/youtube-now-lets-creators-with-10000-subscribers-live-stream-video-on-mobile/>
- Popek, E. (2010). *Understanding the World of User Generated Content*. New York, NY: Rosen Publishing Group.
- Przegalińska, A. & Jemielniak, D. (2015). Jakościowe metody badawcze interakcji wirtualnych. In M. Kostera (Ed.), *Metody badawcze w zarządzaniu humanistycznym*. (pp. 93-105) Warszawa: SEDNO.
- Recktenwald, D. (2016). 'Donation Alerts' on Twitch.TV: Commodification of Community and Attention. In *IMPEC 2016 Interactions Multimodales Par ÉCran* (pp. 143-144). Lyon: À l'Institut Français de l'Éducation (IFÉ) ENS de Lyon.
- Recktenwald, D. (2018). *The Discourse of Online Live Streaming on Twitch: Communication between Conversation and Commentary*. (Dissertation). Hong Kong: The Hong Kong Polytechnic University. Retrieved from <https://theses.lib.polyu.edu.hk/handle/200/9795>
- Rosen, J. (2006). *The People Formerly Known as the Audience*. Retrieved from http://archive.pressthink.org/2006/06/27/ppl_frmr.html
- Santos, M. L. B. dos. (2022). The 'so-called' UGC: an updated definition of User Generated content in the age of social media. *Online Information Review*, 46(1), 95-113. <https://www.doi.org/10.1108/OIR-06-2020-0258>
- Saridou, T., Panagiotidis, K., Tsiapas, N. & Veglis, A. (2018). Semantic tools for participatory journalism. *Journal of Media Critiques*, 4(14), 281-294. <https://www.doi.org/10.17349/jmc118221>
- Schuck, P., Altmeyer, M., Krüger, A. & Lessel, P. (2022). Viewer types in game live streams: questionnaire development and validation. *User Modeling and User-Adapted Interaction*, 32, 417-467. <https://www.doi.org/10.1007/s11257-022-09328-9>

- Serrano Vázquez, I. (2015). *Participatory Practices and Journalism: The Impact of User Generated Content in Making News*. Montreal: Concordia University.
- Stöckl, R., Rohrmeier, P. & Hess, T. (2008). Why Customers Produce User Generated Content. *Web 2.0: Neue Perspektiven Für Marketing Und Medien*, 271-287.
https://www.doi.org/10.1007/978-3-540-73701-8_16
- Striner, A., Webb, A. M., Hammer, J. & Cook, A. (2021). Mapping Design Spaces for Audience Participation in Game Live Streaming. *CHI '21: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 329. <https://www.doi.org/10.1145/3411764.3445511>
- Thornham, H. & Popple, S., (Eds.) 2014. *Content Cultures: Transformations of User Generated Content in Public Service Broadcasting*. London/New York: I. B. Tauris.
- Wahl-Jorgensen, K., Williams, A., Sambrook, R., Harris, J., García-Blanco, I., Dencik, L., Cushion, S., Carter, C. & Allan, S. (2016). The Future of Journalism. *Digital Journalism*, 4(7), 809-815. <https://www.doi.org/10.1080/21670811.2016.1199469>
- Williams, A., Wardle, C. & Wahl-Jorgensen, K. (2011). "Have they got news for us?" Audience revolution or business as usual at the BBC? *Journalism Practice*, 5(1), 85-99.
<https://www.doi.org/10.1080/17512781003670031>
- YouTube Creators (2020, 21 July). Super Chat & Super Stickers: Setup and Tips for Using Them. Retrieved from <https://www.youtube.com/watch?v=ZXwpWEbAmdo>