

The expression of boredom and unwanted loneliness on Twitch

La expresión del aburrimiento y la soledad no deseada en Twitch

A expressão de aborrecimento e solidão indesejada no Twitch

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Abstract

The consumption of streaming content on social networks has increased among young audiences, especially since the COVID-19 pandemic began, promoting the emergence of new parasocial relationships. The literature points to boredom and unwanted loneliness as the main drivers of this behavior. No study has investigated the expression of boredom and unwanted



loneliness on Twitch to determine if they encourage the consumption of streaming content. This study analyzes the expressions of boredom and unwanted loneliness of users consuming streaming content on Twitch to ascertain to which extent they are the main motivations depending on the context and conclude implications for practice. A mixed methodology was used, guided by virtual ethnography, to respond to the double qualitative-quantitative approach of the research. It has been applied to six communities of Spanish-speaking streamers on Twitch, with different audience levels, taking 3 streamings per streamer as case studies, broadcast from December 2021 to January 2022. The results were obtained using ethnographic observation and content analysis techniques. They suggest that boredom and unwanted loneliness are states that motivate the consumption of streaming content on Twitch. Their presence is more visible in small communities, and their nature differs depending on each community. Streamers should pay attention to their audience to relieve their boredom and unwanted loneliness, and to help detect possible maladaptive behaviors motivated by these states.

Keywords: Boredom; Loneliness; Twitch; Social media; Digital communication; Participatory culture

Resumen

El consumo de contenido en *streaming* en redes sociales ha aumentado entre el público joven, especialmente desde que comenzó la pandemia por COVID-19, facilitando la generación de nuevas relaciones parasociales. La literatura apunta al aburrimiento y a la soledad no deseada como los principales impulsores de este comportamiento. Ningún trabajo ha explorado aún la expresión de estos estados en la plataforma Twitch para determinar si incitan al consumo de contenido en *streaming*. Este estudio analiza las expresiones del aburrimiento y la soledad no deseada de los usuarios durante el consumo de contenido en *streaming* en Twitch para esclarecer si son las principales causas que lo motivan, comprender su naturaleza y establecer implicaciones prácticas. El método empleado es de tipo mixto, guiado por la etnografía virtual, para responder al doble enfoque cualitativo-cuantitativo de la investigación. Se ha aplicado sobre seis comunidades de *streamers* hispanohablantes en Twitch, con distintos niveles de audiencia, tomando como casos 3 *streamings* por *streamer*, emitidos de diciembre de 2021 a enero de 2022. Los resultados se han obtenido a partir de técnicas de observación etnográfica y análisis de contenido. Estos indican que el aburrimiento y la soledad no deseada son estados que motivan el consumo de contenido en *streaming* en Twitch. Su expresión es más visible en comunidades reducidas y es de distinta naturaleza en función de cada comunidad. Los *streamers* deben prestar atención a su audiencia para satisfacer sus necesidades de mitigación del aburrimiento y la soledad no deseada y para ayudar a detectar posibles conductas desadaptativas motivadas por estos estados.

Palabras clave: Aburrimiento; Soledad; Twitch; Redes sociales; Comunicación digital; Cultura participativa

Resumo

O consumo de conteúdos de *streaming* nas redes sociais aumentou entre o público jovem, especialmente desde o início da pandemia COVID-19, promovendo o surgimento de novas relações parassociais. A literatura aponta o aborrecimento e a solidão indesejada como os principais motores deste comportamento. Nenhum estudo investigou a expressão do aborrecimento e da solidão indesejada no Twitch para determinar se estes encorajam o consumo de conteúdos de *streaming*. Este estudo analisa as expressões de aborrecimento e de solidão indesejada dos

utilizadores que consomem conteúdos de *streaming* no Twitch para determinar até que ponto estas são as principais motivações, dependendo do contexto, e concluir quais são as implicações para a prática. Foi utilizada uma metodologia mista, orientada pela etnografia virtual, para responder à dupla abordagem qualitativa-quantitativa da investigação. Foi aplicada a seis comunidades de *streamers* de língua espanhola no Twitch, com diferentes níveis de audiência, tomando 3 *streamings* por *streamer* como estudos de caso, transmitidos de Dezembro de 2021 a Janeiro de 2022. Os resultados foram obtidos utilizando técnicas de observação etnográfica e de análise de conteúdos. Estes sugerem que o aborrecimento e a solidão indesejada são estados que motivam o consumo de conteúdos de *streaming* no Twitch. A sua presença é mais visível em pequenas comunidades, e a sua natureza difere dependendo de cada comunidade. Os *streamers* devem prestar atenção ao seu público para aliviar o seu aborrecimento e a sua solidão indesejada e para ajudar a detectar possíveis comportamentos mal-adaptados motivados por estes estados.

Palavras-chave: Aborrecimento; Solidão; Twitch; Meios de comunicação social; Comunicação digital; Cultura participativa

1. Introduction

Digital convergence has influenced consumers' habits when using the media to socialize and entertain, which has made it possible for new forms of consumption and parasocial interaction to emerge. This parasocial process, characterized by a confluence of mass media, audience relationships, and interactions towards content creators (Caro Castaño, 2015), has increased through the consolidation of the Internet and social networks as new forms of entertainment and interaction (Francisco Lens and Rodríguez Vázquez, 2020; Navarro Robles and Vázquez Barrio, 2020).

Studies so far have demonstrated that content consumption on the Internet and social networks is mainly motivated by leisure boredom (Akgül, 2016; Bai et al., 2021). The second cause is avoiding negative emotions such as anxiety or depression but, above all, unwanted loneliness (Panova and Lleras, 2016; Skues et al., 2016). People engage on the Internet and social networks looking for social contact and interaction to avoid unwanted loneliness and to pass the time and relieve boredom (Utami et al., 2021).

Boredom is a state that all living creatures with sufficient cognitive development experience more or less frequently, in all places and times, depending on both exogenous or environmental factors and endogenous or individual factors such as boredom proneness (Ros Velasco, 2022). In its most common meaning, boredom is the consequence of an imbalance between our need for arousal and how stimulating the environment seems to us (Csíkszentmihályi, 1998). This mismatch occurs both when the environment is perceived as not stimulating or too demanding (environmental condition); when it fails to capture our attention (attentional condition), and/or because of our perceived disparity in the cost-benefit ratio that implies our commitment to a situation or activity (functional

condition) (Westgate and Wilson, 2018). Boredom is so annoying that we feel forced to do anything to escape it (Ros Velasco, 2021a, 2022; Ros Velasco and Moya Arriagada, 2021).

Also, with dependence on endogenous and exogenous factors and their combination (Perlman and Peplau, 1982), unwanted loneliness appears when our relationships are insufficient in number and/or quality to meet our social needs. Weiss (1983) distinguished between social and emotional unwanted loneliness from interactionism. Emotional loneliness is caused by the absence of a close or intimate bond while social loneliness comes from the absence of significant and satisfactory friendships in quality and quantity, or the lack of a sense of community and belonging (Gierveld et al., 2016). Of course, both have to do with the environment but also with subjective perception, as underlined from cognitivism (Perlman and Peplau, 1982; Yanguas Lezaun et al., 2018), and with social isolation (lack of social contact or social network).

Between 2020 and 2021, there has been an increase in content consumption on the Internet and social networks (IAB Spain, 2021). This is due, in part, to the public health emergency caused by the COVID-19 pandemic that prompted governments to impose restrictions on mobility and social isolation, translated into a greater experience of boredom and unwanted loneliness (Utami et al., 2021). Many people around the world changed their ways of entertaining and establishing social relationships by adapting themselves to the opportunities of the digital environment, with the consequent increase in the consumption of social networks to relieve boredom and unwanted loneliness (Catedrilla et al., 2020; Ros Velasco, 2021b).

Focusing on social networks, they mark new consumption forms among young people (Akgül, 2016; Bai et al., 2021), especially to establish interpersonal relationships (Vizcaíno-Laorga et al., 2021) and avoid boredom. Social networks have promoted the culture of participation (Jenkins et al., 2015), in which the consumer is encouraged to collaborate in the creation of the virtual environment through their own contributions. This social participation enables, on the one hand, new communication channels that allow users to interact with each other (Masip et al., 2019), and, on the other hand, to influence the content (Rangel Pérez and Carretero Velasco, 2017) to make it more entertaining. In this culture, audiovisual consumption is usually complemented with resources from the Internet, in addition to interaction through chats and other social networks (Lacalle Zalduendo and Gómez Morales, 2017). In this sense, users, as prosumers, have found in social networks a space of horizontal communication to create and distribute their messages (Karbaum Padilla, 2018) and to pass the time.

This is so especially for social networks that offer streaming content (Gros et al., 2017; Zhiying, 2020). They are an essential part of people's daily dose of audiovisual consumption. Over the last few years, the popularity of live content broadcasting has grown exponentially, a type of Internet content in which an entertainment product is created through interaction with the public. A study conducted by Fietkiewicz and Scheibe (2017) stated that one of these platforms, called YouNow, was used by more than half of users (56.1%) just to escape

boredom. The other half (43.3%) did it to spend time with friends and avoid unwanted loneliness.

Among existing platforms, Twitch.tv stands out for millennials or Generation Z. On Twitch, cohabit the streamers or content creators who broadcast their content and the viewers or consumers who watch the live show and participate in it in different ways (Hamilton et al., 2014). Both parts interact through a chat, commenting on the actions carried out by the streamer, and establishing a horizontal communication channel in which not only the streamer can communicate, but also viewers interact with them and other users synchronously during the live broadcast.

Twitch is one of the social networks that grew the most in 2021, with an average daily consumption of 1 hour and 40 minutes. It is the preferred audiovisual platform among the population aged 16 to 24 (IAB Spain, 2021). In 2025, it is estimated that Twitch will reach an average audience of 800 million viewers worldwide (Godoy, 2021). The social network Twitch has established itself as the world benchmark (Gutiérrez Lozano and Cuartero, 2020).

Twitch is successful because it establishes communities within the audience from co-presence. Digital co-presence takes place when people are present in a space different from their physical location in which they can see other viewers who are in the same virtual space and socialize with each other (Diwanji et al., 2020). Twitch is different from other social networks or conventional media in which co-vision can occur, as more than one person consumes the same content despite not being in the same physical space, but no interaction among users is allowed (Pires de Sá, 2018). Therefore, what makes Twitch so special is that the platform allows co-presence and co-vision at once.

Twitch generates a feeling of belonging among those engaged in a certain community. Each of them has its own slang to communicate and as a means of differentiation from other communities. Besides, communication in this social network and its communities is characterized by the use of memes, colloquialisms, and fan jargon (Gutiérrez Manjón et al., 2022). Likewise, viewers often use short messages consisting of small icons called emotes, which provide new meanings to the communication and require, to understand them, prior knowledge of community culture (Barbieri et al., 2017). All this phenomenon also contributes to a better entertainment experience.

No study has investigated the expression of boredom and unwanted loneliness on Twitch to determine if both states encourage the consumption of streaming content on this platform. Nor has the nature of the expressions of boredom and unwanted loneliness been analyzed during the conversations on Twitch to know the causes that motivate users to express their experiences. Finally, no conclusions have been drawn about the practical implications of these expressions of boredom and unwanted loneliness for viewers and streamers.

In accordance with the above, the main goal of this study is to analyze the expressions of boredom and unwanted loneliness of users consuming streaming content on Twitch to determine to which extent they are the main motivations to engage in the platform, paying attention to the context in which these experiences are expressed, to conclude implications for practice for viewers and streamers. It also pursues the two following specific objectives: 1. to shed light on the expressive languages and codes that characterize specific Twitch communities from different Spanish-speaking countries, and 2. to define how parasocial relationships are established in the social network from horizontal communication.

2. Materials and Methods

The objectives of the study require the use of a mixed-type method. On the one hand, the nature of a phenomenon in development as Twitch, in which large social audiences are engaged, must be approached from an exploratory perspective to offer a general and approximate picture. On the other hand, the technical specifications and the communicative potential of Twitch suggest designing descriptive analytical tools to create a transferable model.

In this respect, the focus of the research is twofold. It is qualitative since it analyzes the nature of the conversation and social messages on the platform, but also quantitative to systematize and quantify the patterns of use and consumption of the social audience. Thus, virtual ethnography is the preferred method to design the research because it enables the analysis of the phenomena that take place within a social network on the Internet, such as the relationships established among users, the environment, and the context in the digital world (Hine, 2015).

A non-probabilistic based sampling was used following timeliness, sociocultural, and thematic criteria. That is to say, the case studies were selected among the most current broadcasts available over the course of the investigation, from Spanish-speaking content creators, the most demanded at present, both Spanish and Latin American, with a millennial and especially centennial audience, who broadcast live content about video games, the most consumed content on Twitch.

A selection of 6 different streamers was carried out, 3 from Spain and 3 from Latin America (Argentina, Mexico, and Colombia), considering different levels of viewers attraction power: less than 100 viewers, less than 3,000 viewers, and more than 5,000 viewers. In all cases, their audience comprises a population aged 16 to 30. The research material consisted of a selection of 3 streamings for each streamer, with an average duration of 3-4 hours per broadcast. All of them were broadcast from December 2021 to January 2022. Throughout the analysis process, the names of the streamers were anonymized to preserve their identity (S1, S2, S3, S4, S5, and S6).

Various software tools were used to analyze the content of the comments made in the streaming chats by the viewers. The chat messages were downloaded in JSON format using the Twitch Downloader application. The files were transformed into CSV with Python. The null values were cleaned, and the files homogenized. We achieved a compatible format with the data processing programs to work on variables eligible for objectification, quantification, and statistical systematization.

Once the methodological design was completed, the ethnographic observation and content analysis techniques by Gutiérrez Manjón et al. (2022) were used to explore the communicative phenomenon on Twitch and the expressions of boredom and unwanted loneliness among users (see Table 1).

Table 1. Methodological structure of the analyzed variables

TECHNIQUE	VARIABLES AND UNITS OF ANALYSIS	SAMPLE
Ethnographic observation	Chat activity rate	Live and deferred monitoring of broadcasts
	Interpellations to the streamer	
	Interpellations among viewers	
Content analysis	Use of emotes (own or outside Twitch) ^[1] .	Content of 126,459 comments (text and emotes) from 18 chats (3 per streamer out of a total of 6)
	Clout and expressive function of the emotes during the conversation	
	Total chat messages	
	Total chat messages related to boredom	
	Total chat messages related to unwanted loneliness	
	Twitch jargon chat messages	

Source: Prepared by the authors based on Gutiérrez Manjón et al. (2022)

3. Results

The analysis of the selected material allows us to meet our main objective, consisting of analyzing the expressions of boredom and unwanted loneliness of users consuming streaming content on Twitch, as well as the secondary goals of delving into the expressive languages and codes that characterize specific Twitch communities from different Spanish-speaking countries, and defining how parasocial relationships are established in the social network from horizontal communication.

Following Twitch Tracker, Twitch's audience statistic portal, 6 streamers were selected based on their geographical area and audience level. We chose Spanish-speaking streamers since the most active communities within the social network are Spanish-speaking communities, counting on several content creators in the top-10. Likewise, we selected profiles with different audiences in Spanish-speaking countries to analyze the nature of parasocial communication and expressions around boredom and unwanted loneliness in various contexts, paying attention to the volume of messages per minute and the number of members in each community. Finally, streamings were selected between December and January since they are the months of more activity on Twitch, according to Twitch Tracker, as more school-age users have free time to consume content on the platform.

Thus, tables 2, 3, and 4 have been designed based on their general data, their parasocial communication, and the analysis of the comments according to whether they expressed boredom or loneliness. Tables 2, 3, and 4 show the results of the analysis of parasocial communication and comments about boredom or loneliness based on the data obtained.

Table 2. Aggregated data from content analysis

	TOTAL	AVERAGE	%
GENERAL INFORMATION			
Viewers (average)	106,120	17,686	
Chat messages	126,459	21,076	
Activity rate (messages/viewer)	-	1.2	
PARASOCIAL COMMUNICATION			
Interpellations to the streamer	531	89	0.4
Interpellations among viewers	4,043	674	3.2
Use of emotes	93,358	15,559	73.8
Twitch own emotes	2,527	421	2
Twitch outside emotes	90,831	15,138	71.8
ANALYSIS OF COMMENTS			
Boredom	114	19	0.1
Unwanted loneliness	26	4	0.02

Source: Prepared by the authors

Table 3. Disaggregated data from Spanish streamers

	S1	%	S3	%	S5	%
GENERAL INFORMATION						
Viewers (average)	78,930		1,962		15	
Chat messages	49,975		10,471		561	
Activity rate (messages/viewer)	0.6		5.3		37.4	
PARASOCIAL COMMUNICATION						
Interpellations to the streamer	257	0.5	132	1.3	2	0.4
Interpellations among viewers	658	1.3	683	6.5	22	4
Use of emotes	76,137	152	782	7.5	57	10.1
Twitch own emotes	13,082	26	647	6.2	23	4.1
Twitch out emotes	63,056	126	135	1.3	33.7	6
ANALYSIS OF COMMENTS						
Boredom	79	0.2	8	0.1	3	0.5
Unwanted loneliness	6	0.01	3	0.02	1	0.2

Source: Prepared by the authors

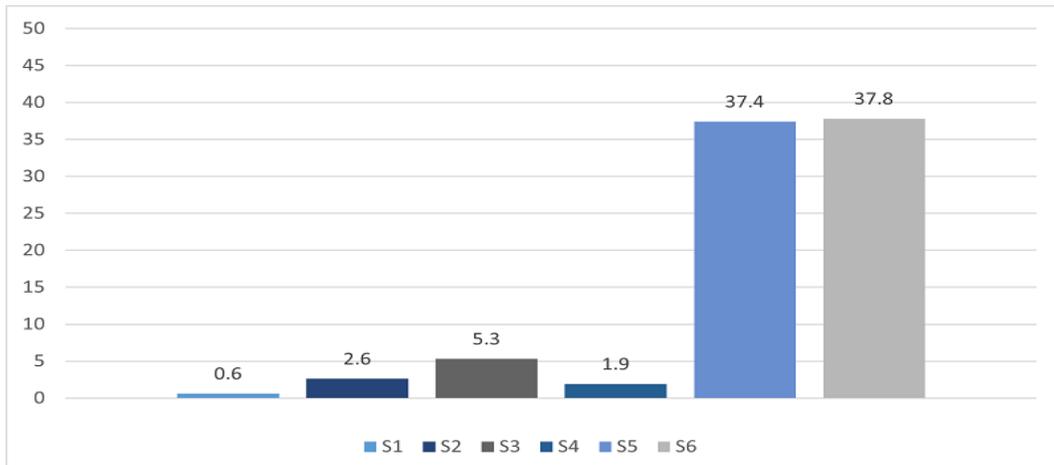
Table 4. Disaggregated data from Latin American streamers

	S2	%	S4	%	S6	%
GENERAL INFORMATION						
Viewers (average)	22,241		2,894		78	
Chat messages	56,900		5,610		2,942	
Activity rate (messages/viewer)	2.6		1.9		37.8	
PARASOCIAL COMMUNICATION						
Interpellations to the streamer	54	0.1	19	0.3	67	2.3
Interpellations among viewers	1818	3,2	540	9,6	322	10,9
Use of emotes	15,574	27.4	120	2.1	688	23.4
Twitch own emotes	1,243	2.2	47	0.8	123	4.2
Twitch out emotes	14,331	25.2	73	1.3	565	19.2
ANALYSIS OF COMMENTS						
Boredom	7	0.01	13	0.2	4	0.1
Unwanted loneliness	9	0.01	5	0.2	2	0.1

Source: Prepared by the authors

Figure 1 shows the activity rate, considering the total number of messages and the average number of viewers of the 3 broadcasts of each streamer. As a result, streamers with more viewers on average show lower activity rates than streamers with a smaller audience (less than 1,000 viewers per streaming). This suggests that users who participate in larger virtual communities interact less than those who belong to smaller communities (S5 and S6).

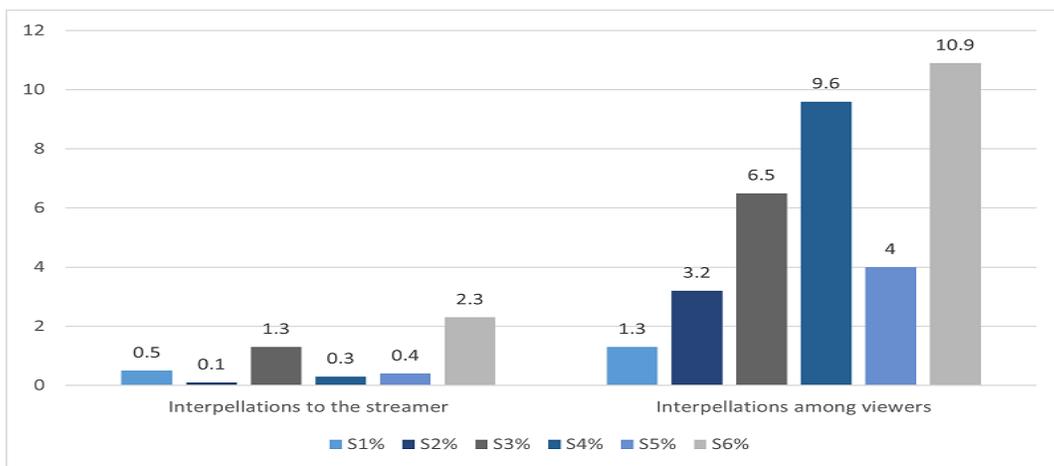
Figure 1. Activity rate



Source: Prepared by the authors

Figure 2 displays the number of interpellations by viewers to the streamer or among themselves. It shows that viewers opt for horizontal communication and prefer to dialogue with their peers than interact with the streamer. In addition, Latin American viewers generally seek more direct communication with other users than Spanish viewers in their respective communities (S2, S4, and S6, and S1, S3, and S5). This has to do with the fact that, in large communities, viewers do not expect to receive a response from the streamer to their interpellations. Similarly, the larger the community, the fewer interpellations of any kind are made by the audience.

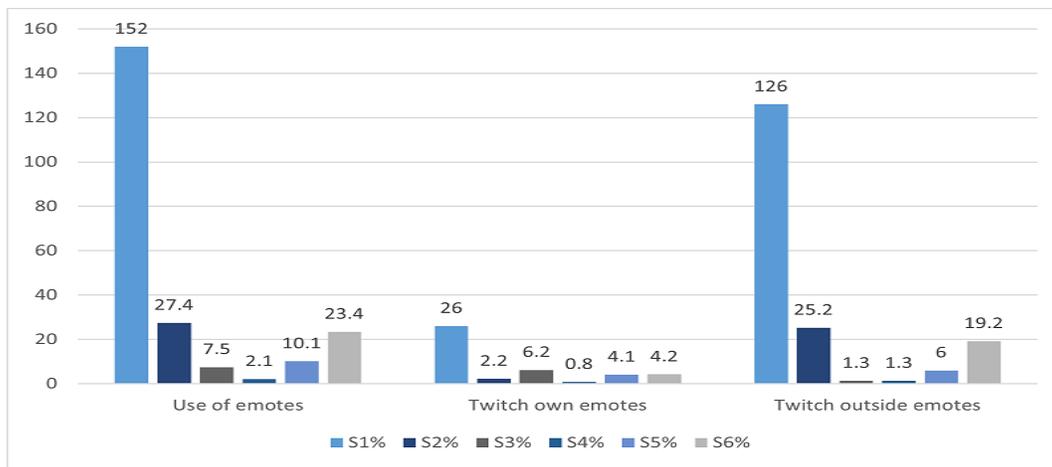
Figure 2. Percentage of interpellations



Source: Prepared by the authors

The number of emotes used depending on the community is revealing to understand parasocial communication. Figure 3 shows the total use of emotes and how viewers in larger communities of more than 10,000 users on average (e.g., S1 and S2) prefer emotes to text messages. This is due to the impossibility of maintaining a fluid dialogue in communities of more than 1,000 viewers, and for streamers to be able to interact with their communities. Alternatively, content creators switch to subscriber mode, in which only those who pay for a subscription can use the chat, or to emotes mode, in which users can only use emotes, to speed up the conversation. As a matter of fact, viewers generally use Twitch out emotes more than Twitch own emotes. Twitch out emotes include those created by the streamer and that only subscribers can use, while Twitch own emotes can be used by anyone watching the streaming.

Figure 3. Percentage of use of emotes

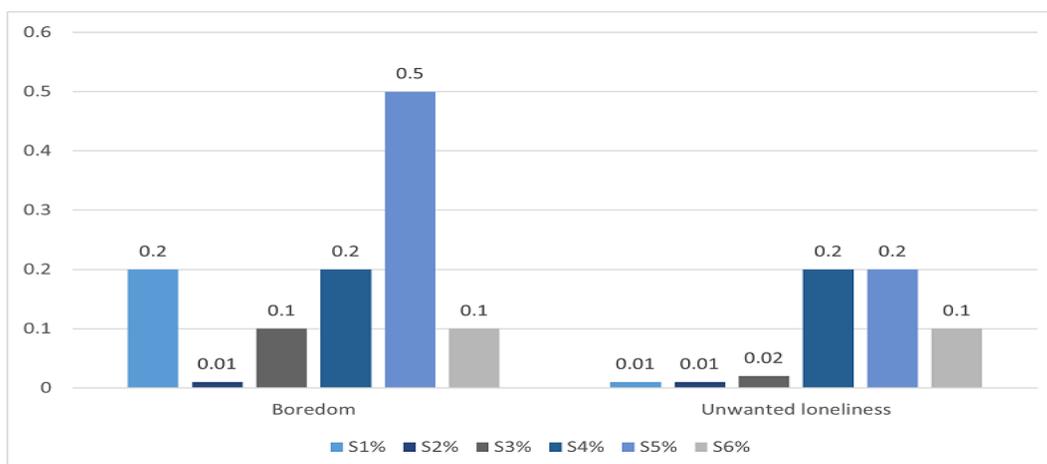


Source: Prepared by the authors

The most used emotes are those referring to happy feelings, such as “KEKW” or “LUL.” Those referring to sad feelings (e.g., “BibleThump” or “:(”) are less visible. The most popular are irony, sarcasm, and humor emotes such as “Kappa.” Twitch out emotes referring to these feelings are also prevalent². It is also common to see the emotes “Zzz” and “ResidentSleeper” in the chats to express boredom caused by the content itself. Communication through community jargon is also frequent (e.g., “F” in the chat, among S1’s viewers, to indicate someone’s failure or “Nashe,” in S4’s community, to highlight that something was epic and worth remembering).

Finally, Figure 4 indicates how many times boredom and unwanted loneliness have been referenced in the chats. It shows that less than 1% of the total messages of the 18 streamings refer to boredom and unwanted loneliness. This can be justified by the fact that, as pointed out by Gutiérrez Manjón et al. (2022), Twitch is a sharing space, but what is shared the most are positive feelings, while negative ones are not usually well received by the chat participants.

Figure 4. Percentage of references to boredom and unwanted loneliness

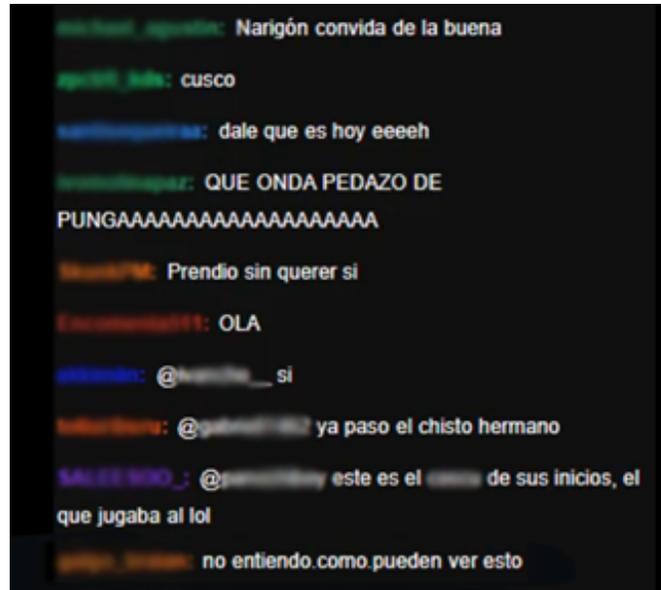


Source: Prepared by the authors

Streamings with more references to boredom and unwanted loneliness are S5 (0.5% and 0.1%) and S6 (0.2% and 0.1%), those with the lower average audience (less than 1,000 viewers). It shows that the smaller the community, the more comfortable users feel to express states of boredom or unwanted loneliness while in larger communities (S1 and S2) with an average audience of more than 10,000 viewers, references to these states represent less than 0.1%. Differences regarding the expression of boredom and unwanted loneliness by geographic area were not significant in this study.

Comments expressing boredom are of various types. First, some viewers express gratitude to the streamer for relieving boredom with their content (e.g., “Thanks for entertaining me in the afternoons after college” [S3] or “Congrats for everything you achieved so far, and thanks for always entertaining me” [S2]), especially during the pandemic (e.g., “I’m confined because of COVID-19, and I’m very bored. Please, send me a greeting” [S1]). Others, however, are to point out that the product offered, or the intern dynamics of the streaming are boring (e.g., “These streams are quite boring :/” [S4], “Better say you don’t feel like playing and play alone” [S6], or “C’mon, you are boring me” [S1]). This second type of comment is usually followed by a violent reaction from the viewers that translates into insults or calls for attention so that the streamer adapts to their demands (see Figure 5).

Figure 5. Aggressive comments caused by boredom



Source: S4 chat screenshot³

This type of reaction tends to draw disapproval from other viewers: “People are in a very bad mood. They have too much free time and get bored and write nonsense” [S3].

As for the comments about unwanted loneliness, there are those to express gratitude to the streamer for the company offered (e.g., “Teleworking, with you by my side <3” [S3], “You make my working mornings with your streamings” [S3] or “You are the best companionship ever <3” [S1]), also especially regarding the pandemic (e.g., “Thanks for saving me! I’m confined” [S3] or “Thank you for accompanying my afternoons and brightening them up in times of pandemic” [S1]). What stands out is the expression of gratitude for the relief of emotional loneliness, with the user stating how the streamer fills the gap of that important person we need as a fundamental piece of support in life, usually represented by a family member, a partner, or a best friend (e.g., “Your laugh gives me life” [S3], “Thank you for being part of my life” [S3], or “You are the best thing that’s happened to me, better than my own parents” [S1]). There are also isolated cases in which the viewer mentions loneliness to call attention to their current state (e.g., “I’m sad and lonely in this terrible world” [S3]).

4. Discussion

The consumption of content on the Internet and social networks has increased in recent years, even more so since the COVID-19 pandemic began, and especially regarding streaming content related to video games. One of the main reasons for users to consume this kind of content is boredom; the other major reason is unwanted loneliness. Both the need for entertainment and companionship are satisfied by consuming content in streaming in virtual communities such as those that populate the platform Twitch.

The main goal of this study was to analyze the expressions of boredom and unwanted loneliness of users consuming streaming content on Twitch to determine to which extent they were driving forces to engage in the platform, paying attention to the context in which these experiences were expressed. We also aspired to shed light on the expressive languages and codes that characterize specific Twitch communities from different Spanish-speaking countries, and to define how parasocial relationships were established in the social network from horizontal communication.

A mixed methodology was used, guided by virtual ethnography, to respond to the double qualitative-quantitative approach of the research. It was applied to six communities of Spanish-speaking streamers on Twitch, with different audience levels, taking 3 streaming per streamer as case studies, broadcast from December 2021 to January 2022.

The results indicate that more parasocial relationships were established in communities with smaller audiences (below 1,000 viewers on average). These communities show higher activity rates than those over 1,000 viewers and have a greater number of interpellations among users (horizontal communication) and from the users towards the streamer (vertical communication). Small communities foster a climate of confidence and trust in which users see others as friends and express how they feel concerning boredom and unwanted loneliness.

On the contrary, in larger communities with more than 1,000 viewers, the emotes are preferred to express emotions and facilitate a dialogue with massive interactions. In smaller communities, the total number of messages is 3,000 on average, while in larger ones the interactions are around 50,000 messages. This makes it difficult for long-lasting parasocial relationships to be established and for users to feel comfortable sharing more intimate states of mind such as boredom or unwanted loneliness.

This study has demonstrated, in accordance with existing literature, that boredom and unwanted loneliness are the main causes for viewers to consume content in streaming. As the previous literature has shown, unwanted loneliness is less represented in communications than boredom, which is in line with the fact that boredom is a stronger reason when it comes to engaging in a virtual community.

Mentions to boredom are to express the viewers' gratitude to the streamer who alleviates their negative state and to show that the streaming is boring them. In the latter case, these manifestations are accompanied by violent and aggressive reactions. Concerning unwanted loneliness, consumers show gratification to the streamers for the companionship they provide, especially in pandemic times. Interestingly, it could be thought that users consume this type of product to alleviate social loneliness by increasing their sense of belonging to a community. However, most expressions about unwanted loneliness are aimed at recognizing the role of the streamer in avoiding emotional loneliness as becoming a fundamental support pillar in the lives of users.

Previous literature has shown that boredom and unwanted loneliness are also the main reasons for streamers to create and share content on platforms like Twitch (Chen and Chang, 2019; Friedlander, 2017; Li and Guo, 2021; Scheibe et al., 2016; Zimmer and Scheibe, 2019). However, we were unable to find out if they are also the main causes that motivate streamers to create content. Boredom is the main reason for stopping to share and consume content as well (Fietkiewicz and Scheibe, 2017). In this case, we were able to verify that when expressions of boredom caused by the content or the dynamics of the game increased in the chat, the average number of viewers decreased. This is contrary to Zhiying's (2020) conclusion that many users turn to stream platforms precisely to enjoy boring content through which they escape the fatigue of daily life.

This research also intended to shed light on the implications for practice not only for viewers and content creators themselves but for all those who investigate behavior and emotions in the new spaces of communication and entertainment that are emerging in the digital age.

On the one hand, streamers can benefit from knowing the motivations that lead their audience to engage with their content and the reasons why they tend to abandon their consumption. The content creators can draw conclusions to avoid certain dynamics that are usually boring or try to interact more with the audience that values their company so much based on the messages they receive. These small gestures can lead to greater consumers' adherence to a product capable of entertaining and accompanying.

On the other hand, the study has practical implications for the detection and prevention of maladaptive behaviors manifested in the use of the Internet and social networks because of boredom and unwanted loneliness. Boredom has been associated with problematic use of the Internet and social networks in specialized literature (Skues et al., 2016; Utami et al., 2021). The more prone the subject is to boredom, the more likely they are to misuse the Internet and social networks and to develop an addiction (Catedrilla et al., 2020; Chou et al., 2018; Guner, 2021; Skues et al., 2016), especially to online video games (Chou et al., 2018; Guner, 2021; Utami et al., 2021; Wegmann et al., 2018). Apart from this, sustained boredom, which becomes chronic overtime when the circumstance does not allow putting into practice escape strategies (Ros Velasco, 2022), urges individuals to look for external stimulation in extreme ways (Ros Velasco and Moya Arriagada, 2021; Sommer et al., 2021). In this sense, studies such as the present one can help detect possible addictive or maladaptive patterns caused by boredom in certain individuals who may be at risk of suffering from chronic boredom by paying attention to the communication on Twitch.

In this investigation, we did not find any striking cases of boredom beyond those that resulted in a momentary increase in aggressiveness. However, a possible extreme case of unwanted loneliness stood out during the observation when a viewer repeatedly said: "I'm sad and lonely in this terrible world" [S3]. As with boredom, those who feel loneliest spend more time on the Internet and social networks and tend to misuse them due to a lack of self-control (Catedrilla et al., 2020; Skues et al., 2016). According to Panova and

Lleras (2016), an individual is more likely to develop an addiction or other problem related to social media use when consuming its content to relieve unwanted loneliness than when they do it to escape boredom.

A constant or conspicuous manifestation of the experience of boredom, or violent reactions to boredom, and unwanted loneliness in communication during broadcasts can be a signal of Internet addiction or other kinds of concerns such as chronic boredom or extreme loneliness. Learning to recognize risk situations through the analysis of the chats on platforms like Twitch, especially among small communities in which users feel comfortable enough to share their feelings, can facilitate intervention. These social networks may count on professionals, just as they have moderators, who go over the chats to detect risky patterns, but also the streamers and other members in the community can notice these cases and offer help they themselves or transfer the case to other instances. To this end, it would be interesting to have access to variables such as gender or age, which are currently not accessible through Twitch Tracker.

In conclusion, this study has shown that boredom and unwanted loneliness are the causes that move Twitch users to engage with the streaming content, and that the analysis of the nature of their expressions in their context, which depend on factors such as the community size and the number of interactions, can be useful to detect and intervene in possible cases of social networks misuse. In the future, the methodology proposed to carry out this investigation could be applied to research on the expressions of other recurrent states whose manifestation has been observed (e.g., anxiety, depression, or stress), as well as to other social phenomena that were discovered in the analyzed communications such as drug use, sexist attitudes, or the ageism directed toward older adults.

Data availability

The data set is not publicly available because it contains information that compromises the privacy of research participants.

Authors' contribution

Josefa Ros Velasco: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original draft and Writing – review & editing. **Sergio Gutiérrez Manjón:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Validation, Visualization and Writing – original draft. All authors have read and agreed to the published version of the manuscript.

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Notes

- 1 Twitch own emotes were determined following the lists hosted on specialized websites: <https://knowyourmeme.com/memes/twitch-emotes>, <https://www.twitch.tv/creatorcamp/es-es/learn-the-basics/emotes/>, and <https://twitchemotes.com/>.
- 2 Examples not displayed to preserve the streamers' anonymity.
- 3 Conk with good life / Rename the streamer with a play on words / C'mon. This is for today, um / WHAT HAPPENS, CROOK!? / He turned it on accidentally / HELLO / Yes / It's not fanny at all, bro / This is the streamer from the early days, the one who played League of Legends / I don't understand how you can watch this.