Content structure is king: An empirical study on gratifications, game genres and content type on Twitch

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Abstract: While video games have been widely investigated from the perspective of play, an emerging online media phenomenon is the spectating of video game play, captivating millions of users daily. This study investigates the relationship of video game genres, content type and viewer gratification in the context of live gaming. To study this phenomenon, we employ an online questionnaire study (N=1097) to investigate six categories of gratifications: affective, information seeking, learning to play, personal integrative, social integrative & tension release motivations and their relationship with game genres and stream types. The results of this study demonstrate that "the medium is the message", highlight the importance of archetypal structure (i.e. the type of streamed content) over content topic (i.e. the genre of games being streamed), and help to build a better understanding of user generated content and the democratization of media.

Keywords: Streaming, new media, genres, uses and gratifications, video games, social media, user-generated content

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The effects and gratifications from playing video games have been a widely investigated and debated topic within the last decade both in academic literature, e.g. in media psychology, game research and communication studies (Elson & Ferguson, 2014; Hamari & Keronen, 2017; Mäyrä et al., 2016; Quandt et al., 2015), and in popular discourse. While this debate is still ongoing, a new yet uninvestigated form of game consumption has emerged: watching others play games via YouTube and live broadcasts on services such as Twitch. Today, millions of people watch others play games on the internet (Needleman, 2015; Twitch, 2016).

Services such as YouTube have spearheaded a major shift in the media landscape, moving production of audiovisual media from large corporations and organizations towards smaller entities and individuals (Cha, Kwak, Rodriguez, Ahn, & Moon, 2007; Sjöblom & Hamari, 2017). The democratized process of content creation on video game streaming platforms such as Twitch allows for the existence of many types of content. In this context video game –related video content such as "Let's plays" and eSports (Hamari & Sjöblom, 2017; Newzoo, 2016; Taylor, 2012; Twitch, 2016), have become especially popular. The participatory and interactive nature of this emerging form of media serves to bridge the divide between games and traditional media, such as television, via the convergence of interactive, communal and passive forms of media. This evolution of the media landscape towards user-generated content also brings into question the legitimacy of genre as the primary means of classifying media content. In the realm of video game streaming particularly, it becomes apparent that genre might not constitute the defining means of classification.

As little is known about the gratifications obtained by watching these online video streams, this study aims not only to investigate the general gratifications that people derive from watching online streaming content, but also the differences in various streaming content. Not all game streaming content is similar; instead it is highly varied, ranging from very competitive endeavors to

highly casual ones. This variation in content type affords an interesting angle of research, and can be compared to various types of programming produced for other broadcast media such as television. Few studies have yet aimed to approach this topic quantifiably, thus far the literature on video game streaming has focused mainly on communities (Hamilton, Garretson, & Kerne, 2014), technical aspects (Kaytoue, Silva, Cerf, Meira, & Raïssi, 2012) and competitive eSports (Hamari & Sjöblom, 2017; Weiss & Schiele, 2013). Thus, the primary research question of this study is:

RQ: *How are gratifications from viewing (as operationalized by affective, information seeking, learning to play, personal integrative, social integrative & tension release motivations) online game streams associated with game genres of streamed games and types of game streams?*

Background

Video game streams organize and present their varied content through the use of genre labels, much like any other media (Chandler, 1997). The use of genre as a means of categorising video games is more than simply common practice, it is almost unavoidable no matter if the discussion be academic, commercial or popular (Arsenault, 2009). This situation is not simply unique to video games and to the practice of Games Studies, as any object-bound discipline must pay close attention to the tools that it employs to describe the particular focus of study. As such, while the notion of genre as a tool to aid categorisation is rarely questioned, the particular genre labels that have been employed have been subject to prolonged scrutiny. This also applies to the fields of literature (Frye, 1957; Williams, 2006) and film (Altman, 1984; Stam & Miller, 1999) as it does for video games (Clearwater, 2011; Wolf, 2001).

Differing taxonomies have been created which include a range of factors as points of reference and can include: period, country of origin, franchise, distribution channel/platform, target audience, or content (Chandler, 1997). Added to this are the technological and interactive possibilities of video games, or as Aarseth phrases it, the fact that video games are essentially

simulations in which players create experience through their individual actions (Aarseth, 2004). For some, therefore, it is the nature of a player's interaction with the game that is the primary characteristic of interest (such as First-Person Shooter), for others it may be the content (Puzzle), or even the business model (Free-to-Play) of the game.

The academic quest for a definitive means of classifying video games, is at odds with the way in which genre is both conceived and used in wider society as well as with a more nuanced investigation of cultural artefacts. Whilst there is a constant evolution of what is commonly understood to constitute any particular genre (Arsenault, 2009; Dor, 2014), the labels and terms themselves seem to be relatively constant and durable (Faisal & Peltoniemi, 2015). The perspective offered by "social linguistics" (Gee, 2015) is, therefore, valuable in understanding genre labels as context-specific discourses that are driven by distinct communities.

These labels are used to convey messages about the content or style of media products, as such they can be presumed to have a significant impact on the expectations of the consumers and, therefore, on the gratifications users derive from watching streams. The contemporary proliferation of media formats such as video streaming and on-demand television suggest that the individual needs and preferences of users are becoming more important when selecting media content. This is in contrast to the structural characteristics of traditional media that have previously shaped consumption habits (Giddens, 1984).

When considering the increased choice available to media consumers, user "repertoires" have been found to be a reaction to ever-increasing options; a way of managing choice in an environment of over-abundance (Heeter, 1985). Applying this perspective to the consumption of multiple media, Reagan (1996) found that consumers utilise different media in order to access specific topics of interest. However, subsequent investigation revealed that user repertoires were not simply defined according to either medium or genre, but by a mixture of the two (van Rees & van Eijck, 2003). The medium of video games is one in which genre labels are complicated by the need

to reflect its inherently interactive nature (Wolf, 2001). Therefore, further investigation is required in order to understand the network of relationships between a consumer, the gratifications that drive consumption, the genre of the consumed product, and the medium by which it is accessed. Such work would serve to begin the process of integrating video game streaming into the canon of existing media forms, in addition to testing the relevance of current approaches for interpreting this new phenomenon.

Understanding the reasons for media consumption are a primary focus within communication and media sciences. One of the leading perspectives in this area is the uses and gratifications (UG) theoretical approach (Katz, Blumler, & Gurevitch, 1973; Katz, Gurevitch, & Haas, 1973; Ruggiero, 2000). UG has been used in a wide range of communication research contexts, such as television (Krcmar & Greene, 1999; Schmitt, Woolf, & Anderson, 2003), personal communication (Ishii, 2006), and the practice of multitasking (Wang & Tchernev, 2012). Another area where UG has been heavily used is the online context (Papacharissi & Mendelson, 2010; Whiting & Williams, 2013), including online games (Hamari & Sjöblom, 2017; Sherry, Lucas, Greenberg, & Lachlan, 2006) and video streaming (Cha, 2014; Chiang & Hsiao, 2014; Sjöblom & Hamari, 2017). General media studies have also had an interesting in mapping the effect that various genres and content type has on consumption. Research on motivations to watch TV have been categorised into two groups, where relaxation and enjoyment motivate the more ritualized viewers and, learning and information gathering the more instrumental viewers (Rubin, 1981). The different viewing habits of consumers are highlighted in specific genres such as sports (Gantz, 1981; Raney, 2006; Westmyer, DiCioccio, & Rubin, 1998), news (Rubin & Perse, 1987) and reality TV shows (Ebersole & Woods, 2007).

Consumption of film and television in general has been concluded to be highly motivated by personal gratifications such as enjoyment and entertainment (Ferguson & Perse, 2000). Similar trends have been discovered in digital media spectating habits, where consumption of media content

on channels like YouTube has been found to be motivated by entertainment, information seeking and learning (Cha, 2014; Hanson, Haridakis 2008; Shao, 2009). In addition to these motivators, social media consumption, such as use of Facebook, was found to be motivated by social incentives (Chen, 2011; Pai & Arnott, 2013; Papacharissi & Mendelson 2011, Whiting and Williams 2013,).

In this study, we will use the UG approach to investigate motives for watching video game streams, which types of streaming content may afford which kinds of gratifications, and the gratifications that viewers derive from watching video game streams. In particular, we will focus on the relationship of video game genres, stream types and viewer gratification in the live gaming content. To study this phenomenon, we employ an online questionnaire survey (N=1097) to investigate six categories of gratifications: affective, information seeking, learning to play, personal integrative, social integrative and tension release, and their relationship with game genres and stream types.

Based on previous research within media, games and video game streaming, along with the expertise of the researchers, we offer three expectations regarding the results of this study. Firstly, we expect different types of gratifications to be catered for by different stream types. For example, competitive and speedrun streams will both afford affective, learning and tension release gratifications while competitive streams will additionally afford information gathering and social integrative gratifications. Secondly, different genre types will similarly afford different gratifications, for example slower-paced genres such as sandbox games will afford more gratifications relating to social interaction than faster-paced genres such as FPS games. Finally, we expect that as an individual game can be featured in virtually any stream type, it follows that it is the stream type which is the most significant factor that affords the individual user's needs to be gratified.

Sampling

The survey was initially piloted with 19 respondents, and after no major concerns arose, the primary survey was launched on the 26th of February 2015. The survey was online for approximately four weeks, ending on the 23rd of March. In order to incentivize participation, a prize draw of six video games from the online store Steam, each worth $50, was offered. The majority of respondents were from the online news and social networking sites Reddit, Twitter and Facebook, with additional respondents from individual online game forums.

A filter question was included in order to identify and remove invalid responses, resulting in 1091 valid responses. The amount of invalid responses comprised a 3.2% decrease in dataset size. The average age of respondents was 22.9 years (M = 22, SD = 5.9). The data showed a strong bias towards male respondents, with female respondents comprising 7.7% of the data, in line with third-party estimates of gender distribution among video game stream users (Quantcast, 2016). Of our respondents, 93.2% reported that they had registered an account for the Twitch service, had used the service for an average of 22.1 months (M = 21, SD = 14.6) and 38.7% had streamed at some point. The demographic details of the respondents are displayed in greater detail in table 1.
[Table 1 Demographic distribution of survey, here]

Measurement

Existing UG research has identified five high-level categories of needs: cognitive, affective, personal integrative, social integrative and tension release (Katz et al., 1973; West & Turner, 2010). We identified both learning to play games, as well as information seeking on products, to be two important cognitive motivations, and chose to measure them separately. The scales used in this survey all comprised of items that used a 7-point Likert scale (1 indicating "strongly disagree" and 7 indicating "strongly agree").

To measure affective motivations, the *perceived enjoyment* scale of Venkatesh (2000) and van der Heijden (2004) was used. For information seeking on products, the *usefulness* scale from van der Heijden (2004) was used and modified accordingly. For the learning to play scale, items from the *information seeking* scale by Papacharissi & Rubin (2000) were used, alongside an item taken from the van der Heijden (2004) *usefulness* scale. These items were modified to fit the context of video game streaming and learning strategies. For personal integrative motivations, we used the *recognition by peers* scale from Hernandez et al. (2011). Within social integrative motivations, the *companionship* scale introduced by Smock et al. (2011), and the *shared emotional connection* scale used by Chavis et al. (2008) were used. Relating to tension release, the scales of *escapism*, *relaxing entertainment*, and *habitual pass time* previously introduced by Smock et al. (2011) were used.

We measured the consumption of different video game genre streams using a frequency scale with values 1-5 indicating how frequently the person watched said genre or type (never, once a year, once a month, once a week, daily). The most fundamental issue that determines the way in which genre is conceived depends on the uses to which it will be put (Chandler, 1997; Elverdam & Aarseth, 2007), as such this study utilised genre definitions that are the product of established use in wider society and in research. The approach to the selection of game genres was, therefore, twofold. Firstly, we adapted a commonly used classification of video game genres (Lee, Karlova, Clarke, Thornton, & Perti, 2014). Secondly, we observed the 50 most popular games on the Twitch video game streaming service. We then cross-referenced these findings, resulting in 11 genres. Examples of games were provided alongside the genres in order to aid the survey respondents. The game genres used were: action, collectible card games (CCG), fighting, first-person shooter (FPS), massively multiplayer online (MMO), multiplayer online battle arena (MOBA), rhythm, role-playing game (RPG), real-time strategy (RTS), sandbox and, lastly, sports.

In addition to genre categories, we also classified types of streams according to the structure and content style of the stream. These adhered to the same frequency scales with values 1-5 as mentioned previously. The types of streams were: casual, let's play, competitive, how to play, review, speedrun and talk show. The stream type classifications were based on a systematic review of Twitch content in which the defining characteristics of individual formats were identified. While there is no guarantee that the classification is exhaustive, there are no clear precedents to classifying streaming content in this form. It is worth noting that although Twitch presently supports the streaming of activities not related to video games, at the time the survey was conducted, Twitch had a strict policy allowing only for video game content.

[Table 2 Video game stream types, here]

Validity & reliability

The analyses were undertaken in SmartPLS 3.2.3 which supports component-based structural equation modelling which is the de facto method when the model includes both psychometric, latent constructs and formative constructs (Ringle, Wende & Will, 2005). Convergent validity was investigated through the AVE, CR and Alpha measures. As these were all above the recommended thresholds, we can conclude that convergent validity was met (Fornell & Larcker, 1981; Nunnally, 1978). We found discriminant validity to be met, as the square root of the AVE for each psychometric construct exceeded the correlation for any other construct, and each measurement item had the highest loading with its corresponding construct (Chin, 1988; Fornell & Larcker, 1981; Jöreskog & Sörbom, 1996). The results of these validations are presented in Appendix A.

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Results & Discussion

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We investigated how the consumption of various video game genres and stream types are associated with affective, tension release, information seeking, learning to play, personal integrative

and social -related gratifications from spectating. In the following sections, we present these results as well as their implications through a discussion of practical and theoretical implications, along with limitations of the current study and future research directions.

Affective & tension release

[Table 3 Regression analysis for affective and tension release motivations, here]

The results show that stream types are considerably more important for obtaining affective gratifications than individual game genres. When considering game genres alone, as seen in Model 1, we can see a large number of eSports genres (e.g. CCG, FPS and MOBA) showing a positive association with affective motivations. Adopting a wider perspective, we can see that it is not the genre but the type of content, or theme, that is driving this association as per expectations.

At the other end of the spectrum are casual streams, which also show a strong association with affective motivations. Casual streams commonly feature a looser structure than competitive streams, and as such, facilitate exploration within the game on a higher level. We believe this notion of exploration is an important factor for affective motivations as it opens up a more creative space for the content creator. Video sharing services such as YouTube show content exploring novel interactions, those not part of the core game, to be highly popular.

One genre that we would like to highlight is RTS, which showed a negative association with affective motivations. While this result is noteworthy for developers of RTS titles, it also reveals an interesting facet about games as a spectator medium. RTS have in previous research been considered to be less cinematic than many other genres (King & Krzywinska, 2002), likely due to the information heavy gameplay and predominance of an isometric, third-person view. RTS games require user interfaces specifically designed for such features (Apperley, 2006), potentially restricting the spectator experience. This would indicate a minimum level of cinematic feel to a game in order for it to be suitable for live spectating. This example highlights the expected fact that

different genres can afford different gratifications to the individual user, the specific manifestation is somewhat surprising.

While genres could easily be considered important in the sense that spectators might be fans of one or more genre and stick to them, it seems that genres merely serve as a framework upon which the streamer builds their content. In reality, it appears that the structure of a stream has much more impact than which game is actually streamed. In the current user generated media landscape this poses interesting questions and challenges, as other media channels that primarily serve user generated content use the topic of videos as their primary classifications, rather than the style of the videos. An interesting observation is that streams for which the main purpose is to disseminate information, or to teach something to the viewer, do not seem to afford affective gratifications. While some of the stream types exhibiting affective gratifications, such as casual streams, may have dimensions facilitating cognitive aspects, they are not the main focus of these streams.

The findings among affective motivations are supported by previous research within streaming (Hamilton et al., 2014; Sjöblom & Hamari, 2017), eSports (Cheung & Huang, 2011; Hamari & Sjöblom, 2017) and video sharing (Cha, 2014; Hanson & Haridakis, 2008).

For tension release motivations, we find only positive associations, in line with previous research on streaming (Sjöblom & Hamari, 2017), social media (Whiting & Williams, 2013), YouTube (Hanson & Haridakis, 2008), Facebook (Papacharissi & Mendelson, 2010) and internet use (Courtois et al., 2009). As seen previously, with affective motivations, the stream types focused on information dissemination show no association with tension release motivations. This would indicate that these types of streams, heavy on the cognitive load, do not offer a spectating experience suitable for relaxation and escape. Instead, we note the importance of casual and competitive streams. We argue that there are two distinct motivations at play here: distraction and escapism, two facets of the greater notion of tension release. For casual streams, we see the main factors for tension release gratifications to be the ease of watching and that they serve as a form of

distraction. A looser structure, without a rigid agenda of programming, allows potential viewers to more easily tune in and watch the stream at any time. Many viewers may have streams on in the background while doing work or chores, with the streamer serving as a form of virtual company, in the same way that many people keep televisions on in the background (Beentjes, Koolstra & van der Voort, 1996; Pool, Koolstra, & van der Voort, 2003). Competitive streams, on the other hand, do not share the loose structure, but instead offer an intense viewing experience for spectators ingrained with the specifics of competitive play, akin to many traditional sports. Hence, we come to the second of our distinct motivations: escapism. This means that a spectator can escape into the intense competitive commentary and watch their favorite teams and players, removing themselves from the worries of everyday life. The lack of connections between genre and tension release is explained by the fact that the distraction element relates to the form of the stream itself, whereas the escapism aspect is linked to the particular games played in competitive eSports, and therefore, the games in which the consumers are interested.

Another factor that we believe impacts the spectating popularity of highly competitive games, represented by the CCG, FPS and MOBA genres, is the stress associated with playing and performing in such a high intensity situation. Many of these games are played in teams and the social aspect may add to this feeling of stress, as team mates can often lash out in very toxic ways (Kwak, Blackburn, & Han, 2015). Hence, spectating might afford similar gratifications as playing, with less stress. Action games, on the other hand, are more commonly single-player experiences, with what we believe to be a lower level of stress inducing components. We believe the positive influence on tension release gratifications to stem from two main reasons. First of all, the actual action supplied by these games offers people the opportunity to let their minds wander. Secondly, many high budget releases fall into the action genre, and often have a fairly significant plotline, thus existing somewhere between computer games and cinema as a spectating experience.

[Table 4 Regression analysis for information seeking & learning to play motives, here]

The current study shows generally positive tendencies for information seeking motivations, supported by previous research within streaming (Hamilton et al., 2014; Sjöblom & Hamari, 2017) and social media (Papacharissi & Mendelson, 2010; Whiting & Williams, 2013). The results show that streams intended to convey cognitive information succeed in their task, with let's play and review streams showing positive associations with information seeking, once again offering evidence of the distinct gratifications afforded by different stream types. While not exclusively aimed at cognitive aspects, casual streams often feature a flexible structure with the possibility to cover informative topics perhaps not possible in more structured stream types, such as competitive streams. Notably absent are the how to play streams, as information seeking is aimed at learning about games as products, not about the actual gameplay itself. The results highlight the importance of an informal setting for conveying information in a form that is seen as both valuable and trustworthy. In particular let's play and casual streams focus on showing game content informally, much like you or a friend were playing the game. We argue that this recreates the experience of sitting on a couch with your friend and watching them play, thereby enhancing the value of the word-of-mouth information gained from a streamer. The fact that spectators can interact with streamers in this relaxed environment and ask them questions about the game should be seen as another strengthening factor when it comes to information acquisition from streams.

A highly interesting observation is the strong association shown between action games and information seeking. Many AAA-releases fall within the action genre, and as these are games with a fairly high price tag at the date of release, consumers may feel unsure about making a purchase without thorough research. We argue that video game streams fill this need for acquiring product information very well, this can be seen in the association between action games and information seeking gratifications. It may be that individual game titles are more significant for information seeking than particular genre types as users already know the game. Besides helping make a more

educated decision regarding a potential purchase, streams can also help the user find new games. These results are further reinforced when examining purely game genres, as seen in Model 1. While many genres show positive associations when removing stream types from the equation, the fact that action games remain as the genre with the strongest association in Model 3 tells us that these types of games are of particular interest to consumers. This result further validates the expectation that different genres serve to fulfil different needs on the part of consumers.

As with the other cognitive motivational category, information seeking, previous research has shown the importance of the learning activity in relation to watching streams (Hamilton et al., 2014; Sjöblom & Hamari, 2017) and social media (Papacharissi & Mendelson, 2010; Whiting & Williams, 2013). The results from the current study indicate the importance of stream types with a strong emphasis on information dissemination in the form of game strategies. Perhaps the clearest is how to play streams, as these are specifically aimed at teaching others how to do a particular task, or in this case, how to play a certain game. While casual streams are not directly intended to disseminate information, they foster an informal environment fruitful for learning, allowing even beginners to learn game strategies through an explorative approach. In contrast to casual streams, competitive streams allow for more advanced players to learn strategies employed by professional players. In connection with competitive streams, we see a positive association for MOBA games, which are among the most popular eSports genres (NewZoo, 2016) and provide a large number of professional gameplay streams. This suggests that games titles, rather than genres per se, are associated with the learning to play gratification; users are seeking information relating to strategies employed in a specific game, not MOBA games in general.

The results illustrate two very separate facets of learning to play. On one hand, how to play and casual streams cater to new and less experienced players looking to understand the basics of a game. At the other end of the spectrum we find the hardcore fans tuning in to competitive broadcasts in hopes of adopting strategies employed by professional streamers. We would like to

highlight the unique aspect video games present when examining the act of learning from a competitive activity. When examining the difference between eSports and traditional sports, game strategies seen in competitive broadcasts can fairly easily be tried by the spectator, in contrast to seeing an impressive strategic maneuver in a soccer game (Hamari & Sjöblom, 2017).

Personal integrative & social integrative

[Table 5 Regression analysis for personal integrative & social integrative motivations, here]

The results show the importance of a flexible content structure for personal integrative gratifications, with an emphasis on facilitating interaction. The manifestation of this can be seen in the influence of, in particular, sandbox games and casual streams. The forms of personal integrative motivations measured in this study concentrated on recognition, and we argue that sandbox games offer an excellent avenue for this. The relatively slow pace of play allows the streamer to interact with spectators and fosters communication. Thereby making it possible to provide comments and suggestions related to what the streamer is doing, and to be heard in the stream's community. The sense of community more easily offered by smaller streams can then lead to positive impacts on receiving recognition (Hamilton et al., 2014). The importance of building a reputation among one's peers has previously been shown to be of importance in the context of video sharing sites (Chiang & Hsiao, 2014).

As with the explorative nature of sandbox games, casual streams are also often explorative in nature, and conducted at a pace suitable for the community to participate in the stream activity. Casual streams are often smaller in size, where the voice of an individual viewer is more likely to be heard and noticed. Analyzing the concept of exploration within gameplay further, we can see from Model 1 a positive influence of action games on personal integrative gratifications. This genre also supports a level of exploration, further strengthening our argument of the exploratory nature in games as a facilitator for both spectator-to-spectator and spectator-to-streamer communication. This suggests that there are characteristics inherent in certain genres which affect personal integrative

gratifications, an implication which is borne out by the fact that RTS games have a negative influence on personal integrative gratifications. This negative relationship highlights the fact that the size of a stream is not the only important factor, but that the game genre also needs to support discussion in order to foster the level of communication required to feel gratified by receiving recognition. The fact that RTS games are both information dense and require a high level of existing knowledge in order to play effectively can lead to the situation where no fruitful input can be given for the streamer. We can see, therefore, how particular stream types and game genres serve to gratify specific needs of users.

The results for social integrative motivations show an interesting facet of genres compared to the other motivational types. Popular eSports genres do not show associations with social motivations and instead we see two genres, that emphasize the community aspect, influencing social gratifications: rhythm and sandbox games. The fact is, that even though video game streaming as a whole can be seen as a social media, certain genres seem to naturally gravitate toward a user equilibrium more fruitful for social interaction. Previous research within streaming has exposed the fact that spectators experience smaller streams as being more conducive to social interaction (Hamilton et. al, 2014). These genres commonly fit into the casual type, which also showed a strong positive influence on social gratifications. While these are examples of small and possibly tight-knit communities serving as facilitators of gratification, competitive streams also influence social gratifications, and they are often large communities. We argue that the sense of community commonly experienced within these types of streams is a way of identifying as an eSports consumer or follower of a particular eSports title, rather than identifying with a particular stream or streamer, as can be the case in the less popular games. When inspecting the difference between Model 1 and Model 3, we can see this quite clearly for the FPS and MOBA genres which become less significant with the introduction of stream types, with most of the influence likely being accounted for by competitive streams. Social aspects have been found to impact the playing

of these types of competitive games (Jansz & Tanis 2007; Sherry et al., 2006; Williams, Yee, & Caplan, 2008; Yee, 2006), and as the current study indicates, are of significance for the spectating side of the spectrum. The findings are in line with previous work relating to social integrative motivations and streaming (Hamilton et al., 2014; Sjöblom & Hamari, 2017), eSports (Scholz, 2012) and social media (Papacharissi & Mendelson, 2010; Whiting & Williams, 2013).

Theoretical implications

The results of this study have interesting implications for future studies within user generated content, online media and video streaming. While this study focused on video game genres in the streaming context, we believe valuable insight can be gained not only pertaining to game genres, but also in relation to genres among media as a whole. The revelation in our results that the archetypal structure (i.e. the type of streamed content) of media has a stronger impact than the content (i.e. the genre of games being streamed) of said media is interesting both in the context of broadcasting but also for social video sharing through services such as YouTube, Facebook, Instagram and Twitter.

McLuhan (1964) famously coined the term *the medium is the message*, and as we study an emerging form of new media, it is highly relevant to consider the role of medium and message in the context of video game streaming. In this study we looked at both game genres and stream types as predictors of motivation types. Both these could be considered as part of the message of the larger medium of the internet, indeed McLuhan argues that the content of every medium is another medium. However, we argue that stream type transcends the level of pure message, as these types represent archetypes of content, comprised by a higher level of structure. Genres, on the other hand, can be considered closer to being the message, even though they also play a role in facilitating interactions between streamers and spectators. The results of this study indicate that, in fact, the existence of video game streaming as a medium serves to shape the message, in this case the behavior and trends of the people using it. When considering the laws of media related to the

message is the medium (McLuhan & McLuhan, 1988), the tetrad, we see the implications that video game streaming enhances niche communities and retrieves an act of gameplay involving social interaction that was in decline. Additionally, it serves to obsolete some previous mediums as primary channels for game marketing, while also reversing into a phenomenon in and of itself. One where users record videos of particular events that take place during live streams, subsequently making these highlights available of video sharing sites like YouTube.

Furthermore, McLuhan's position highlights genre, and its inherent usefulness, as being socially-defined and subject to constant revision (Chandler, 1997; Elverdam & Aarseth, 2007). We can see that for some users, those seeking social and personal integrative gratifications, genre labels are useful tools as they highlight any inherent interactive qualities and characteristics. For others, who seek gratifications related to tension release, it may be more productive to consider genre labels that communicate the theme of a game being streamed. Finally, certain gratifications such as information seeking, learning to play, and tension release may be linked to specific game titles, rather than any video game genre categories currently used.

Such results highlight why game genre labels are a hybrid of different qualities and of the differing levels of abstraction provided by concepts of platform, genre, mode and milieu (King & Krzywinska, 2002; Järvinen, 2003). The fact is that different users seek differing forms of gratification which, in turn, require distinct information in order to effectively communicate a game's qualities to the consumers. In relation to wider media, it is apparent that the declining influence of traditional structural characteristics (Giddens, 1984) suggests that established genre labels require adaptation. To some extent this already occurs as many genres are modified in order to reflect specific sub-genres (Chandler, 1997). However, it may be beneficial to utilise labels which stress elements unconnected to narrative or theme, ones which are instead based on socially-emergent labels reflecting presentation style such as the "unboxing" videos popular on YouTube.

The emergence of video game streaming is a significant sign that the importance of user generated content and the democratization of the media ecosystem continues apace. While many technological developments have been necessary to make video game streaming a reality, the democratization of media is not just a paradigm shift within a narrow media landscape. Rather, it reflects a greater development in the democratization of production and economic coordination driven by recent IT developments, such as sharing economies (Hamari, Sjöklint, & Ukkonen, 2016; Sundararajan, 2016), gig economy/microwork (Irani, 2015), crowdsourcing (Howe, 2006; Morschheuser, Hamari, & Koivisto, 2016) and crowdfunding (Belleflamme & Lambert, 2014; Mollick, 2014). The results of the current study, particularly in relation to information acquisition, indicate that consumers turn to streamers as an important source of information, analogous to other peer-produced informational content, e.g. Wikipedia (Shao, 2009). This trend is also highly visible on services such as YouTube, where a multitude of videos aimed at disseminating information are available on various topics (Hanson & Haridakis, 2008; Haridakis & Hanson, 2009).

When considering the phenomenon of video game streaming as a media form, we see the evolution of an interesting facet of sociability within the context of games. In the early days of the evolution of video games, in arcades spectators would gather around the person playing a game, as home consoles were not yet widespread (Newman, 2004). Later, LAN-parties facilitated the face-to-face interaction that many people had experienced while sitting on a couch with friends, playing games (Jansz & Martens, 2005). As games moved further to the online sphere, face-to-face social interaction was, in many cases, lost. Video game streaming has brought back some of the social interaction that had been absent from the domain of video games. Therefore, we are not only witnessing a convergence of interactive and "passive" media but also an oscillating development curve where aspects of the media experience come and go depending on the platforms on which they are consumed.

Not only does streaming offer interesting insights into the sociability of games, it also makes the important observation that particular games and genres might offer contrasting gratifications when played and when spectated. This makes games a highly interesting form of media, as the duality of spectating and play separates it markedly from television and movies. For example, competitive games might cause a high level of stress when played, as winning or losing play a large role in the game experience. This, coupled with the toxic attitude that many players display when a teammate has made what they perceive to be an error (Kwak, Blackburn, & Han, 2015), may make some players shy away from the games. However, when spectated, the same level of stress may not arise as you are not subject to the same expectations that the player is. The results of this study indicated positive associations for many competitive genres with tension release motives, suggesting that it may be a gratification that shows differences between play and spectating.

Practical implications

For the majority of motivations, stream types were shown to have the highest associations with gratification, displaying important implications for both service designers, streamers and game designers. The importance of content structure as a chief facilitator argues for designers of stream services to perhaps rethink the way many consumers discover new content. Currently, a majority of the explorative functions available on streaming services highlight the game being played. However, it may be more fruitful to facilitate alternative means of exploration through the type of content being broadcast, rather than the topic. This is not an easy task to tackle, but perhaps utilizing crowdsourced categorical tagging of content dimensions could prove a valuable tool.

Additionally, eSports organizations and broadcasters should think about the relation of their content to personal integrative motivations, as while competitive streams showed positive associations for other motivations, personal integrative motivations were missing. Regarding individual genres, the strong association between action games and information seeking motivations is something we feel is of note. While our research merely highlights the need of information

seeking among action spectators, and does not directly link this to purchasing, previous studies have shown the impact that video game streams have had on game sales (Hernandez, 2016).

The findings also provide game developers with a better perspective on the spectating habits and motivations of their target audiences. Although the streaming and spectating culture naturally calls for cinematic game experiences, there are other important factors for game developers to consider. The streaming and spectating culture is heavily social and interactive, and can be utilized in game development by offering ways to better integrate streaming activities within the game though user-generated content sharing services, chats and integrated tournament structures. User-generated game content can also be a useful promotional and information tool for game developers, which can be utilised and embraced within the game development process.

Limitations and future research

As the dataset used in this study was collected through an online survey, where respondents are self-selected and data self-reported, this naturally poses some limitations for the study. Self-selected respondents may be more active users of streaming service than the average user, and hence the results are skewed towards the highly active population of service users. Furthermore, even though the sample size is adequate in all statistical senses, and also large in the context of streaming research, it still sets some constraints. Many of the genres represented in this study are not very popular, and hence quite a small percentage of respondents reported watching them. Should we wish to paint a more in-depth picture of the smaller genres, such as rhythm or sports games, a separate study should be aimed specifically at spectators of these genres. It should also be noted that our interpretation of the genres represented in this research may be subject to discussion, and that respondents may potentially interpret these genres differently. It may have been beneficial, therefore, to collect additional information about individual game titles.

We chose to employ the UG approach to studying the subject of video game streaming genres and stream types, as we considered it to be abstract enough to build an informed image of

the phenomenon. This was particularly apt as there has not yet been much research on the subject, however, we do acknowledge the value of having scales developed specifically for this context. Hence one limitation of this study may be that the six motivations studied here do not cover all the motivations for spectating.

As mentioned, the importance of stream types is a phenomenon that might be worth studying in additional contexts. For example, on YouTube, videos are commonly classified and found by what the core of the content is about, rather than the overall mood or structure of the video. Even though the specifics might be different, it would be highly interesting to see how the types of content used in this study would impact viewership within the context of YouTube.

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Table 1 Demographic distribution of survey

Factor (unit)		Value	Factor (unit)		Value
Gender (%)	Male	92.3%	Employment (%)	Student	57.12%
	Female	7.7%		Full-time	22.45%
Age (years)	Average	22.94		Part-time	8.49%
	Median	22.00		Unemployed	10.31%
	SD	5.87	Income ($)	<10 000	56.48%
Education (%)	None	0.18%		10 000 - 29 999	21.81%
	Primary level	8.67%		30 000 - 49 999	11.41%
	Secondary level	52.19%		50 000 - 69 999	5.11%
	Upper level	38.96%		70 000 - 89 000	2.10%
				90 000 up	3.10%

Table 2 Video game stream types

Stream type	Description	Remarks about (typical) games
Competitive	Competitive matchmaking, eSports tournament & matches	Most titles are well established, for example Hearthstone, League of Legends, Counter-Strike
Let's Play	The streamer plays a game from start, often to finish. The aim is commonly to simulate the experience the average consumer has when purchasing a game and starting to play it.	A very wide variety of games can be played this way, most often single player games.
Casual	No strict structure or aim, relatively explorative. Commentary and gameplay may focus, and adapt to, the discussion forming around the stream.	No particular limitation on the types of games commonly streamed.
Speedruns	Player attempts to complete a game as quickly as possible, optionally with additional restraints. Speedrunning differs from eSports as a competitive endeavour in that goals are self-imposed and the played does not directly compete against other players.	Speedruns are often of classic games that attained a type of cult status within the speedrun community.
Talkshows	One or several people discuss topics centred around a particular game, or video game culture. Stream heavily focused on the interaction between the streamer and the audiences and discussion is encouraged.	Most commonly focus on an individual, very popular game, such as an eSports title. Alternatively can be more of a generalist show, perhaps covering new releases.
How to play	The streamer plays a game in an instructive/demonstrative manner, as to teach viewers the strategies and intricacies of the game they are playing.	No particular limitation on the types of games commonly streamed.
Reviews	Streamer gives a concise review of a game. Reviews provide an analytical and sometimes also critical approach to the game.	No particular limitation on the types of games commonly streamed. Reviews often feature relatively new games.

Table 3 Regression analysis for affective and tension release motivations

	Model 1 Affective		Tension release		Model 2 Affective		Tension release		Model 3 Affective		Tension release	
R^2	0.160		0.178		0.221		0.252		0.248		0.273	
	β	p	β	p	β	p	β	p	β	p	β	p
Action	**0.125****	0.000	**0.152****	0.000					**0.077***	0.016	**0.071***	0.031
CCG	**0.154****	0.000	**0.166****	0.000					**0.081***	0.008	**0.097****	0.001
Fighting	0.022	0.472	0.031	0.340					-0.010	0.750	-0.004	0.911
FPS	**0.206****	0.000	**0.206****	0.000					**0.061***	0.046	**0.080***	0.010
MMO	0.036	0.219	0.010	0.733					0.015	0.610	-0.012	0.690
MOBA	**0.177****	0.000	**0.227****	0.000					0.037	0.211	**0.110****	0.000
Rhythm	0.039	0.159	0.045	0.094					0.011	0.665	0.005	0.858
RPG	0.047	0.125	0.003	0.919					**0.068***	0.027	0.006	0.860
RTS	**-0.069***	0.028	-0.054	0.087					**-0.063***	0.048	-0.054	0.083
Sandbox	**0.095****	0.001	**0.083***	0.004					**0.070***	0.021	0.030	0.311
Sports	-0.014	0.673	-0.004	0.892					-0.001	0.972	0.004	0.893
Casual					**0.279****	0.000	**0.293****	0.000	**0.232****	0.000	**0.245****	0.000
Competitive					**0.297****	0.000	**0.262****	0.000	**0.276****	0.000	**0.204****	0.000
How to play					0.024	0.391	0.018	0.506	0.010	0.716	-0.002	0.941
Let's play					**0.088***	0.003	**0.153****	0.000	0.038	0.227	**0.128****	0.000
Review					0.016	0.592	-0.041	0.150	-0.005	0.855	-0.047	0.109
Speedrun					**0.061***	0.030	**0.079***	0.005	0.026	0.423	0.060	0.053
Talkshow					0.046	0.086	**0.080***	0.004	0.029	0.291	**0.068***	0.018

*Note: * = p < 0.05, ** = p < 0.01*

Table 4 Regression analysis for information seeking and learning to play motives

	Model 1 Information		Learning		Model 2 Information		Learning		Model 3 Information		Learning	
	β	p	β	p	β	p	β	p	β	p	β	p
R^2	0.160		0.094		0.221		0.168		0.304		0.179	
Action	0.265**	0.000	0.009	0.807					0.162**	0.000	-0.008	0.834
CCG	0.044	0.157	0.078*	0.013					0.018	0.564	0.038	0.210
Fighting	0.030	0.299	0.025	0.427					0.014	0.637	-0.008	0.795
FPS	0.068*	0.024	0.166**	0.000					0.036	0.258	0.045	0.183
MMO	0.053	0.071	0.073*	0.022					0.029	0.301	0.042	0.161
MOBA	0.079*	0.007	0.237**	0.000					0.049	0.107	0.091*	0.004
Rhythm	0.049	0.068	-0.022	0.476					0.018	0.517	-0.027	0.345
RPG	0.081*	0.020	0.004	0.916					0.044	0.195	0.013	0.696
RTS	0.087*	0.003	-0.007	0.816					0.066*	0.033	-0.013	0.685
Sandbox	0.112**	0.000	-0.043	0.229					0.048	0.106	-0.050	0.162
Sports	0.012	0.628	-0.021	0.585					0.021	0.411	-0.007	0.859
Casual					0.183**	0.000	0.118**	0.000	0.127**	0.000	0.105**	0.001
Competitive					0.041	0.118	0.297**	0.000	0.011	0.703	0.252**	0.000
How to play					0.070*	0.015	0.230**	0.000	0.053	0.072	0.207**	0.000
Let's play					0.263**	0.000	-0.011	0.713	0.187**	0.000	-0.002	0.954
Review					0.116**	0.000	0.019	0.488	0.068*	0.023	0.023	0.419
Speedrun					0.120**	0.000	0.026	0.334	0.046	0.145	0.032	0.326
Talkshow					0.031	0.309	-0.062*	0.036	0.001	0.960	-0.056	0.062

Note: * = p < 0.05, ** = p < 0.01

Table 5 Regression analysis for personal integrative and social integrative motivations

	Model 1				Model 2				Model 3			
	Personal integrative		Social integrative		Personal integrative		Social integrative		Personal integrative		Social integrative	
R^2	0.100		0.169		0.114		0.209		0.144		0.242	
	β	p	β	p	β	p	β	p	β	p	β	p
Action	**0.105***	0.003	**0.141****	0.000					0.035	0.337	0.052	0.144
CCG	0.007	0.830	0.024	0.471					-0.031	0.347	-0.030	0.356
Fighting	0.057	0.073	0.021	0.502					0.028	0.376	-0.004	0.899
FPS	**0.087***	0.010	**0.111****	0.000					0.034	0.337	0.027	0.403
MMO	0.030	0.399	0.056	0.097					0.009	0.802	0.032	0.332
MOBA	0.040	0.188	**0.098****	0.001					-0.014	0.663	0.018	0.575
Rhythm	**0.074***	0.016	**0.112****	0.000					0.038	0.226	**0.073***	0.019
RPG	0.002	0.951	0.032	0.406					-0.012	0.736	0.021	0.579
RTS	**-0.071***	0.024	-0.055	0.076					**-0.079***	0.017	**-0.063***	0.036
Sandbox	**0.168****	0.000	**0.186****	0.000					**0.126****	0.000	**0.129****	0.000
Sports	-0.013	0.652	-0.005	0.883					-0.011	0.719	0.002	0.948
Casual					**0.212****	0.000	**0.270****	0.000	**0.178****	0.000	**0.220****	0.000
Competitive					0.051	0.092	**0.117****	0.000	0.058	0.108	**0.114****	0.001
How to play					0.021	0.538	0.015	0.645	0.030	0.361	0.010	0.746
Let's play					**0.077***	0.017	**0.154****	0.000	0.037	0.271	**0.100***	0.003
Review					0.035	0.321	0.032	0.345	0.032	0.371	0.020	0.542
Speedrun					**0.086***	0.005	**0.076***	0.009	**0.068***	0.045	0.041	0.198
Talkshow					**0.076***	0.020	**0.105****	0.001	**0.066***	0.044	**0.088***	0.005

*Note: * = p < 0.05, ** = p < 0.01*

Appendix A: Discriminant validity

	AVE	CR	Alpha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Genre: Action	1,00	1,00	1,00	1,00																							
2. Genre: CCG	1,00	1,00	1,00	-0,02	1,00																						
3.Genre: FPS	1,00	1,00	1,00	0,21	-0,26	1,00																					
4. Genre: Fighting	1,00	1,00	1,00	0,33	0,08	0,11	1,00																				
5. Genre: MMO	1,00	1,00	1,00	0,27	0,25	0,02	0,15	1,00																		
6. Genre: MOBA	1,00	1,00	1,00	0,03	0,16	-0,10	0,12	0,22	1,00																	
7. Genre: Rhythm	1,00	1,00	1,00	0,20	0,09	0,10	0,30	0,21	0,15	1,00																
8. Genre: RPG	1,00	1,00	1,00	0,39	0,27	0,01	0,30	0,46	0,12	0,22	1,00															
9. Genre: RTS	1,00	1,00	1,00	0,14	0,26	0,08	0,26	0,30	0,23	0,16	0,29	1,00														
10. Genre: Sandbox	1,00	1,00	1,00	0,42	-0,04	0,24	0,17	0,21	-0,03	0,18	0,25	0,10	1,00													
11. Genre: Sports	1,00	1,00	1,00	0,33	0,05	0,19	0,13	0,14	0,03	0,21	0,22	0,08	0,29	1,00												
12. Stream type: CASUAL	1,00	1,00	1,00	0,35	0,07	0,16	0,14	0,21	0,15	0,22	0,19	0,05	0,26	0,19	1,00											
13. Stream type: COMPETITIVE	1,00	1,00	1,00	-0,04	0,11	0,30	0,13	0,07	0,36	0,07	-0,04	0,16	-0,02	-0,02	-0,05	1,00										
14. Stream type: HOWTOPLAY	1,00	1,00	1,00	0,16	0,14	0,02	0,13	0,24	0,25	0,10	0,21	0,17	0,14	0,08	0,17	0,10	1,00									
15. Stream type: LETSPLAY	1,00	1,00	1,00	0,44	0,07	0,16	0,20	0,24	0,05	0,18	0,32	0,20	0,38	0,17	0,34	-0,01	0,17	1,00								
16. Stream type: REVIEW	1,00	1,00	1,00	0,31	0,13	0,07	0,20	0,24	0,06	0,15	0,29	0,25	0,21	0,08	0,18	-0,03	0,46	0,29	1,00							
17. Stream type: SPEEDRUN	1,00	1,00	1,00	0,30	0,13	0,12	0,45	0,19	0,08	0,32	0,34	0,26	0,21	0,17	0,14	0,09	0,10	0,32	0,17	1,00						
18. Stream type: TALKSHOW	1,00	1,00	1,00	0,25	0,15	0,11	0,20	0,19	0,13	0,17	0,21	0,23	0,26	0,14	0,26	0,11	0,31	0,27	0,39	0,15	1,00					
19. Motivation: AFFECTIVE	0,75	0,92	0,89	0,24	0,13	0,20	0,15	0,18	0,19	0,15	0,19	0,09	0,21	0,13	0,32	0,29	0,15	0,22	0,12	0,17	0,20	0,87				
20. Motivation: INFO	0,77	0,93	0,90	0,41	0,10	0,15	0,23	0,26	0,14	0,20	0,31	0,23	0,29	0,20	0,33	0,05	0,23	0,42	0,29	0,26	0,24	0,43	0,88			
21. Motivation: LEARN	0,76	0,93	0,90	0,05	0,09	0,11	0,08	0,14	0,25	0,05	0,08	0,10	0,00	0,02	0,13	0,31	0,27	0,06	0,11	0,08	0,08	0,49	0,42	0,87		
22. Motivation: PERSONAL INTEGRATIVE	0,72	0,91	0,87	0,22	-0,02	0,15	0,14	0,11	0,04	0,15	0,12	0,01	0,25	0,11	0,28	0,06	0,12	0,21	0,15	0,17	0,19	0,47	0,42	0,31	0,85	
23. Motivation: SOCIAL INTEGRATIVE	0,54	0,90	0,88	0,29	0,02	0,18	0,16	0,19	0,11	0,22	0,19	0,07	0,31	0,16	0,36	0,12	0,15	0,31	0,18	0,19	0,26	0,66	0,48	0,35	0,70	0,73
24. Motivation: TENSION RELEASE	0,54	0,92	0,90	0,25	0,14	0,19	0,16	0,16	0,23	0,16	0,16	0,10	0,19	0,14	0,36	0,27	0,14	0,29	0,10	0,20	0,23	0,72	0,46	0,41	0,45	0,65	0,74