



## The Affective Messaging of Gameplay Livestream Viewers

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## Keywords

affective disposition theory, parasocial relationship, Twitch, gameplay livestreaming

## INTRODUCTION

Gameplay has traditionally been social, with arcades providing an outlet for public play and consoles, allowing people to play together at home (Taylor, 2018). Onlookers are not limited to being passive spectators as they are also provided the opportunity to engage directly with the player (Newman, 2002a, 2002b), with gameplay livestreaming being the newest iteration (Georgen, 2014). Gandolfi (2016) identified three approaches to streamer-viewer communication taken by gameplay streamers: challenge, exhibition, and exchange. Challenge concerns highly-skilled players with minimal communication and exchange, conversely, prioritizes showmanship over gameplay. Exhibition is a combination of the two. These three orientations fit the spectrum between expertise and entertainment streamers (Leith, 2018; Taylor, 2018) which each meet the conventional, separate motivations of gameplay livestream viewers: game learning and interpersonal bonding (Sjöblom & Hamari, 2017). Expertise streams prioritize the Goffmanian play frame while entertainment streams prioritize the interview frame (Karhulahti, 2016).

## THEORIES

Common communication characteristics develop on gameplay livestream platforms like Twitch.tv (Twitch). Generally, viewers often send single messages and streamers will elaborate (Recktenwald, 2017). Streamer messaging should differ according to stream content, such as non-gameplay versus gameplay and entertainment versus expertise.

Affective disposition theory (ADT) argues that media users will develop dispositions toward media figures as they consume media. Viewers would perceive streamers along the spectrum of extreme liking to extreme disliking (Raney, 2017). Viewers will have a positive experience when something good happens to a streamer they like. As disposition increases (Lachlan & Tamborini, 2008; Raney & Bryant, 2002; Tamborini et al., 2012, 2013), streamers with a greater degree of communication should produce greater degrees of liking and disliking.

Parasocial relationships (PSRs) concern the perceived relationship between media users and figures which resemble traditional interpersonal relationships (Horton & Wohl, 1956). Face-to-face encounters and informal settings heighten the sense of PSR (Auter & Davis, 1991). The nature of gameplay livestreaming lends itself to these characteristics with livestreams generally being informal, personable, and occurring over several hours at a time. Twitch also provides users with the opportunity to directly message the objects of their PSRs.

## RESEARCH OBJECTIVES

This research sought to identify the presence of ADT and PSR by examining messages affect. Both theories provide conditions upon which positive affect should develop. ADT prioritizes narrative consumption and PSR concerns perceived social interactions. Therefore, streams with more narrative and engagement should produce more positivity. In all cases, ADT and PSR suggest that users who are attempting to communicate with the streamer directly should be more positive than when they are

not. Non-gameplay and entertainment streams allow for more viewer directed interaction than gameplay and expertise streams respectively.

RQ 1: Are messages intended for the streamer more positive than other messages?

RQ 2: Are messages from non-gameplay streams more positive than messages from gameplay streams?

RQ 3: Are messages from entertainment streams more positive than messages from expertise streams?

## **METHODOLOGY**

Python bots collected data from the chats of the top 50 channels from the top 20 viewed and streamed games, along with the top 5 non-games, over 30 days. The bots logged stream and chat data to a PostgreSQL database. Data was then cleaned to include English-speaking, partnered streamer with 75 or more viewers for at least 30 minutes. Cleaned data was then copied and moved to the iCER's High Performance Computing Center.

Affect was identified by using the sentiment analysis functionality of tidyverse (Silge & Robinson, 2016). R calculated the sentiment for each channel according to sentiment representation, with a positive percentage representing a more positive chat and a negative percentage representing a more negative chat. Additional analyses (i.e., t-test and ANOVA) were used to verify the significance of variance. N-gram, or commonly occurring congruent words, were also used to provide additional support to the sentiment analysis.

## **CONCLUSION**

Sentiment analysis found two recurring consistencies. First, streamer-specific messages were significantly more positive than their non-streamer-specific counterparts with a medium-to-large effect size. Conversely, stream content, with small-to-trivial effect sizes, proved to be a less reliable predictor. Streamer-specific messages did not vary significantly between entertainment and expertise streams. The lack of statistical significance may be related to the fact that streamers exist along a gameplay approach spectrum as opposed to binary states.

Streamer-specific messages being more positive than negative suggests a greater level of affect toward streamers than others. Content may be a poor predictor of affect since streamers regularly broadcast for 8-10 hours a day, providing viewers with sufficient time to overcome the traditional limitations. Future research can further delve into both theories with the inclusion of additional analytical tools. ADT would benefit from stream content analysis and PSR would benefit from viewer surveys. Additional factors that may provide further insights include viewer counts and streamer demographics (e.g., gender, race, sexuality).

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