Suspecting Sarcasm: How League of Legends Players Dismiss Positive Communication in Toxic Environments

SUSANNE POELLER, University of Saskatchewan, Canada

MARTIN JOHANNES DECHANT, University College London, United Kingdom

MADISON KLARKOWSKI, University of Saskatchewan, Canada

REGAN L. MANDRYK, University of Saskatchewan, Canada

Toxicity in multiplayer gaming is an ongoing problem that threatens the well-being of players, gaming communities, and game developers. Meanwhile, interventions that promote positive interactions and proactively create positive gaming spaces are still in their infancy; little is known about how players respond to positivity. In our study, 959 League of Legends players were presented with either 10 positive chat logs or 10 negative chat logs, and asked to reflect on the content and how representative such communication is of their own gaming experiences. We thematically coded participants' free-form answers (identifying the themes *normalize, acknowledge, downplay, cope, blame,* and *make personal*), and compared the positive and negative conditions in terms of theme prevalence. Our findings show that participants were more likely to normalize and acknowledge toxic negativity than positivity. Furthermore, the dominant response to positivity consisted of downplaying messages as not representative and rare, and even expressing suspicion that messages must have been fabricated or intended as sarcasm. Participants overwhelmingly cope by muting chat, protecting them from toxic interactions, but leaving them unexposed to positive communication and other beneficial social interactions within play.

CCS Concepts: • **Applied computing** → *Computer games*; • **Human-centered computing** → **Empirical studies in collaborative and social computing**; **Empirical studies in HCI**.

Additional Key Words and Phrases: positivity, toxicity, league of legends, coping, thematic coding, esports, digital games, fair play

1 INTRODUCTION

In 2022, the Entertainment Software Association reported that 83% of videogame players play with others online or in person. On average, players spend 41% of their digital gaming time playing with others, of which 25% is spent in online-multiplayer modes and 16% with in-person multiplayer games.[18]. Multiplayer online games are well-known for harboring toxicity, which has been defined as various negative behaviors involving abusive communications directed towards other

Authors' addresses: Susanne Poeller, susanne.poeller@usask.ca, University of Saskatchewan, Department of Computer Science, Saskatoon, Saskatchewan, Canada; Martin Johannes Dechant, m.dechant@ucl.ac.uk, University College London, London, United Kingdom; Madison Klarkowski, madison@cs.usask.ca, University of Saskatchewan, Department of Computer Science, Saskatoon, Saskatchewan, Canada; Regan L. Mandryk, regan@cs.usask.ca, University of Saskatchewan, Department of Computer Science, Saskatoon, Saskatchewan, Canada.

players (i.e., harassment, verbal abuse, and flaming) and disruptive gameplay that violates the rules and social norms of the game (i.e., griefing, spamming, and cheating [1, 5, 71]). Toxicity has many documented harms for players and gaming communities, including decreasing mood and enjoyment [65, 71], worsening performance [48], and reducing player retention [20, 22]. Over the last decade, League of Legends (LoL, Riot Games, [11]) has continually been one of the most popular online multiplayer games—in terms of both the number of active players, and in its success in attracting millions of spectators for both competitive events and casual livestreams [52]. LoL is a complex and competitive multiplayer online battle arena (MOBA), in which two teams of five players compete against each other to destroy the opposing team's base. Considering its competitive and cooperative nature, and its prominence in online gaming and esports, LoL is a good barometer for the current social culture within competitive online multiplayer games. Despite many games suffering from similar issues, League of Legends has been the specific game context within which many researchers have explored the nature (and harms) of game-based toxicity (e.g., [33, 48]).

To combat game-based toxicity, researchers and developers have focused primarily on detecting toxicity, providing reporting mechanisms, and punishing toxic players. For example, artificial intelligence and machine learning approaches have been used to detect toxicity by both researchers (e.g., [8, 49, 56]) and developers (e.g., FACEIT: [13], Valorant: [62], Overwatch: [9, 25]); however, these approaches are still in their infancy and accuracy rates are too low for effective prevention ([56]). In terms of explicit reporting, under-reporting of toxicity has been well established [5, 55], as has the reporting of non-toxic players who simply perform poorly in the game [35]. Once toxicity has been reported or detected, current intervention approaches focus on punishing the toxic player. For example, by banning players from the game, or by automatically muting them (e.g., [61]); however, bans have been demonstrated as ineffective and abused by players (e.g., [45, 55]), while muting has been shown to be even less effective than bans ([37]). It is clear that these approaches of detecting and punishing toxicity are not working to reduce toxicity in multiplayer games: a 2022 report from the Anti-Defamation League [2] revealed that 86% of adults have experienced harassment in online play, which is only accounting for one form of toxicity[36, 71]. Recent research suggests that toxic interactions in gaming have become normalized, and are viewed by many as simply part of gaming's culture (e.g., [5]). Despite this, many players report dissatisfaction with the presence of toxicity; and there is hope for changing gaming's culture, given the recent evidence that suggests that even if 25% of a community are vocal about a new norm, the consensus of the whole community can be tipped to the minority view [12]. Taken together, it appears that if even a minority of the gaming community can push for more positive interactions, its culture could potentially shift.

A focus on rewarding positive interactions—rather than punishing negative ones–is in line with research suggesting it as an effective approach for promoting behaviour change [23], in domains that range from training animals (e.g., [70]), to raising children (e.g., [4]), to promoting hand washing in hospitals [3]. In gaming communities, the notion of encouraging positive behaviour also has roots; for example, the Positive Play Initiative by Electronic Arts ([72]) was designed to promote and reward positive social interactions between players to proactively create positive gaming spaces. However, just stating the intention is not enough when it is not clear what steps have been taken beyond removing negative interactions. Also to encourage positive behaviour, Riot Games introduced an elaborate tool—the honour system [58]—which allows players to acknowledge positive teammates and earn rewards through acknowledgement of positive behaviours and communication. Despite this, Riot Games acknowledges that the honour system has not been successful in its intention of rewarding positive players: "*We know players sometimes use honour to reward good play rather than good behavior. We were hoping that with a clearer link between the system and the reward, players would be encouraged to use it as a way to show their appreciation of good behavior.*" [63]. Little is

known about why interventions designed to promote positive behaviour have been unsuccessful in multiplayer online gaming contexts.

Overall, neither interventions designed to reduce toxicity nor interventions designed to increase positive behaviours have succeeded in improving the culture within games such as League of Legends, which raises the question: why does toxicity remain the norm, when positive social interactions are desired by players and developers alike? It is possible that positivity does, in fact, constitute a typical interaction in many competitive games—but that disproportionate attention paid to negative interactions (whether as a consequence of cognitive biases, community influence, or otherwise) may artificially inflate the perception of toxicity's comparative prevalence. It is also possible that toxicity has become so normalized that positive social communication amongst players is perceived as foreign and unnatural. The problem is that although researchers and developers are beginning to understand how toxicity is expressed, normalized, and accepted in gaming spaces, there is little-to-no knowledge on how positivity is perceived, whether it is welcomed, and how it affects players when experienced. To this end, we aim to investigate the reception of both positive and toxic interactions to answer the following research question: *'how do League of Legends players perceive positivity and toxicity in the game?'*

To address this question, we conducted a mixed-methods study in which we invited League of Legends players (N=959) to view either 10 positive or 10 negative chat logs (inspired by League of Legends matches), and asked them to reflect on and respond to the chat logs by answering three prompts (e.g., how representative these chat logs were of the game). Through thematic analysis of their responses, we generated six representative themes (*normalize, acknowledge, downplay, cope, blame,* and *make personal*) from 32 subthemes, and report the prevalence of each after exposure to either positive or negative chat logs. We gathered a large sample so that we could report the prevalence of each theme, thus gaining a more granular understanding of community perceptions within League of Legends. The findings suggest that while normalization of negativity is still too common, it only reflected the views of a minority of participants. The majority acknowledged the negative nature of the messages. We further found that many players withdraw from the social aspect of the game by disabling the chat or muting players as a coping mechanism to continue playing, which would also block them from exposure to positive behaviours. For the group exposed to the positive messages, we found a high prevalence in the rejection and mistrust of positivity, with 87% of respondents volunteering information that downplayed the presence of positivity in League of Legends, even while simultaneously expressing a wish for more of it; 26% of participants openly stated their hope for positive change. The findings demonstrate representative community perceptions of both positive and toxic messages in League of Legends, and offer novel insights into why a popular online game community that wishes for more benevolent norms continues to instead perpetuate toxic ones that cause harm to its players.

2 BACKGROUND

2.1 Toxicity in Multiplayer Online Games

2.1.1 League of Legends and Other MOBA Games. League of Legends (LoL) [11] is a popular game from the Multiplayer Online Battle Arena (MOBA) genre. Other examples in this genre are Dota 2 (Valve), SMITE (Hi-Rez Studios), and Heroes of the Storm (Blizzard). In League of Legends, players face each other in (mostly) temporary teams. Players join a game alone, or with a group of friends, to get matched with other players—usually for a 5v5 game. There are different game modes, ranging from more casual gameplay (e.g., ARAM [All Random All Mid], Co-op vs. AI) to more competitive play (e.g., Ranked Games). Matchmaking (e.g., [24]) aims to ensure that games are fair and players on both teams are matched based on their skill level. For each standard match (played on the default

'Summoner's Rift' map), each player picks one of currently 162 champions (January 2023), and usually fills one role (i.e., top lane, mid lane, bot lane, support, or jungler). MOBAs are competitive and complex games in which teamwork is crucial for success. To allow for strategic team-play, LoL incorporates several communication features—such as textual chat, verbal chat, and gestural 'ping' communications (which allow players to quickly convey strategic information without the use of chat features [29]). League of Legends is a popular esports title, attracting over four million viewers at the 2021 World Championship [15]; likewise, the game has been a focus of extensive games and esports research. However, despite the emphasis on competition and teamwork, League of Legends is also known for problematic player behaviours—which publisher Riot Games has been trying to combat for years (e.g., [22, 33, 48]).

2.1.2 Defining Verbal Toxicity. Toxicity can be defined as an umbrella term for various forms of negative behaviours exhibited by players in online environments [71]. Kowert [36] classified types of such behaviours in an effort to make terminology more consistent in the field. Following this framework, the main topic of this paper are *transient verbal actions* (i.e., *trash talking, hate speech, threats of violence*). By Kowert's definition, trash talking is defined as 'putting down or making fun of other players', hate speech is referring to 'insults based on religion, ethnicity, nationality, or other personal information', and threats of violence is present in the context of our study with the aspect that Kowert defines as 'threats of physical abuse'. Further, the toxicity discussed in this paper is limited to verbal toxicity as expressed through the in-game chat and transient actions, meaning that they represent actions that are performed 'in the moment' rather than strategically planned by the toxic player [36].

In League of Legends, Riot Games distinguishes different types of negative and reportable behaviours [60] into the following categories: 1) negative attitude, 2) verbal abuse, 3) leaving the game/AFK, 4) intentional feeding, 5) hate speech, 6) cheating, and 7) offensive or inappropriate name. Following this classification system, our study is concerned with both *verbal abuse* (i.e., 'harassment, offensive language') and *hate speech* (i.e., 'racism, sexism, homophobia, etc.'). Kou [33] further identified five primary types of toxic behaviours in League of Legends, which are 1) communicative aggression, 2) cheating, 3) hostage holding, 4) mediocritizing, and 5) sabotaging. According to this taxonomy, our research is concerned with *communicative aggression*, which according to Kou includes the sub-categories verbal abuse, hate speech, inappropriate names, and 'flaming'. In Kou's classification, *flaming* is defined as 'sending hostile or insulting messages'. This is a common understanding of the term in League of Legends, and differs from the definition of flaming by Kowert [36] (i.e., 'presenting emotionally fueled or contrary statements with an instrumental purpose'). In the context of this paper, when participants use the term 'flaming', we interpreted it in line with the definition by Kou [33].

2.1.3 Prevalence of Online Toxicity and Risk Factors. The prevalence of toxicity in online gaming communities is well evidenced. In a study with 2097 participants [74], 66% of participants reported that they were personally involved in toxic behaviours in the previous year, while 43% reported they had purely been victims of other players' toxicity. The risk to become a victim of such behaviour was higher for players who played MOBA and shooter games. In another recent survey [38], 94% of 377 participants reported that they had experienced trash talking while gaming, 64.3% reported they had experienced hate speech, and 46.8% had experienced violent threats. The numbers were higher when it came to witnessing these behaviours rather than personally experiencing them (98.1% witnessed trash talking, 82.7% witnessed hate speech, and 67.6% witnessed violent threats). An analysis of the battle chat in the tank combat MMO (massively multiplayer online game), World of Tanks (Wargaming), concluded that the most frequently occurring themes of toxicity in that context were: *gamesplaining* (24%; correcting other individuals and explaining aspects of the game

to them), *ableism* (23%; discrimination towards people with disabilities), *male preserve* (15.7%; a space where men depreciate women or other groups without social norm sanctions), and *sarcasm* (14%) [17].

Research has found certain traits that represent risk factors towards engaging in toxic behaviours. Players lower in self-esteem might be at risk of exhibiting more toxic behaviour due to experiencing lower levels of need satisfaction in games [7]. Further, low self-esteem is a risk factor for vulnerability to social rejection [28], and social exclusion can increase hostile cognitions [6]. Age has been found to be associated with negative behaviours, with younger players being more likely to engage in it than older players [31]. One aspect of this is that younger players seem to be more susceptible to accepting toxicity as normal behaviour in games culture [27]. Further, playing with friends and playing in more competitive game modes have been found to be predictive factors of toxicity [22]. In an examination of the mobile Chinese MOBA, Honour of Kings (Tencent Games), Liu and Agur [44] identified player motivations for toxic behaviour (i.e., *shirking responsibility, egocentrism, revenge, emotional catharsis, maintaining interpersonal relationships,* and *monetary rewards*). They further generated three theoretical explanations for how the gaming environment facilitates such behaviour (i.e., *anonymity, reduced cues,* and *thwarting of basic psychological needs*).

2.1.4 Effects of Exposure to Toxicity. While it is important to understand risk factors for toxicity, it is also crucial to understand the impact of toxicity on players. Turning to coping mechanisms for dealing with toxicity, prior work in the context of collegiate esports identified the themes *passive acceptance and avoidance, rationalization* (such as expressing empathy for players who are being toxic), and *retreat* [71]. League of Legends players are not likely to actively report toxic players [39], which may be explained through the *bystander effect* [19]: a phenomenon wherein individuals are less likely to help a victim when others are present. Prior work suggests that other reasons for not reporting toxic content are that it is viewed as *acceptable, typical, or normal* in the context of digital games, as *banter* rather than serious interaction, or as *not their responsibility* to deal with [5]. Multiple researchers have reported such effects of acceptance, normalization, and distancing oneself from toxic behaviours as a result of repeat exposure; pursuant to this, *moral disengagement* is one outcome of exposure to negative behaviour [5]. Moral disengagement occurs when players place the blame for an action onto another authority, thereby feeling a lack of responsibility for their own actions [66]. Page et al. [53] describe how players can become desensitized to toxicity and eventually believe harassment in games to be harmless and acceptable. Experienced players express fatalism about toxicity, declaring that it is a natural outcome of anonymity and inherent to gaming [71]. Long-term players of MOBA games (e.g., Dota 2) are more resilient to the experience of toxicity [42], while new players are more likely to be deterred by toxicity [22].

Despite its normalisation, cyberbullying and other toxic behaviour in the context of competitive online games (such as League of Legends) has been associated with depression and anxiety [39]. Players who are repeatedly victimized by toxicity report more symptoms of depression, while victims who are also perpetrators of toxicity express higher levels of anxiety and anger rumination [74]. Finally, toxicity may be an explanatory factor for reduced well-being experienced among MOBA players [26].

2.2 The Importance of Positive Communication, Teamwork and Fair Play

2.2.1 Communication and Teamwork in Multiplayer Games. While the prevalence and outcomes of toxicity are well studied, there is a dearth of research exploring verbal positivity in the context of games. Given that games like League of Legends are established esports titles, the sporting spirit of most of the players seems to be inherent, expected, or even taken for granted. However, there is some prior work to build on. In a study investigating the nature of temporary teams in League of

Legends, participants acknowledged the importance of social interaction within the game—agreeing that collaboration outweighs individual skill [34]. Participants further reported that they aimed to create a harmonious atmosphere (hoping to proactively influence their teammates), and that praising and supporting teammates was highly important. In a separate study analyzing online teams in World of Warcraft (Blizzard), it was found that early communication (that is, after forming a team with other players) both increases the likelihood of continued communications, and increases group commitment—positively influencing the group atmosphere. [14]. Verbal communication has been identified as the most promising factor for the quality of social interactions in online games [21]. Tan et al. established patterns of low and high cohesion in League of Legends teams and state that high cohesion often include apologies, encouragement, or acknowledgments [69]. The authors conclude that high cohesion is important to team satisfaction regardless of the match outcome.Further to this, in an analysis of 1.9 million League of Legend match chat logs, teams who employed a respectful tone of voice performed better while stressed—and low performing players often indulged in ruder language, potentially inducing a cycle of toxic interaction between players [48, 51]. Researches have urged developers to focus on ways to increase positivity in teams to reduce the risk of toxic behaviour [51]—however, prior work has largely focused on removing the negative aspects of communication.

2.2.2 *Honour and Fair Play in Digital Games.* Contemporary honour systems generally refer to systems that are aimed to incentivize positive behaviour (e.g., [1]). In League of Legends, players can progress in the honour system, earning rewards, by acknowledging teammates as positive players and being acknowledged in kind. Larsson & Johnsson [40] have theoretically analysed how such positive reinforcement through honour systems incentivizes positive behaviour. They include that neither Riot Games (e.g., 'League of Legends', 'Valorant') nor Blizzard Entertainment (e.g., 'World of Warcraft', 'Overwatch') have fully publicly disclosed how players can progress in their honour systems, as a means of protecting it from abuse. The authors further state that incentivizing positive behaviour is achieved through rewarding players for engaging in positive behaviors. However, according to League of Legends' official 'Honor FAQ' [58], players neither need to receive honours nor spread positivity in order to gain honour levels: *"You level up just by playing to win in your games. Show up, don't intentionally work against [your] team, and you'll progress in the coming weeks and months. If your teammates honor you a lot, you'll get a slight bonus in progression and rewards like loading screen flairs.".* Further, the head of the behavioral systems team in League of Legends has recently stated in a video released on the official LoL YouTube channel [41] that 95% of LoL players are 'only' occasionally disruptive, which contributes to 80% of in-game reports. It is not entirely clear how many players receive the highest level in the honour system, however, it is not difficult to rank up in honour and neither active positivity nor receiving honours is required to receive these rewards. Thus, the honour system in League of Legends merely rewards the absence of severe levels of toxicity rather than rewarding helpful communication or positivity. There is not yet (to the knowledge of the authors) any research that has assessed the success of extant honour systems in facilitating positive behavior in games.

Other gaming companies have been more vocal about promoting positivity—for example, EA's *Positive Play program* [72]. However, while the importance of promoting positive play is frequently highlighted by game developers, there do not seem to be any clear steps towards it or actionable ideas on how to achieve it. Instead, companies prioritise communication moderation in an attempt to remove or avoid toxicity—but this is rarely supported by visible or comprehensive initiatives to promote positive communication. This raises the question of whether positivity is assumed to be achieved when toxicity is absent or whether positivity should be characterised as the flourishing of positive communication within a player base.

Fair play or sporting spirit (known also by the term sportsmanship) is a construct often discussed in traditional sports; however, it is relevant to esports as well. Naweed et al. [50] introduce the term *esportsmanship*, offering a classification of what unsportsmanlike behaviour is. They follow the definition of sportsmanship as a 'rule-based system with adherence to a body of written conventions and unwritten local norms shared by athletes, officials and spectators in and around the sport' [47]. Following this classification, fair play in esports often focuses on the absence of negative behaviours rather than on positive behaviours, again showing that neutral is good enough to achieve 'fair play'.

In League of Legends, players are required to agree to the 'code of conduct' before entering a game (Riot Games, [59]). This requires all players to agree to the following terms: 1) compete to win ('*Teamwork wins games. We win with teammates, not in spite of them.*'), 2) respect your teammates ('*Enable your teammates to perform their best by treating them with dignity, trust and respect.*'), 3) protect yourself and your team ('*Use League's tools and your own good judgment to build the community you want to play in.*'), and 4) be your own last line of defense ('*Be responsible with your account, devices, personal information, and conduct.*'). These are the values that Riot Games, in theory, requires their players to play by. In combination with prior work, this raises the question of how many players fully read and understand the code of conduct—or perhaps, what kind of community most players want to play in or what they consider respectful communication.

2.3 Research Question

In this paper, we investigate the question: '*How do League of Legends players perceive positivity and toxicity in the game?*' by examining how League of Legends players respond to both verbal positivity and verbal toxicity. We recruit League of Legends players and present them with several screenshots of either positive or negative in-game interactions. Thus, through two experimental conditions, we prime participants on positive or negative in-game chat messages. We ask participants to rate how representative they perceive the presented conversations to be in the context of gaming. We then employ thematic analysis to generate themes of how League of Legends players respond to the different qualities of verbal communication.

3 METHOD

3.1 Participants

We recruited participants through League of Legends-related social media in German, including Twitter, Facebook, and Instagram, as well as in League of Legends Facebook groups. Participants had the option to participate in a lottery for 5 x 10 Euro in paysafecards (a prepaid online payment method that can be used to obtain *Riot Points*, a currency which can be used to buy cosmetic items in League of Legends). 960 participants completed the experiment; however, one participant was excluded due to implausible responses in demographic data. As there was little financial incentive to participate in the study besides a strong interest in the game and obtaining League of Legends currency, it is not unexpected that there were few uncooperative responses. This resulted in 959 participants (813 men, 144 women, 2 non-binary) with a self-reported average age of 23.11 (SD=4.83) and self-reported average LoL experience: 6.07 years (SD=2.63). Participants reported that they play League of Legends on 5.3 (SD=1.67) days a week. Their self-reported highest achieved ranking (not necessarily their current ranking) in League of Legends was 103 unranked, 6 iron, 29 bronze, 138 silver, 288 gold, 204 platinum, 131 diamond, 18 master, 10 grandmaster, and 3 challenger. This shows that our sample consists of experienced, enthusiastic, and engaged League of Legends players. Different reports suggest that around 12-18% of League of Legends players are women [43, 68, 73] and in our sample, 15% of participants were women. While there is a range of players represented,

including lower and higher ranked, experienced and new players, this sample is more likely to represent 'hardcore players'. For the League of Legends player base, around 18% of players are bronze, 36% silver, 29% gold and 11% platinum [57]. In our sample, roughly 4% self-reported being bronze, 17% silver, 35% gold, and 25% platinum. While there is no guarantee that all self-reports of ranking were truthful, this clearly indicates an above-average League of Legends experience in our sample. When it comes to their current occupation, 467 participants indicated that they were university students, 98 participants self-reported being in high school, 107 were in job training, 243 were working, 24 identified as unemployed, 1 as retired and 19 indicated 'other'.

3.2 Procedure

The study was approved by the Behavioural Ethics Review Board at the University of Saskatchewan. For recruitment, participants were informed that the study was about League of Legends and that we were interested in recruiting both LoL and other MOBA players. Upon commencing participation in the study, participants were then randomly assigned to one of two conditions: one in which they would only see screenshots of positive conversations in a League of Legends match (n=455), and one in which they only saw screenshots of in-game conversations that contained toxic negativity (n=504). We presented a trigger warning, indicating that participants would be seeing hateful and potentially disturbing messages in this study. Participants viewed one screenshot at a time and were asked to rate it on several dimensions (e.g., 'negative', 'funny', 'supportive') before viewing the next, until they had seen all 10 screenshots assigned to their condition. We opted for this experimental, design rather than one in which comments were mixed, in order to highlight either positivity or negativity to participants. This was done to capture clear responses to either type of message based entirely on experimental condition. While a mixed version might have higher face validity, separating conditions clearly is necessary for internal validity and to avoid negativity bias. For good experimental design, screenshots needed to be equally strong and comparable in length for both conditions (e.g., a simple and short 'gg' [good game] would not have been comparable to the severity and length of the presented negative messages). Presenting 10 screenshots per condition allowed for broader representation of different forms of positivity and negativity. A neutral outcome expectation (if positivity and negativity are both equally prevalent in MOBA games) is that both groups would acknowledge the existence of such messages and highlight that they do not reflect the full spectrum of chat messages because there is another (either more positive or more negative) side to it.

Following exposure to the full set of 10 screenshots, participants were first asked to indicate how representative they thought these screenshots were for League of Legends on a 7-pt Likert scale from 1 ('not representative at all') to 7 ('very representative') for a quantitative comparison of chat log representativeness between the conditions. Participants were then presented with three open questions about the screenshots they viewed:

- Question 1: What are your thoughts regarding the messages and conversations that you have just seen?
  (280 comments written in the positive and 332 comments in the toxicity condition).
- Question 2: How representative would you say these messages and conversations are in the context of gaming? *(240 comments written in the positive and 309 comments in the toxicity condition).*
- Question 3: How likely would you say is it that you would keep playing a game if you were confronted with such messages? *(175 comments written in the positive and 314 comments in the toxicity condition).*

Responses were limited to 100 characters for each question; 758 participants (n=348 in the positive and n=410 in the toxicity condition) left a comment for at least one of the three questions, and were included in the thematic analysis. Finally, participants were asked about their League of Legends experience, gaming experience, and demographics. The experiment was then concluded. Most participants took between 20 and 30 minutes to complete the survey.

3.3 Measures & Material

3.3.1 Screenshots & Ratings. Participants were presented with 10 screenshots in each condition. One example for a message presented on a screenshot in the positivity condition is: "*That was one great experience! Learned a lot from this game, thanks team.*" One example for a message presented on a screenshot in the toxicity condition was: "*Come on, are you mentally disabled? You are playing so bad, it's insane. You fucking ape*". These chat logs were reviewed and selected by an elite League of Legends esports athlete, who is a collaborator of the first author. The aforementioned chat logs were either found online, or were generated while playing the game. Under the guidance that the messages should accurately reflect typical and realistic chat communications, the athlete reviewed and supplied chat logs generated from their own experiences. These comments were then secondarily reviewed by the first author to ensure appropriate fit for the experimental design. All comments can be seen in our supplementary materials. A manipulation check was added to ensure that participants perceived the screenshots in the positivity condition to be more positive, supportive, harmless, and friendly, as well as less negative and offensive than the screenshots selected for the negativity condition. For each screenshot, participants were asked to: "*please rate the conversation of the players above on the dimensions below.*" The dimensions were *neutral, negative, funny, harmless, friendly, sarcastic, supportive, offensive,* and *positive*, and were rated on a 5-pt Likert scale (1= 'not at all', 5 = 'very'). This was done as a manipulation check and descriptive statistics are presented in Table 1. Nine t-tests for the manipulation check show that the comments in the positivity condition were rated as significantly more positive ($t_{957} = -104.23, p < .001.$), supportive ($t_{957} = -82.92, p < .001.$), friendly ($t_{957} = -99.88, p < .001.$), harmless ($t_{957} = -50.08, p < .001.$), funny ($t_{957} = -5.25, p < .001.$), and neutral ($t_{957} = -22.34, p < .001.$). The comments in the toxicity condition were rated as significantly more negative ($t_{957} = 98.54, p < .001.$) and offensive ($t_{957} = 85.2, p < .001.$). There was no significant difference between screenshot ratings as sarcastic ($t_{957} = -.62, p = .28.$).

3.3.2 Gaming Experience and Demographics. Gaming experience was measured with the following items: for League of Legends experience, participants were asked to *"indicate how much experience you have with League of Legends and/or other MOBAs (Multiplayer Online Battle Arena games)"* on a 6-pt scale (1 = 'no experience at all', to 6 = 'a lot of experience'). Participants were further asked how often they play LoL each week (on average), when they first started to play and, if applicable, when they quit the game. They were then asked to indicate the highest ranking they reached in League of Legends, and how often they play video games in general. For demographics, participants were asked to indicate their age, gender, education, and occupation.

3.4 Thematic Coding

We conducted an inductive thematic analysis following Braun and Clarke [10]. Our study prompted participants to respond to three questions querying their assessment of the presented League of Legends screenshots: specifically, their general appraisal of the screenshots' content ("*What are your thoughts regarding the messages and conversations that you have just seen?*"), how representative they felt the content was ("*How representative would you say these messages and conversations are in the context of gaming?*"), and how said content might hypothetically influence their continued playing

Table 1. Descriptive statistics for participant ratings of the ten positive and ten negative screenshots. Minimum and Maximum values represent the lowest and highest means for a single participant across all 10 screenshots they were presented with.

	Positivity Condition (n=455)				Toxicity Condition (n=504)			
	Mean	*SD*	*Min*	*Max*	*Mean*	*SD*	*Min*	*Max*
Positive	4.1	0.5	2.3	5.0	1.4	0.3	1.0	5.0
Negative	1.6	0.4	1.0	3.4	4.2	0.4	1.0	4.9
Supportive	3.8	0.6	1.0	5.0	1.3	0.3	1.0	5.0
Friendly	4.1	0.5	2.1	5.0	1.5	0.3	1.0	5.0
Neutral	2.5	0.8	1.0	5.0	1.5	0.4	1.0	5.0
Harmless	4.2	0.6	1.4	5.0	2.1	0.7	1.0	5.0
Funny	2.0	0.6	1.0	4.1	1.8	0.6	1.0	5.0
Sarcastic	2.0	0.5	1.0	4.4	2.0	0.5	1.0	5.0
Insulting	1.4	0.4	1.0	3.4	3.9	0.5	1.0	4.8

habits ("*How likely would you say is it that you would keep playing a game if you were confronted with such messages?*"). The objective of the thematic analysis was to identify themes in the perception of positivity and toxicity in online gaming interactions, as informed by the participants' prior experiences in online gaming.

Prior to coding, both the first and second author familiarised themselves with the dataset collected. To ensure consensus between raters, both authors then undertook an initial coding of 10% of the data to independently identify consistent themes; following this, both authors met and reviewed the initial themes, and collaboratively developed a coding structure that incorporated said themes. The authors then re-coded the original 10% of the data against the new codebook to ensure consistency. The first author then coded the full set of the data using a constant comparative analysis approach [10], generating both latent (i.e., interpreting the participants' intended meaning) and semantic (i.e., the participants' words, verbatim) codes. The final themes were not exclusive, as codes could contribute to multiple themes simultaneously; however, only one sub-theme per theme was coded for each comment. The coded comments were originally written in German, but have been translated to English by the first and second authors for dissemination purposes.

3.4.1 Positionality Statement. All authors possess a background in games user research, and have undertaken previous scholarship in the context of online competitive gaming (and, specifically, in the examination of player behaviours within these spaces). The first, second, and third author each have prior experience playing League of Legends; the first remains an active player of the game's ranked and unranked modes, with over 1000 ranked games played since 2011. All members of the author team have prior experience playing online competitive titles in general. As such, the authors have examined and interpreted the findings described within this work through the lens of both game academics and players, more broadly, and members of the League of Legends community, more specifically.

3.5 Quantitative Analysis

In addition to the thematic analysis, we use a t-test to compare the scale ratings of chat log representativity between the positive and toxicity condition and we use seven Chi-Square tests to investigate significant differences in how often each theme was mentioned in the two conditions. All analyses were performed with IBM SPSS Statistics 28.

4 RESULTS

4.1 Quantitative Analysis

An independent-samples t-test comparison was performed between the positivity condition (wherein participants were confronted with only positive chat logs) and the toxicity condition (wherein participants were confronted with only negative chat logs), asking participants to rate how representative the chat logs they saw were for League of Legends. The analysis revealed that participants in the toxicity condition rated the chat logs as significantly more representative for League of Legends than participants in the positivity condition ($t_{949} = 26.8, p < .001$; positive condition mean=2.6; negative condition mean=5.1 on a scale from 1='not representative at all' to 7='very representative').

4.2 Results of Thematic Analysis

Here we present the themes generated from the thematic analysis. We organize their presentation by theme, showing examples from both the positivity and toxicity conditions. Summaries of the thematic analysis can be seen in Table 3-7. Quotes are characterized by the participant number (e.g., P891), their self-identified gender (e.g., woman), their age (e.g., 18 yrs), and their number of years playing League of Legends (e.g., 5 yrs LoL).

4.2.1 Normalize. "Many statements are a part of pop culture, that is normal in LoL." (P186, man, 26 yrs, 8 yrs LoL)

Within this theme, we included comments expressing that the chatlog content was normal, was part of gaming culture, or was funny. Further, we included when participants expressed that they do not care what others say or that they are desensitized to these types of messages. (See Table 3.)

Prevalence of the Normalize Theme. Only 7 of 348 participants in the positivity condition said positive behaviour was normal in League of Legends, meaning that they stated that it was either common and typical or did not matter. In contrast, 109 of 409 participants in the toxic chat logs condition expressed that toxicity in League was normal. A Chi-square test comparing how often the acceptance or normalization theme was mentioned in each condition revealed that toxicity was more likely to be normalized by League of Legends players than positivity (χ^2=87.97, p<.001).

4.2.2 Acknowledge. "At least every 2nd game has at least one statement of such type." (P193, man, 19 yrs, 5 yrs LoL)

Within this theme, we included comments that emphasized the nature of the message or that marked it as representative, whether or not it was described as limited in its perspective. Unlike normalize, noting that toxicity was representative in this theme did not express it in a way that displayed the behaviour as acceptable (typical of normalizing comments). Within acknowledge, the emphasis was on underlining the tone of the messages or admitting their prevalence. (See Table ??.)

Prevalence of the Acknowledge Theme. In the positivity condition, 117 of 348 participants did acknowledge the positive nature of the messages; however, in the toxicity condition, 336 of 409 participants acknowledged the messages as negative or prevalent. A Chi-square test revealed that toxicity was more likely to be acknowledged than positivity (χ^2=184.27, p<.001).

Table 2. Frequencies and examples of **normalize theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Normalize	**2.0%**	**7**		**26.7%**	**109**	
It is normal	0.9%	3	*"Well insults are normal in LoL, but so is praise."* (P891, man, 18 yrs, 5 yrs LoL)	10.8%	44	*"Very normal chats that I think every League player has experienced."* (P615, man, 22 yrs, 7 yrs LoL)
Gaming culture	0.0%	0	n/a	1.7%	7	*"There is always a special communication style in a video game, which makes it hard for externals to interpret how something was meant. Yet this makes it hard for most new, sensitive, or mentally unstable people."* (P64, man, 26 yrs, 8 yrs LoL); *"I think that the conversation should always be seen in comparison, and we cannot ignore linguistic change. Statements like 'fckin Noob' are harmless when compared to racist or discriminating statements."* (P92, man, 19 yrs, 5 yrs LoL)
Do not care	1.1%	4	*"In the end I don't care what statements and conversations I encounter."* (P282, man, 22 yrs, 10 yrs LoL)	2.2%	9	*"Everyday things. Most of them (actually all of them) do not affect how me or my teammates feel. It's rather amusing."* (P648, man, 19 yrs, 7 yrs LoL)
I am desensitized	0.0%	0	n/a	6.6%	27	*"Because we are confronted with such statements every day, we get desensitized and can't take them seriously anymore."* (P58, man, 20 yrs, 7 yrs LoL)
Messages are funny	0.0%	0	n/a	5.4%	22	*"Sometimes it's even funny like, for example the statement 'u fucking ape' makes me laugh again and again"* (P565, man, 21 yrs, 7 yrs LoL)

Table 3. Frequencies and examples of **normalize theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Achnowledge	**33.6%**	**117**		**82.6%**	**336**	
Emphasizing nature	22.1%	77	*"Overall the statements were very positive. Certainly, these statements could be interpreted in a different way in the context of the game, but on their own they were pretty positive."* (P581, woman, 25 yrs, 1 yr LoL)	13.9%	57	*"Some statements were awful/racist. You can find these especially in competitive games."* (P182, man, 24 yrs, 10 yrs LoL)
It's representative	1.1%	4	*"I have experienced similar things in many games."* (P616, man, 28 yrs, 5 yrs LoL)	35.5%	145	*"Sadly these are all sentences that you are constantly confronted with when playing LoL. It takes the fun of the game away."* (P684, woman, 27 yrs, 5 yrs LoL)
It's true but one-sided	10.3%	36	*"Of course I had nice teammates before. But more than a 'sorry mb', 'np just play safe' is normally not happening"* (P918, woman, 20 yrs, 3 yrs LoL)	32.8%	134	*"It differs from match to match. If you win the overall mood is mostly positive and often the mood is only this bad in ranked games."* (P673, man, 20 yrs, 6 yrs LoL)

4.2.3 Downplay. "Without context some of these statements could be either positive or negative and it is hard to judge what the player meant exactly." (P817, woman, 25 yrs, 6 yrs LoL); "Terrifying. It happens but, in my opinion, just rarely." (P960, man, 23 yrs, 5 yrs LoL).

Comments in this theme included those that characterized the chat logs as not representative, or that noted they existed, but as a rare minority. Further, we included comments in which participants characterized the chats as fake or sarcastic in nature, that noted the commenter didn't really mean it, or that said more context was necessary to interpret the messages. Finally, if participants dismissed toxicity by attributing it to only young players, we included those here. (See Table 4.)

Prevalence of the Downplay Theme. In the positivity condition, 303 of 348 participants downplayed the positivity, whereas only 74 of 409 participants downplayed the messages in the toxicity condition. A Chi-square test showed that positivity was more likely to be downplayed than toxicity (χ^2=357.83, p<.001).

Table 4. Frequencies and examples of **downplay theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Downplay	**87.1%**	**303**		**18.1%**	**74**	
Not representative	30.2%	105	*"Since almost all statements were positive, they likely never happened. I have not seen anything like this in my 4 years LoL except maybe in a troll chat."* (P133, woman, 20 yrs, 4 yrs LoL)	1.0%	4	*"I think that especially the racist and very offensive statements are not representative, as I have never read any like this. Smaller insults such as 'you are trash' and so on do happen frequently."* (P326, man, 24 yrs, 9 yrs LoL)
This is a rare minority	29.3%	102	*"The presented conversations are relatively rare. In the normal course of a game, especially during peak hours (weekends, afternoons, evenings) negative comments, emotions, and impressions predominate."* (P29, man, 21 yrs, 7 yrs LoL)	7.8%	32	*"There are individuals who are like that, but this is definitely not a majority. Most people are reasonable."* (P339, woman, 18 yrs, 4 yrs LoL)
Messages are fake/sarcasm	19.0%	66	*"When it comes to League of Legends, I rarely saw such positive dialogues in the chat. Normally (in-game) I would suspect sarcasm underlying such friendly comments. Maybe I just saw a nice selection of positive comments"* (P296, man, 35 yrs, 7 yrs LoL); *"Well in the beginning of the game it can happen that everyone wishes a good game and fun (gl hf) ['good luck have fun'] but in my opinion that is often to be understood as sarcasm"* (P99, man, 21 yrs, 4 yrs LoL)	4.6%	19	*"In some messages we can assume a certain bit of sarcasm or an 'everything as usual so everything is normal here'."* (P238, woman, 27 yrs, 6 yrs LoL); *"Many statements are sarcastic and can be understood as humour. But when it comes to insults regarding skin colour, religion, family background, or suicide, you can trigger others.* (P756, woman, 23 yrs, 1 yr LoL)
They don't mean it	2.0%	7	*"Some of the statements have a slight passively-aggressive touch."* (P229, man, 19 yrs, 6 yrs LoL)	1.2%	5	*"The question is how seriously we have to take these statements because it's still an online game and people get angry in there pretty quickly."* (P690, man, 23 yrs, 8 yrs LoL)
Need more context	6.6%	23	*"The context was missing. When you are losing the game, a troll can write positive things like these to attack others through sarcasm."* (P831 man 23 yrs, 1 yr LoL)	1.2%	5	*"Hard to judge because I don't know the context; was it in a ranked game or a normal game? League of Legends has such a toxic community that we often can't differentiate between offensive and sarcastic messages."* (P276, man, 23 yrs, 10 yrs LoL)
Only young players	0.0%	0	n/a	2.2%	9	*"There are sadly many people like that. I believe this is mostly due to the really young players. My experience is that players get more relaxed and less toxic with age."* (P776, man, 23 yrs, 6 yrs LoL)

4.2.4 Cope. "/mute all" (P35, P168, P299, P334, P481, P579, P615, P679, P713, P775, and P831)

Many participants volunteered methods that they personally use to cope with the kinds of messages that were presented, particularly in the toxicity condition. We included sub-themes related to quitting, muting/ignoring/reporting, playing with friends, arguing, rationalizing/excusing, or to respond with kindness. (See Table 5.)

Prevalence of the Cope Theme. Even though we would not have expected many mentions of coping mechanisms in the condition in which only positive chat logs were presented, 49 out of 348 participants mentioned one; however, these were mainly referring to how players cope with the reality of chat, rather than what they observed in the positive condition. However, in comparison, 236 out of 409 participants in the toxicity condition mentioned a form of coping mechanism, making it far more likely for participants to mention coping after being confronted with toxicity (χ^2=150.2, p<.001).

Table 5. Frequencies and examples of **cope theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Cope	14.4%	49		57.7%	236	
Quitting	2.9%	10	*"Would the majority of League of Legends players interact like that I would probably still play the game. I quit because the game actually wasn't good for me mentally."* (P614, woman, 23 yrs, 5 yrs LoL)	4.9%	20	*"For me personally such communities are a no-go. I am too old at this point to get insulted on the internet. I was an active LoL player myself until I could no longer endure the atmosphere of the game."* (P807, man, 27 yrs, 4 yrs LoL)
Mute/ignore/report	7.5%	26	*"As long as I find a game fun, I play it. No matter how salty a team is. Luckily there is the mute option."* (P748, man, 28 yrs, 10 yrs LoL)	40.3%	165	*"All functions for social interaction are being blocked by me. This is the only way games like League of Legends or, even worse, Valorant can be endured. No matter if voice or text chat, I turn everything off."* (P390, man, 24 yrs, 10 yrs LoL); *"I started playing again after 2 years and I can only keep playing when I mute everything (pings, chat, emotes)."* (P425, woman, 20 yrs, 7 yrs LoL)
Mentioning friends	2.6%	9	*"LoL, in my opinion, is pretty toxic when it comes to strangers. Such messages you are more likely to find when you are playing with friends."* (P745, man, 21 yrs, 8 yrs LoL)	7.8%	32	*"I have never experienced a toxic community on my own, it is really terrible. But you just accept it. Therefore, only play with friends and if you are alone once then just wish everyone good luck and then directly /mute all."* (P324, man, 23 yrs, 6 yrs LoL)
Fight back/argue	0.0%	0	n/a	0.5%	2	*"Typical League of Legends, every other player only flames and doesn't offer constructive criticism. As soon as you say something yourself you become the scapegoat and get insulted."* (P518, man 21 yrs, 10 yrs LoL)
Explicit rationalizing	0.0%	0	n/a	3.7%	15	*"The combination of anonymity, a competitive environment, and a certain dependence on a team that the player is unfamiliar with quickly results in frustration. [...] Of course, such statements are always unpleasant, but you need to keep in mind that on the other side of the keyboard there might be sitting someone who is unable to evaluate their own behaviour or who is currently feeling bad and therefore acts irrationally."* (P894, man, 20 yrs, 6 yrs LoL)
Be a good person	1.1%	4	*"I try to have exactly that type of conversation. I try to turn bad games through motivation. In my opinion everyone can have a bad game sometimes."* (P758, man, 25 yrs, 10 yrs LoL)	0.5%	2	*"Sadly you meet toxic people often in video games, especially League of Legends. When I encounter these, I try to react to them with pure kindness to show them how wrong their behaviour is and expose them."* (P235, man, 20 yrs, 7 yrs LoL)

4.2.5 Blame. "There are initiatives against exactly those people (mute/report) and not everyone in the game releases their frustration through insults in the chat and just because it happens in the game that does not mean that the game and everything around it is bad." (P564, man, 19 yrs, 3 yrs LoL)

In this theme, we categorized comments related to either whether the game itself should not be blamed or should be blamed, that developers are to blame, or that victims are to blame. We further saw unsolicited advice given to those affected by messages, primarily related to the toxic content. (See Table 6.)

Prevalence of the Blame Theme. 9 of 348 participants discussed who or what is or is not responsible for negativity after being confronted with only positivity, and most of these were related to their experience of negativity in play, not as a result of the messages in our experiment. In the toxic condition, 63 out of 409 participants mentioned some form of blame or responsibility. A Chi-square test shows that placing blame was more likely in the toxicity condition (χ^2=35.89, p<.001).

Table 6. Frequencies and examples of **blame theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Blame	**2.6%**	**9**		**15.4%**	**63**	
The game is not to blame	2.0%	7	*"I do not judge League of Legends depending on the chat, I judge the game and I find liking in it. Therefore, I always play without chat in-game and report negative hate messages before and after [the game]."* (P576, man, 21 yrs, 7 yrs LoL)	5.1%	21	*This is not about the insults, it's about the game. When the game is good, I keep playing it especially since the game allows me to mute the chat and punish these players."* (P693, woman, 23 yrs, 7 yrs LoL)
The game is to blame	0.0%	0	n/a	0.7%	3	*"It's definitely not like that everywhere. League has a high potential for frustration."* (P776, woman, 23 yrs, 7 yrs LoL)
Victim blaming	0.0%	0	n/a	2.7%	11	*"Such chat logs are normal in League of Legends. If you feel offended by them it's your fault."* (P300, man, 18 yrs, 1 yr LoL)
Unsolicited advice	0.3%	1	*"You shouldn't praise anyone too much in League as they either suspect sarcasm or the praised person then tries to get more praise and starts making reckless decisions."* (P508, man, 21 yrs, 5 yrs LoL)	3.2%	13	*"It is very important, especially in League, to be able to ignore such statements to keep having fun, which I luckily am able to do now. Everyone who is not able to do this I would advise to quit the game."* (P245, man, 19 yrs, 6 yrs LoL); *"Whoever feels offended in a game in which a person is hidden behind a character should simply use the mute option."* (P587, man, 20 yrs, 8 yrs LoL).
Blaming developers	0.3%	1	*"More praise absolutely helps the game. Most game developers, however, do too little to create such a positive atmosphere (although it is definitely not easy to do)."* (P22, man, 21 yrs, 9 yrs LoL)	3.7%	15	*"Sadly this is everyday life in LoL. Riot does way too little to take action against such people in my opinion. You can sadly only play LoL if you disable the chat."* (P443, man, 24 yrs, 7 yrs LoL); *"It makes me angry because such statements don't have any consequences (except if you use certain trigger words)."* (P272, man, 20 yrs, 5 yrs LoL)

4.2.6 Make Personal. "I would even play solo more often if I had the opinion that not everyone would be tilting away after a bad play." (P734, man, 21 yrs, 5 yrs LoL)

The final theme identified players relating the screenshots to their own experiences or playstyle. We observed comments that explicitly self-identified as having such conversations, that identified as opposite to the messages, that discussed how they themselves are affected, that were wishful in nature, self-reflective, that provided examples of their own exposure to such comments, or that mentioned being discriminated against in League of Legends. (See Table 7.)

Prevalence of the Make Personal Theme. 108 out of 348 participants made a personal comment in the positivity condition, while 55 out of 409 participants made a personal comment in the toxicity condition. Participants were more likely to talk about their own behaviour, feelings, and experiences in the positivity condition (χ^2=34.42, p<.001).

Table 7. Frequencies and examples of **make personal theme** for positivity and toxicity conditions.

Theme and sub-themes	Positivity Condition: N = 348			Toxicity Condition: N = 409		
	%	N	Example Comments	%	N	Example Comments
Make Personal	**31.0%**	**108**		**13.4%**	**55**	
Self-identification	2.0%	7	*"I wish League was like these conversations. Such things I either write myself or maybe one other person in one out of a hundred games."* (P327, woman, 19 yrs, 5 yrs LoL)	0.5%	2	*"Sadly there are many insults among gamers. I cannot completely exclude myself from that."* (P321, man, 21 yrs, 6 yrs LoL)
Not who I am	0.3%	1	*"Mostly it's flaming. And I'm also one of the flamers."* (P377, man, 26 yrs, 3 yrs LoL)	0.2%	1	*"The game on its own is amazing. The community not so much... But there are also good people (like me) who give tips and write 'np [no problem] happens' when mistakes are made."* (P472, man, 17 yrs, 3 yrs LoL)
I am affected	15.8%	55	*"Positive statements always make me a little happy. That motivates me to keep playing."* (P578, woman, 24 yrs, 3 yrs LoL)	9.3%	38	*"Some statements hurt when reading them because I have experienced them before and felt bad afterwards. Old feelings of self-hatred come up."* (P425, woman, 20 yrs, 5 yrs LoL)
Wishful	9.8%	34	*"Hardly any of the presented conversations would unfold like that in a game. I wish that was the overall mode of communication."* (P123, man, 19 yrs, 3 yrs LoL)	0.7%	3	*"It actually hurts to read these statements and having seen all of it in-game already. It is so pointless how people attack each other in a GAME."* (P156, woman, 24 yrs, 6 yrs LoL)
Self-reflective	0.6	2	*"Very friendly chats mostly and therefore also only slightly representative of chats that I've seen in my matches more often. However, they are a nice way to illustrate how to communicate friendly and respectfully with each other."* (P271, man, 23 yrs, 6 yrs LoL)	0.0%	0	n/a
Personal experiences	1.1%	4	*"A joke in comparison to real chat logs. LoL is the game with the most toxic community in existence. If you ask someone for help, the chance to hear an "off yourself" is higher than a "yes omw [on my way]."* (P542, man, 21 yrs, 7 yrs LoL)	1.5%	6	*"In comparison to the things I experienced in League the selection of conversations was on the one hand unproportionally negative but in terms of quality it was also by far not the worst that I have seen in this game."* (P419, man, 27 yrs, 9 yrs LoL)
Mentioning discrimination	0.6%	2	*"If we win a match clearly, most players are friendly. But it depends also on whether there is a sexist in the lobby (especially for female players like me)."* (P105, woman, 20 yrs, <1 yr LoL)	1.2%	5	*"I am a woman, simply because of that I need to live with these comments in these times. I love to play, I love online games, but I am also aware that as a woman I have a very bad status in this community."* (P510, woman, 28 yrs, 5 yrs LoL)

4.2.7 Uncategorized Comments. The number of unique comments containing additional topics that could not directly be categorized into one of the six themes did not differ between conditions (χ^2=1.07, p<.30). There were 45 of 384 participants (12.9%) in the positivity condition and 43 of 409 participants (10.5%) in the toxicity condition who made comments that raised a theme without sufficient prevalence or content to be included in our results. These included hate speech, but mostly comments that were unrelated to the generated themes (e.g., mentioning own ranking). For example, the comment: *"The social aspect of the game got continuously worse since some point 4-5 years ago. The toxicity in games has increased since a couple of years ago. Nobody wishes the other well. Instead of sharing tips and suggestions for improving, people only exchange insults."* (P390, man, 24 yrs, 10 yrs LoL) contained a theme of things changing over time, but this was not part of our generated themes or sub-themes. Not all unique comments were unrelated to themes or sub-themes but sometimes added more nuance that may be relevant for future work. For example, comments that described positive messages as uncomfortable or cringe were mostly coded in the 'downplay' category but also contained a nuance of the messages just 'feeling wrong' (P499, man, 20 yrs, 6 yrs LoL: *"Rarely do people write such a thing. Often it feels cringy and fake."*; P336, man, 21 yrs, 6 yrs LoL:*"I almost find it rather uncomfortable to read such positive messages. It is not what I am used to and it doesn't feel right."*). Similarly, stating that players who are friendly at first are not to be trusted was coded as *downplay-fake/sarcasm*, but one comment added a nuance of 'talkative friendly players being likely to become toxic' (e.g., P9, man, 26 yrs, 7 yrs LoL: *"Good luck, have fun and let's win this game! Players who write that in the beginning of the match were most of the time very toxic and negative as soon as there was the smallest of mistake."*). Other types of comments added

additional or unexpected reasoning for their own categorization. For example, one participant explained that their reason for rejecting toxicity as 'not representative' for LoL was out of fear that gaming would be further stigmatized in the German media: *"Not representative because the media will start the video game debate all over again because of such statements."* (P147, woman, 28 yrs, 7 yrs LoL). Another participant commented on using the mute option to cope by implying that it requires an action from the victim, which is not always taken: *"We should mute the chat but then often we don't do that"* (P588, woman, 26 yrs, 9 yrs LoL). More examples for comments that were not discussed within themes are presented in our supplementary material.

5 DISCUSSION

5.1 Contributions

In this study, we highlight that not only do gaming communities often suffer from an abundance of toxicity, but they might also be affected by a perceived lack of positive interactions. This may, in turn, limit the benefits of social play—such as the satisfaction of the need to belong, building of social capital, and combating experiences of loneliness (e.g., [16]). In doing so, we highlight that common strategies to combat toxicity can have the side-effect of also reducing positive interactions. We build on prior work around online toxicity, but our work adds novel contributions that are important for designers of game communities, games, and tournaments who aim for more positive play spaces. For example, previous work has highlighted small sample sizes as a limitation; in contrast, our comparatively large sample size represents a generalisable perspective from the broader player base—and does not focus on one specific player group (e.g., esports athletes). This sample further adds a European perspective to previous work that identified similar themes of comments from North American [5] and Australian [71] participants. Our study further differs from previous work by adding two experimental conditions, which primed participants on either positivity or negativity to capture responses to specific messages. This way all participants respond to the same extent or severity of toxicity (and positivity), which allows us to estimate of how far normalization (and downplay) extends. Responses from different participants are thus more comparable, as they were prompted with the same screenshots rather than being asked to respond based on their various personal experiences in the game. We further highlight for the first time that competitive sporting spirit and toxicity are not perceived by players to co-exist on an equal level, but rather that positivity was described by most participants as rare, fake, or even completely absent from League of Legends. Finally, our thematic analysis of participant comments suggests *why* positivity is considered as rare while toxicity remains prevalent: according to the participants in our study, positive messages are often reduced to short interactions and emotes, or are interpreted as inauthentic or sarcasm. Many players mute the chat before the game even starts and thus deprive themselves of both positive and negative chat experiences.

5.2 The Rejection of Positive Chat Messages

Perhaps one of our most compelling findings was that, while League of Legends players readily acknowledge negativity, such reception does not likewise extend to expressions of positivity. Broadly, while negative messages were easily interpreted at face value (i.e., as abusive or hostile messaging), this same charity in interpretation was not granted for positive messages—with participants instead erring towards skepticism, indicating that the messages were sarcastic, unrealistic, or otherwise inauthentic. To this end, only one in five participants in the positivity condition acknowledged the messages as genuinely positive. This was particularly noteworthy in face of the experiment design, in which it was critical that the chat logs were informed by genuine play experiences. However,

regardless of the skepticism, the manipulation check did show that the messages in the positivity condition were perceived as far more positive than the messages in the negativity condition.

We also note that, despite having recently been exposed to positive messaging throughout the positivity condition, a notable percentage of participants insisted that positive interactions in League of Legends were either an extreme rarity, or simply did not occur. When positive interactions were acknowledged as positive, this in turn was occasionally viewed as undesirable—with some participants stating that the positive messages felt 'wrong' or 'alien', or otherwise made them uncomfortable.

Furthermore, multiple participants warned of positivity in different ways: such as mentioning that initially positive players often become toxic later in a game, or that praising teammates could make them lose focus. These subjective player perceptions are not compatible with research findings, which showed that positive communication improves teamwork and team success [14, 51]. We speculate that this unfavourable assessment of positive interactions may further propel the normalization of toxicity [5, 71], by 'othering' positive messages as insidious, disingenuous, or actively harmful to performance—in comparison to toxic interactions, which may be perceived as more authentic within the paradigms of community standards and expectations.

In sum, both the denial of and hesitance towards positive interactions demonstrates how carefully League of Legends players tread when confronted with kindness—and how little many players trust their own community even while hoping for more positive interactions. These findings contrast with Kou and Gui's 2014 study [34], wherein multiple participants stated that they aimed to create a positive atmosphere in their League of Legends matches. As some participants in our study mentioned that the community changed over time (see unique comments section and supplementary materials), it is possible that standards regarding communication (such as wishing others fun and good luck [39]) have indeed changed, becoming rare over the last decade. Alternatively, it may be that while players do not perceive inauthenticity in their own contributions to positivity, they interpret others' inputs with skepticism or cynicism.

League of Legends is one of the leading—and most influential—games in the esports sector. Following its prominence in professional-level play, it might be expected that fair play would represent an important and valued aspect of the community; however, our results suggest that the community is instead skeptical of positivity and team spirit. Considering League of Legends's cultural sway, this finding holds concerning implications for the reception of positive behaviors in other esports communities.

The industry is not unaware of this issue. Within League of Legends, Riot Games has undertaken development efforts that attempt to highlight positive behaviour, such as the honour system [58]. This system currently allows players to acknowledge a teammate as excelling in one of the following three designations: *Leadership/Strategy, Tilt-Proof/Chill,* or *Team Player/Friendly.* If one player receives honour from at least three teammates on their team, a message that this player was the most honourable player on their team is displayed in the chat. Players can advance in the honour system and will receive rewards for their progress. Further, progress is reset whenever a player receives punishment for bad behaviour. However, despite the theoretical relevance of the honour system for promoting positive behaviours, the system went *entirely unmentioned by participants in our study*—potentially indicating that participants do not closely associate the honour system with positive interactions. This is relevant because many participants mentioned tools to combat toxicity, but not a single participant (out of 757 who left comments) thought that the system was noteworthy when it comes to promoting positivity or combating toxicity. This indicates that it is likely not meeting expectations, and more research is needed to test the assumption that honour systems are the best approach to promote positivity.

Further, Riot Games has introduced emotes that players can buy or earn through play, which allow them to express themselves without participating in chat. One default and free emote is that of a 'thumbs up'. In contrast to the honour system, this system was mentioned by a few participants as one of the most prevalent ways that positivity is currently expressed in the game—along with brief chat messages such as 'gj' [good job]. While it is encouraging that there are simple ways to express positive sentiments, it is concerning that players feel that expressions of positivity are limited to these interaction modalities. Further, that a few participants indicated as a coping strategy that they muted not just the chat but also emotes and 'pings' (a quick communication method in the game) shows how such systems have the potential to be abused to irritate or taunt players rather than communicate in helpful ways. What was equally noticeable in our sample was that few players identify with positive behaviour themselves and equally few mentioned positivity as a coping mechanism to fight toxicity. While participants may have omitted this out of humility, these findings are in line with previous work showing that few players stand up for others—especially strangers—who are being targeted [71]. Instead, players are more likely to mute or ignore the toxicity than they are to openly take a stand against it. As one participant suggested: if you speak up, you are likely to become the next target (see Table 7).

Overall, our study demonstrates a general distrust towards (and rejection of) positive messaging in League of Legends communications. This hesitation to acknowledge positive interactions stems from suspicion, skepticism, anticipation of toxicity, denial, and discomfort—and appears to be generally sourced from a lack of faith in the League of Legends community. While notable development efforts have been made towards attempting to both curtail negative behaviours and highlight positive behaviours, the success of such efforts have largely been limited. Despite this, players do report an openness towards future interventions or tools that developers may introduce to improve community interactions—and a quarter of participants voluntarily expressed a desire for a more positive or friendly community despite not being prompted towards this sentiment. Our data shows that the first step towards introducing more positivity should be to find ways to foster an environment in which authentic messages of positivity are interpreted as intended. When players believe a positive message to be sarcasm, then they might also not be inclined to honour positive players for their efforts. Conversely, players can be discouraged from expressing positivity at all, when they perceive that it will not only go unrecognized, but also might be easily misunderstood or could even result in them attracting negative attention.

5.3 Acknowledging, Normalizing and Coping with Hateful Chat Messages

In line with prior work (e.g., [5, 53]), we find that normalization of toxicity is common; however, acknowledging the negativity for what it was, or how prevalent it is in gaming, was more common in this sample than normalizing or celebrating it was. Given how few participants recognized the positive comments as positive, the contrast with recognizing and acknowledging toxicity suggests that players are aware of the prevalence of toxic chat and its harmful effects on the gaming community. However, participants who did brush the toxic messages off as simply 'mild' or 'funny' clearly show what some players consider to be mild language when addressing other players within the game (e.g., "u fucking ape", "fckin noob" and "you are trash"). This highlights that some insults are seen as unimportant because they are not among the most severe. Prior work has suggested that negative messages are normalized in part because they are rationalized as banter or typical of gaming [5, 53], and our findings demonstrate how the line between banter and hate speech seems blurred for a significant proportion of the game's community. That more than one in four participants volunteered a comment that normalized these toxic messages—which clearly crossed the line from banter into blatant racism, ableism, and antisemitism (see supplementary materials)— suggests how insidious hate speech is within League of Legends and how discriminatory insults

continue to be rationalized as part of the game's culture. A recent report by the Antidefamation League (ADL) shows that language previously only used by hate groups (in particular, white nationalistic groups) has permeated—and become 'normal' within—gaming [2, 37]. Indeed, multiple participants did not limit their comments to League of Legends, mentioning other examples of games with toxic communities, such as Counter Strike or other shooters and MOBA games. When it comes to discrimination, participants mentioned sexism as a prevalent topic multiple times, even though it was not prompted and none of the presented chats displayed sexism. That a proportion of participants blamed the targets of these types of messages as overly sensitive or 'unstable', downplayed the seriousness of the negativity, brushed it off as sarcasm or not meant to be taken at face value, or suggested that it is not common demonstrates that the game community has an uphill battle in addressing toxicity as the abusive rhetoric that it is. Some participants gave reasons for refusing to acknowledge the toxicity, such as not wanting their hobby to be associated with stigma, showing that reasons for downplaying are multifaceted.

To combat toxicity, the community will need to determine where to place its efforts, which will be a challenge when there is still much disagreement on who to 'blame'. In our data, a proportion of participants downplayed toxicity as being perpetuated by only younger players. This is (to some extent) in line with work in the context of another MOBA (Dota 2), which suggested that younger players perceived abusive communications as less serious than older ones [46]. The same study showed that younger players were more likely to report being penalized for toxic behaviours by being placed in a low-priority queue—a finding in line with work by Kordyaka et al. [30], who showed that age was negatively associated with self-reported toxicity. Younger players increasingly grow up with toxic online communities, and might consequently be more likely to normalize it.

In placing responsibility, participants were split on whether to place blame on the game community, or the developer. Riot Games has certainly tried to address toxicity in different ways. In the initial years (2011-2014) there was a tribunal system (e.g., [8]), in which players judged and suggested punishments for other players. This system was removed and replaced with a new system, which did not allow players to participate in the same way. The new system was enhanced by a trained AI to quickly punish players after a match (possibly what one participant has referred to as players only being punished when they use specific 'trigger' words). Riot Games has further presented messages in the loading screen for many years now (see Figure 1.), which sometimes contain fun facts about the game or other times remind players to be friendly to others or suggests coping mechanisms. Riot Games further disabled the 'all chat' (the chat allows players to have a conversation with the enemy team) by default in 2015, meaning that players need to take initiative to enable it if they wish to use it. There were further plans to remove this chat completely but after resistance from the community, 'all chat' had instead only been removed in some regions and certain game modes.

Given that the game studio has not solved the problem of toxicity, it has fallen to the players themselves to come up with solutions. A proportion of participants expressed that they feel personally affected by the negativity, that the overall tone of communication takes the enjoyment away, or that they wish things were different. Previous work has suggested that exposure to toxicity negatively affects the player experience [71] and harms team performance [48, 51], in addition to the trauma that is inflicted by exposure to hate speech and discrimination. And given that exposure to toxicity can promote perpetuating toxicity [30, 33], it is incumbent on players to protect themselves. Overwhelmingly in our sample, players protect themselves through muting the chat, which is in line with prior work (e.g., [1]). However, muting does not prevent toxicity, but just prevents that player from seeing it expressed. In this way, it contributes to the status quo and normalization of toxicity through a tacit acceptance that this is simply how things are if you play League of Legends. Muting places the responsibility of coping with the target of toxicity, rather than with those who

perpetuate it. The reason to have a chat in a competitive team game should be to discuss strategies and coordinate with the team, but when players cannot enable the chat because they find the prevalence of toxic messages to be disturbing, it also prevents them from effectively communicating with their team or getting advice, ultimately limiting their ability to improve or make friends. While it is clearly appreciated by players that they can mute the chat, it should not be enforced by other players (e.g., through victim-blaming) that they must mute communication tools to provide themselves with safety while playing. Beyond placing responsibility with the target, muting as the predominant strategy also highlights how the community does not feel empowered to voice their disapproval, leaving toxic players unchallenged in their assumption that their behaviour is indeed normal.
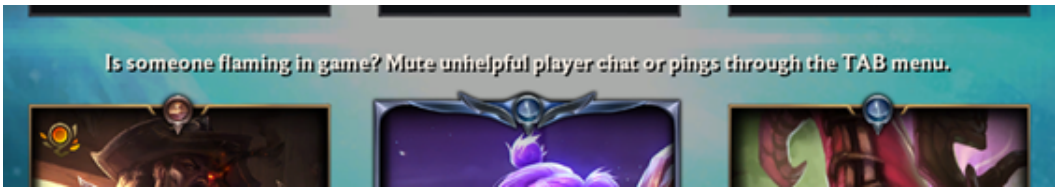

Fig. 1. A tool tip in a League of Legends loading screen, suggesting that players mute unhelpful players.

5.4 Implications for Design

As described in Section 5.2, players have expressed a desire for interventions from developers—but the success of extant interventions so far have been limited (e.g., the disconnect between the honour system and the actual rewarding of prosocial behaviors). Sixteen participants openly expressed (without being prompted) that they wish for more initiatives (for positive behaviors) or stricter punishments (for toxic behaviors); to this end, game developers may employ tools and systems to set behavioural norms and boundaries, openly correct player assumptions about what language constitutes abuse or hate speech (and where the line to 'banter' is crossed), and to influence community expectations of positive behaviour. While the Tribunal in League of Legends was not considered a system deemed to be worth maintaining, there might still be value in aiming to develop systems that grant agency and responsibility to the community in order to combat moral disengagement [5, 66]. Current solutions (such as disabling chats, muting, pinging and emotes) minimize player interaction, but do not encourage positive conversation or actively standing up to aggressors. In a recently published video [41], Weszt Hart, Head of Player Dynamics at Riot Games stated: *"Like yes, we know we're going to need to deal with the negative stuff. Reducing bad does not create more good any more than reducing sodium in your diet doesn't make our food more nutritious. So we got to do both because otherwise we're kind of aiming for neutral."* This shows that the games industry is aware of the lack of positivity and that removing toxicity is just one side of the story. Efforts to spread positivity throughout gaming communities could include generating positive memes or supporting streamers who are known for positive interactions. Through this, positivity would be highlighted and normalized, which could help to counteract the perception that it is not a genuine aspect of competitive online gaming. This would further shift the focus towards positive role models and alternative behaviour examples. Rather than solely relying on player votes, AI could be used to detect positive interactions and reward players for prosocial and wholesome behaviours, raising team spirit, or uplifting others. In casual game modes, AI could further be used to provide ice breaker questions to encourage communication in the beginning of a match, since prior work has found early communication to be important for team cohesion. An AI

could further interject to remind players of positivity or empathy when it detects tension in the chat. If most players feel as though gaming culture is no longer positive, then there should be a collective effort of the community and developers to change this.

5.5 Future Work

Our study provides insights into how League of Legends players view and define themselves, but provides a limited perspective on actionable solutions. We highlight that negativity is only one side of the problem and future studies should examine whether the efforts to reduce toxicity have reduced positive interactions as a side-effect. Research efforts should include finding ways to increase positive interactions in gaming communities beyond systems that might encourage passivity or skill-based honouring, as positive play spaces are not characterised simply by the absence of toxicity. There should also be more effort to research and empirically compare mechanisms of the different honour systems that are currently being used in games. Further, we need to increase efforts to provide solutions to the marginalization and normalization of verbal abuse in online communities. Games and play research should work towards generating tools to support positive change in game-based chat interactions. One example might be to suggest ways to encourage players to speak up against behaviours that they disagree with. Another could be to search for ways to encourage using chats for positive interactions rather than withdrawing from those social opportunities that allow players to make friends and experience relatedness and belonging through gaming. Relatedness is a fundamental human need and games are able to help satisfy this need [64]. Previous work has found that relatedness in League of Legends is predicted by high intimacy motivation [54]. As intimacy motivation is characterized by trusting other players and being open to close friendships in games, this might allow these players to be more receptive to positivity—which would in turn render players more likely to interpret positive messages at face value, rather than to dismiss them.

5.6 Limitations

One limitation of our work is that some responses were prompted, and others unprompted—rendering the prevalence of some of the generated themes as not necessarily fully comparable. Further, recent work has indicated that toxic behaviour in MOBA games is influenced by they player's offline culture [32]. Our sample was mostly limited to players on the Europe-West server of League of Legends and all participants responded in German, meaning that we might offer a culturally-limited perspective. While the percentage of women in the sample is in line with estimates of how many League of Legends players are women, this still means that the perspective of women is generally underrepresented. The same is true for minority genders (e.g., non-binary or gender-fluid). For example, women have been found to be more likely to have a strong reaction to prosocial behaviour [67], which could indicate that different sub-groups of players might react differently to positivity. While this is beyond the scope of this work, it highlights new avenues to explore in future research. We note that despite the trigger warning in the beginning of the study and although participants could end the study at any point in time, at least one participant pointed out feeling distressed after reading the hateful messages, which they stated reflected their prior LoL play experience. As a strong consideration for future work in this space, we suggest implementing additional protective means. Examples of this may include directing participants to mental health resources, or supplying mood management materials post-experiment (e.g., positive or reassuring messages, or cute animal pictures).

6 CONCLUSION

Prior work has established the normalization and acceptance as well as coping mechanisms of toxicity in certain types of competitive games, especially but not limited to MOBA and first-person shooter games. Most qualitative studies employed smaller samples and in-depth interviews; our work builds on these findings by using a mix of qualitative and quantitative methods in a large sample of League of Legends players. This is, to our knowledge, the first study to examine responses to verbal positivity in such detail. Our findings show that the most common strategy of coping with toxicity in League of Legends is the mute option. We show that many players acknowledge the prevalence of toxicity and condemn it but there is still a big minority that considers it acceptable. More importantly, we found that players are so conditioned to experience toxicity within LoL that they became suspicious of the positivity that they encountered in our study. The vast majority of responses to positive text excerpts was comprised of disbelief—downplaying them as not representative and rare—and even suspicion that the messages must have been intended as sarcasm. In addition, players demonstrated a lack of perceived responsibility to play a proactive role in changing their community for the better, choosing instead to disengage from chat altogether. As a result, players might not even be aware of positive interactions occurring in LoL, due to their coping mechanism of "/mute all". We conclude that current solutions to game-based toxicity are also likely to limit exposure to positivity alongside beneficial social interactions, and that researchers and developers are being presented with the dual challenge of designing game mechanisms that reward positive in-game communication and interaction while punishing players for harmful play.

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