

Look Upon Thyself: Understanding the Effect of Self-Reflection on Toxic Behavior in Online Gaming

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1 INTRODUCTION

Toxicity is an inseparable facet of online gaming. Many online multiplayer games are plagued by antagonistic and aggressive behaviors such as flaming, raging, and griefing [1, 5, 9, 11]. Despite the clear linkage between toxic behavior and reduced user enjoyment [14] and even lower game performance [12, 16] that are well-recognized by the community [11], the problem persists.

While the culture and the context behind such behavior are complex and game-specific, the normalization of abusive behaviors represents a common thread across a variety of genres and settings [3, 21]. Previous analysis by Beres et al. revealed that though players recognize and fear the exposure to toxicity during their gaming experience, they succumb to believing that the behavior is inevitable or even acceptable [3, 7]. However, the normalization of toxic behavior does not fully explain *why* a player commits toxic actions.

In fact, even players who recognize certain behavior to be problematic may still fail to abide by their moral code, especially in high-stress, high-risk situations like competitive gaming. Toxic behavior incited by players who undergo a cycle of emotional turmoil and negative behavior, also known as “tilting” [21], has yet to be explored in detail despite being a key factor. For example, in *League of Legends*, a popular Multiplayer Online Battle Arena (MOBA) game, 95% of players are only toxic once in a while when they would become triggered by an in-game event. These players also make up 86% of in-game reports [4]. Though a select few individuals consistently act with malicious intent, a vast majority of toxicity originates from players who lash out when under duress.

Thus, investigating the normative views of the instigators of abuse and comparing it with how they view their own actions is important in establishing the full picture of the motivations behind toxic behavior. If the players are able to objectively distinguish civil conduct but unable to recognize the wrong of their own incivil actions, simply combatting normalization would be insufficient.

To this end, we extend previous research by exploring (1) whether a gap exists in how perpetrators of toxicity construe toxic behavior and how they perceive their own actions and if so, (2) whether self-reflection on this lack of awareness can induce positive attitudinal or behavioral change. The following position paper outlines the planned study procedure and its basis. The study first will analyze the *perpetrators*' viewpoint to verify whether players who carry out toxic behavior are unaware of its problematic nature and whether simply recognizing toxic behavior is sufficient in preventing further occurrences. After investigating potential hypocrisy, self-reflection methods will be applied to observe their effectiveness in better recognizing and reducing the perpetrator's own toxic behavior.

2 PERCEPTION GAP IN PLAYERS' NORMS AND PERSONAL BEHAVIOR

Competitive online multiplayer games serve as a prime environment for dissonance in what behaviors a toxic individual perceives to be socially correct and what behaviors they actually perform. Popular games such as *Dota 2* [22], *League of Legends* [10], *Overwatch* [8], and *Counter-Strike: Global Offensive* [6] which span diverse genres, focus on fast-paced, real-time competition between human players that require intensive team cooperation to achieve victory. Such conditions cause visceral emotional reactions when the situation does not go in the way of the player — it can be considered to be threatening to the goal of the player (winning), to have low controllability by the player (high reliance on teammates), and to be the fault of others (a “bad” teammate or the enemy), which easily provoke anger and enable action justification according to the appraisal theory of emotions [17, 18].

The question now remains whether the spontaneous, emotional, and reactive nature of toxic behavior, coupled with the fast-changing in-game environment, limits the perpetrator's ability to recognize the problematic nature of their behavior and uphold their objective sense of the game norms. Thus, the first part of the research investigates the perpetrators' stances on in-game toxic behavior in general. The authors will collect recorded gameplay and gather clips of toxic behavior and vet clips that may be considered aggressive. To identify the perpetrators and toxic actions, other players will then rate each clip on how toxic they are to distinguish what the community agrees to be negative behavior. Then, the perpetrators' perception of what they construe to be toxic conduct will be measured through surveys and interviews to examine how it compares with their actions. After determining whether players act incongruently from their normative beliefs on civil behavior, the study aims to apply self-reflection exercises to prompt attitudinal or behavioral improvements in toxic players as discussed in the next section.

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3 INDUCING CHANGE WITH SELF-REFLECTION

People aim to maintain and restore their self-integrity when violating the norm [20], which can lead to behavioral changes when they recognize their hypocrisy. Several studies have shown that allowing people to recognize their duplicity can motivate changes in their future conduct [2, 15, 19]. Reflecting on personal acts of hypocrisy is especially more effective when done on more recent examples, in private, and after normative standards are publicly advocated by the player [20]. However, in gaming, the player cannot step away from the conflict and reassess the situation during the game [13], is often called out publicly, and is rarely asked to affirm the game's normative guidelines.

The study thus aims to provide perpetrators with specific, recent clips of the player's collected data rated toxic by other players after the initial part of the study that collects perpetrators' normative beliefs on civil behavior. The player will be asked to evaluate their conduct in terms of toxicity level, the emotional state during the game and currently, and how they would act differently, if at all. They will also rate the level of anxiety brought on by the exercise. The study will observe the effect of such an exercise on how they view their own behavior and what internal changes in attitude or behavior it may bring through further interviews and observing perpetrators' subsequent games.

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