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RESEARCH-ARTICLE

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SHANO LIANG, Worcester Polytechnic Institute, Worcester, MA, United States

MICHELLE V. CORMIER, Monash University, Melbourne, VIC, Australia

PHOEBE O. TOUPS DUGAS, Monash University, Melbourne, VIC, Australia

ROSE BOHRER, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki Prefecture, Japan

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SHANO LIANG, Worcester Polytechnic Institute, Worcester, Massachusetts, USA

MICHELLE V. CORMIER, Monash University, Melbourne, Australia

PHOEBE O. TOUPS DUGAS, Department of Human Centred Computing, Monash University, Melbourne, Australia

ROSE BOHRER, Information Technology and Human Factors, National Institute of Advanced Industrial Science and Technology, Tokyo, Japan

Many trans people experience marginalization and violence in cyberspace. This violence is characterized by intricate dynamics surrounding voice, identities, bodies, and social interactions. To comprehend and provide a theoretical framework for this enduring phenomenon of digital violence, the present research introduces the concept of Trans Cyber-Necropolitics (TCN). TCN is a necropolitical system that explains how digital media enforce the disposability of trans people in cyberspace. We decompose this digital death into three steps: SENSING, TARGETING, and INVISIBLE KILLING. Combining with the authors' positionality as transgender gamers, we provide a critical analysis of how each step operates, conducted via a meticulous examination of games, as well as an exploration of the discourse from game design and community-side comments through the lens of critical discourse analysis. Building on this analysis, we ideate how each step could be disrupted with resistance strategies and technological measures.

CCS Concepts: • **Human-centered computing** → **HCI theory, concepts and models; Systems and tools for interaction design**; *User centered design*;

Additional Key Words and Phrases: game design, trans game studies, critical cultural theory, necropolitics

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Authors' Contact Information: Shano Liang (corresponding author), Worcester Polytechnic Institute, Worcester, Massachusetts, USA; e-mail: sliang1@wpi.edu; Michelle V. Cormier, Monash University, Melbourne, Australia; e-mail: michelle.cormier@monash.edu; Phoebe O. Touns Dugas, Department of Human Centred Computing, Monash University, Melbourne, Australia; e-mail: phoebe.toupsdugas@monash.edu; Rose Bohrer, Information Technology and Human Factors, National Institute of Advanced Industrial Science and Technology, Tokyo, Japan; e-mail: rbohrer@wpi.edu.



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1 Introduction

The persistent violence faced by trans people in cyberspace, such as harassment, threats of physical violence, and transphobic portrayals, has long been a matter of concern [40, 74, 121, 132, 163, 175, 203]. Under continuous threat, Trans people find it difficult to either establish a safe haven or to break out of our marginalized state in cyberspace. Such enduring digital violence suggests the existence of a systemic enmity, normative power, and design neglect that enforces the disposability of people with trans identities [78, 89, 124, 176]. We argue that this sustaining phenomenon can be understood and analyzed through Mbembe’s [141] *necropolitics*, a political theory of how certain classes of lives are treated as disposable. We theorize about methodological and epistemological features and practices that work against trans identities in cyberspace to explain how pervasive *cis/heteronormativity* perpetuates marginalization of trans identities in digital media and video games.

Necropolitics is the political theory of living death [141, 142]. Born of colonialism, the violent cycle of terror and counter-terror seeks to destroy the life and soul of the colonized—even as the body continues to breathe—through its capacity to decide who lives and who dies. Necropolitical violence poses unique challenges to its resisters because violent resistance, if carried out from a place of oppression, can result in the continued dehumanization of the oppressed as the violent resistance is read as confirmation of the value of oppression.

Cyberspace—the figurative term for interconnected digital social experiences both wholly online and intersecting with the physical world (e.g., games, websites, social media, web fora)—has always been a key element of necropolitical theory. Prior scholarship has included necropolitics in its analytical perspectives surrounding existing biopolitics and violence in digital spaces (e.g., [46, 98, 112, 120, 139, 169]).

Queer and trans necropolitics analyzes the various forms of violence against us, using the same tools introduced by Mbembe’s original conception. One such tool, which we build on, is the framing of an **Unmanned Aerial Vehicle (UAV)**, which embodies a necropolitical war machine through SENSING, TARGETING (or hologrammization), and INVISIBLE KILLING. Our studies seek to expand this perspective to analyze and theorize trans necropolitical operations in interactive media and games, and its impact on players and communities.

This article introduces a necropolitical theory of the digital lives of trans people: **Trans Cyber-Necropolitics (TCN)**. TCN sheds light on the ways in which extant interactive systems regularly marginalize and endanger transgender people. Our analysis, through its emphasis on how digital violence against trans people, reflects the structure of necropolitical logic. At the same time, these forces act against trans people in general, and the analysis applies to trans people in general. Although cyberspace is always a part of necropolitics, we include the word *cyber* explicitly to emphasize its outsized role in trans lives [100].

1.1 Defining TCN and *Death*

We define TCN as the specific necropolitical system that deems the digital lives of trans people as disposable, renders us into the living-cyber-dead, and transforms our digital world into a deathworld [142]. The notion of *living-cyber-death* is itself an extension of the notion of *living death* [142, p. 92] (also see [28, 71, 92, 138]), which captures a state where a person continues to be physically alive but incapable of self-actualization, typically experiencing repressed affect and a persistent state of fear. The term is intentionally provocative to capture the affective experience of trans people in cyberspace.

We frame “*death*” to parallel Mbembe’s original conception of “*social death*” [142, p. 75, pp. 157–159], expanded by Emerson [71], and the broader academic discourse (e.g., [37, 61, 125]).

We describe trans social death in digital society, the expected outcome of necropolitical operations. Such deaths contribute “value” to those in power in society [191].

We as a team including trans people of color do not want to wait until physical death occurs to start the postmortem, but hope to prevent ongoing digital violence by framing and describing digital social death conditions within TCN. That is, TCN explains how design creates the living-cyber-dead. We frame the notions of the living-cyber-dead as:

- (1) the loss of voice for social connectedness in digital spaces;
- (2) the loss of authenticity of social identity; and
- (3) the loss of digital agency for representation and resistance.

We demonstrate the need to consider these three elements (trans, cyber, necropolitics) in unison by employing the framing of Mbembe’s [142] descriptions of an UAV as a necropolitical war machine in three stages:

- (1) **SENSING** subdivides the population, singling out any group considered non-normative, while fueling (self-) surveillance and silencing voices. Silenced groups are exposed to the risk of losing their social connectedness.
- (2) **TARGETING** transforms a singled-out non-normative group as enemies, takes away their authenticity and the agency of their social identities, and, thus, renders them disposable.
- (3) **INVISIBLE KILLING** eliminates the silent groups via unnoticed means and without raising opposition.

The distinct concept of TCN is necessary because these three stages take on a unique shape in the digital lives of trans people: **SENSING** makes trans people hyper-visible, **TARGETING** occurs through misrepresentative narratives that establish trans people as valid targets, and **INVISIBLE KILLING** occurs through gender deprivation and commodification. While there are no doubt more ways in which the necropolitical war machine affects the lives of trans people, the present three are the focus here. The result of this three-stage process is living-cyber-death.

1.2 Research Questions and Approach

The goal of this article is to establish a necropolitical theory for trans experiences of cyberspace so that it can be reified and resisted. Although this work is aligned with broader research trends such as trans-inclusive design, it is important for the work of theory-building to stand on its own, as a foundation on which design work might 1 day rest.

This work is informed by our previous study [132], which inquired as to how game designs can trigger gender dysphoria and affect physical and mental health. Our previous study assumed necropolitics as a framing, unpacked how it operates through case studies on the misrepresentation of trans people in video games, and developed design language for the discussion of dysphoria triggers. The present study moves necropolitical theory to the foreground; constructs conceptual frameworks to help academics reveal theories underpinning research across disciplines while capturing dynamics between them; and provides a rationale from one perspective for theoretical inquiry into the concept of trans necropolitics in cyberspace.

We confront the reality that the perpetuation of violence and marginalization is a prevalent aspect of the daily experiences of transgender individuals, including those who live in ostensibly supportive contexts or communities. This phenomenon possesses a systemic necropolitical influence that warrants acknowledgment of and incorporation into the process of knowledge production. Interactive media span the breadth of daily lived experience and beyond, yet our focus is in comprehending and theorizing different facets of necropolitics, specifically directed toward trans

identities, shown and manifested in cyberspace. This goal is important not only because trans lives matter but also because it aims to go beyond neoliberal politics of inclusion.

Motivated by our own experiences as trans individuals participating in gaming and as game researchers, we initiated this project with the following research questions:

RQ1 How does necropolitical power marginalize trans identities in cyberspace?

RQ2 How can both game designers and trans players resist this necropolitical power?

To address the research questions, our methodology is interdisciplinary and multi-method. We work from a systematic critical cultural study paradigm involving close reading of digital media [31, 57, 204] combined with textual (content) analysis and critical discourse analysis [33, 63, 73, 134, 225].

1.3 Contributions

Prior research and ongoing discussions regarding queer and trans studies, necropolitics, and interactive media imply the existence of an identifiable and constructible interdisciplinary TCN framework. To facilitate discussing and imagining resistance strategies, we develop what we learn through studying the research questions to arrive at a framework and methods for resisting necropolitical power. We make the following contributions:

- We establish the reality of necropolitical violence against the digital lives of trans people through evidence framed through the necropolitical war machine. Although this violence can cross into our physical lives, we focus on its effects on our digital lives. We show how voice communication serves as SENSING, how misrepresentation serves as TARGETING, and how gender deprivation and commodification serve as INVISIBLE KILLING. These combine to function as a digital war machine.
- We explore the necessity and current state of trans resistance against this violence.
- We ideate on how each component of this war machine might be opposed to dismantle the system of TCN.

The article concludes by discussing the immediate implications of TCN for the design of software, especially digital media. We propose strategies to counter the TCN war machine in terms of ANONYMITY, AUTONOMY, and ASSEMBLY, which combine speculative designs and existing works by trans or trans-ally communities.

1.4 Trigger Warning

The present study addresses gender dysphoria, stigmatization and misrepresentation of trans people, and depictions of violence against the trans community, which we discuss in detail. Readers may find these topics difficult. Further, the analysis and discussion address stigmatization against trans people (Sections 5.1.2 and 5.2) or sexual violence (Sections 5.2.2, 5.2.3, and 5.2.4). If, as a reader, you find yourself in an unexpected emotional state, please take care of yourself.

2 Background

This study examines digital violence and marginalization against trans groups via the lens of necropolitics and its intersection with game design in both trans and queer game studies. We start with a brief description of queer and trans study terminologies. These terminologies are nuanced and evolving; they are used multiple times in our analysis, so it is essential to make our foundational terms clear. We expect that readers who may not be acquainted with these terms will come to understand them through our descriptions. With the same consideration, we subsequently provide a concise introduction to the field of necropolitics. We then proceed with background on game

studies and queer and trans game studies in order to define our approaches to interactive media and our interdisciplinary perspective.

2.1 Trans Terminology Primer

We reference the scholarly contributions of Badgley et al. [11], Scheuerman et al. [179], Namaste [148], and Stryker [196, 198] to introduce the reader to relevant terms. We use “*transgender*” and “*trans*” to indicate people for whom their assumed gender at birth does not hold, as opposed to *cisgender* people [196]. We choose to follow the **Human-Computer Interaction (HCI) Gender Guidelines** in using this term [179]. *Transphobia*, *trans hostility*, and *cissexism* are prejudiced attitudes and discriminatory behaviors directed against trans individuals. *Gender dysphoria*¹—often, but not always, experienced by trans people—is distress relating to a mismatch between the gender perceived by the self and others [11, 196].

Cis/heteronormativity is a driver of TCN that perpetuates violence and marginalization against trans people. Much of the world and society centers expectations of long-term man-woman pairing—*heteronormativity*. *Heteronormativity assumes cisnormativity* [123, 166, 180, 226]—that it is “normal” to identify with one’s gender assigned at birth and that being transgender is “abnormal.” In the present work, we highlight how the two norms are intertwined, but distinct, by employing the term *cis/heteronormativity*. *Cis/heteronormativity* profoundly impacts the way the world is designed and the expectations of individuals; it forms the basis of much of the harms that trans people experience.

The concept of “*passing*” is a crucial term in understanding the TCN war machine. The *cis/heteronormative* concept of “*passing*” refers to the notion that trans persons who do not display any visible signs of their assigned gender at birth “pass” unnoticed (as *cisgender*) [182, 213]. This notion of *passing* harms binary and non-binary trans individuals by disregarding non-binary trans people’s desire to be perceived as not aligning with binary notions of “male” or “female,” while binary trans people desire to be perceived as their own binary gender [167], representing self-actualization and gender congruence [105, 190]. This significant harm results from the inherent power imbalance that exists when a *cisgender* individual has the authority to determine whether a trans person may successfully “pass” [30]. The experience of not being seen as “*passing*” may result in transphobic harassment, violence, or worse [10, 22, 93, 150].

2.2 Necropolitics, Biopower, War Machines, and Death

Necropolitics refers to the use of social and political power to govern the conditions under which some groups of people are permitted to live while determining how others are compelled to perish [140–142]. This concept is often framed as an expansion of *biopower*, as first conceptualized by Foucault [82]. *Biopower* is a political technology for managing humans and controlling populations. In Foucauldian theories, *biopower* serves as a mechanism aimed at “protecting” [82], but this mechanism operates by dividing people into subgroups [142], which facilitates subordinating non-normative populations [82]. Such power transcends ordinary oppression and is productive in multiple dimensions: power influences social norms and behaviors, creating information regarding what is deemed normal or acceptable; power develops social categories and defines group identities through discourse; and power generates disciplinary procedures and docile individuals who internalize societal norms. Moreover, and more significantly in the presenting work, power enables avenues of resistance for individuals or groups to contest and reconfigure its dynamics [81].

¹Although we expect that many trans readers will grasp this concept easily, we acknowledge that those who have not knowingly experienced gender dysphoria may struggle to fully appreciate it. For further background, we suggest the following: [179, 198].

Anchored in the discussion of the subordination of non-normative populations, Mbembe [71, 141, 142] further extended the notion of biopower to examine the interplay between and regulation of social power, political power, and sovereignty. Mbembe [142, pp. 66–70] questioned the practical conditions that lead to using biopower to kill—*necropolitics*. These questions involve who is subject to be killed and who has the right to do the killing. The motivations and goals of necropolitics come from the dominant groups, by those groups, as they have the power to mark and subdivide the population. During the process of subdivision, non-dominant groups are marked as non-normative and excluded from the population, who are thought of as the norm. Therefore, the identification and distribution of others who are thought of as non-normative groups are targets. A necropolitical state results in the deployment of the *deathworlds*, where “vast populations are subjected to living conditions that confer upon them the status of the living dead” [142].

2.2.1 Necropolitical War Machines. Deleuze and Guattari [62] developed the concept of *war machines* [142, p. 83] to refer to and analyze social-political and cultural operations that maintain the biopower of privileged subgroups and the deathworlds of non-normative minorities. The dominant group continuously appeals to treat non-normative groups as “the exception and [as] a fictionalized notion of the enemy” [142, pp. 70–78]. In order to render non-normative groups as enemies, and in order to legalize the identification, subdivision, and elimination of these “enemies,” necropower needs not only to highlight the “illegitimacy” and stigmatizing characteristics of the enemy’s identities, but it must also seek a “machine” to efficiently eliminate their voices and resistance [142, pp. 78–88].

The war machine [142, pp. 83–92] emerges as a means to SENSE, TARGET, and INVISIBLY KILL the marginalized groups marked as fictionalized enemies [46]. Such necropolitical war machines are characterized as polymorphous, diffuse, and capable of metamorphosis into modern digital forms [46], performing as UAVs with “sensors aboard,” “an Earth-observation satellite, [and] techniques of hologrammization” [142, p. 82], to perpetrate “invisible killing” [142, p. 83]. Because these war machines run on modern digital technology, *cyber* is a fundamental aspect of necropolitics as conceived by Mbembe, with numerous works incorporating this perspective into the examination of biopolitics and violence within digital realms [46, 98, 112, 120, 139, 169].

2.2.2 Queer and Trans Necropolitics. Queer and trans necropolitics explains the dynamics of racism, colonialism, and nationalism (e.g., homonationalism) within LGBTQIA+ communities. Puar [157] coined *queer necropolitics* to analyze post-9/11 queer assimilationist ideology, wherein white queer people become aligned with racist forces against marginalized queer people of color generally affected by reigning necropolitical powers. Queer necropolitics notably highlights the limitations of biopower when applied to marginalized communities who deviate from social norms and have less value in the eyes of society. This perspective is also echoed in Butler’s discussion of queer individuals’ lives and death [45], further highlighting the necessity of the extension of necropolitical studies and its intersectionality with gender identity when studying biopower and violence.

In necropolitical studies that focus trans identities, Snorton and Haritaworn [191] consider the discursive and representational politics of trans death and trans vitality and address how trans people of color are made disposable and their deaths exploited within white trans discourse to necropolitical ends. Furthermore, Cárdenas [46] expands the necropolitical perspective and war machine framing to analyze trans affective violence in social media, and, in her subsequent work [47], proposes the concept of poetic operations to counter trans violence from algorithms.

2.2.3 Living-Dead and Social Death. To develop TCN, we need to establish the concept of the living-cyber-dead, drawing from prior concepts of the living-dead and social death. Mbembe [142]

characterizes *living people* as possessing autonomy and sovereignty. The *living-dead* are individuals who cannot set their own limitations and face the risk of social or political death, therefore, they continue to be physically alive but incapable of self-actualization [142]. In their discussion of biopower and dehumanized, enslaved people, *social death* is a triple loss—“loss of a ‘home,’ loss of rights over one’s body, and loss of political status” [142, pp. 74–75]. Emerson [71] adds that the necropolitical operation of transforming a person from living to the living-dead involves making a fear of death or exposure to deathworlds, the driving factor in their behavior. This provides another aspect to frame the living-cyber-dead—changing self-behavior out of fear and experiencing repressed affect. In addition, Králová [125] synthesizes the concept of social death: loss of social identity, loss of social connectedness, and losses associated with disintegration of the body.

In the context of the digital world, these perspectives on the living dead and social death help understand the loss of an individual’s digital body and social identity as a facet of the living-cyber-dead. The living-cyber-dead do not have sovereignty over their digital life.

2.3 Interactive Media, Games, and Game Studies

The present research connects necropolitics with digital media, including the cyberspace in which our lives are embedded. More specifically, we examine interactive media, video games, and the communities that revolve around them. To ground our work, we first provide a primer on several terms pertaining to video games and interactive media and then briefly introduce the background of trans and queer game studies.

2.3.1 Interactive Media and Games. We reference the definition of Salen Tekinbaş and Zimmerman that games consist of rules and play in service to some uneven outcome [178]. *Rules* are the limitations on player choices and the factors that drive the results of those options. *Game mechanics* are designed moments at which players exert agency in games and make choices. They are the fundamental units of interactivity [1, 116, 178]: action-outcome cycles in which a player observes game state, makes informed choices, and then observes the rules-constrained outcome before repeating.

In many games, the player acts through a character; these games are particularly salient to the present research. The character through which a player interacts has been called a(n) “avatar” or “game character” [20, 21], while we choose **Player Character (PC)** to identify what entity within a game represents the player and gives them agency, and **Non-Player Character (NPC)** to refer to characters that are not controlled by a player. PCs are how players engage the game’s mechanics [20, 21]. PCs matter to the present research as they are not only the player’s means to exert agency but also their representation in cyberspace. It is worth noting that the PC may change over the course of the game and that this embodiment is not necessarily a person—it could also be an animal, robot, vehicle, and so on. Design decisions regarding PCs, what choices are offered to the player, and the level of customization granted to players in shaping their virtual identities are intimately tied to self-expression, identity recognition, and immersion [14, 199, 205, 211].

Interactive media and games have assumed a distinct role with regard to their social and cultural relevance, where the *game communities* have emerged as a product of the socialization of interactive media and games as cultural entities. These game communities are online (e.g., Reddit, Steam, online fora) and physical (e.g., game stores, conferences) social spaces that bring players together for discussion around games and related culture [52, 162, 164].

2.3.2 Queer Game Studies. *Queer game studies* describes a nascent academic paradigm that integrates LGBTQIA+ perspectives with games [176]. The field is interdisciplinary, drawing from media studies, ethnography, history, and critical theory (e.g., [6, 99, 109, 177, 192, 197]), providing diverse methodologies for game scholars, designers, and players to analyze games. Queer game

studies extend beyond examining gender and sexuality representations in games, aiming to challenge and disrupt cis/heteronormativity by incorporating diverse perspectives [173]. Ruberg [171] has identified five growing trends: (1) the representations of queerness and LGBTQ in video games [39, 129, 154, 186, 214, 227]; (2) the inclusivity and available game spaces for queerness [114, 146, 147, 158]; (3 and 4) the possible connections between queerness and game design and analysis process [12, 15, 53, 72, 106, 107, 127, 128, 174]; and (5) queerness in game community cultures [172, 185, 202].

Queer game studies is foundational to our research and establishes this study's motivation. We introduce TCN to theorize the sustaining phenomenon of trans identity marginalization and violence in cyberspace. It is also worth noting that a series of emerging discourses on the complex relationship between trans game studies and queer game studies has emerged in recent years. The present research is closely related to trans identities, so we briefly introduce trans game studies in the following section.

2.3.3 Trans Game Studies. Integrating trans discourse as a perspective within game studies is a rising topic in recent years. Scholars like Ruberg [175] and Lax [130] suggest the active involvement of trans game scholars to emphasize the significance of their perspective in advancing a more holistic evolution of queer game studies. Contrasting with queer game studies, Ruberg [175] raises *trans game studies* as a distinct paradigm, with the following characteristics:

- (1) Acknowledging diverse approaches to exploring transness and games;
- (2) bridging the realms of scholarship and design;
- (3) centering trans voices and recognizing the significance of trans embodiment in meaning construction;
- (4) actively engaging with the complexities of the relationship between transness and queerness; and
- (5) moving beyond the assimilation of transness to establish distinct trans game studies paradigm.

Trans game studies have emerged that parallel queer game studies. These address trans representation in interactive media [124, 131, 132, 206]; trans participation in fan culture [69]; and trans discourse in design processes [16]. Gass [88] discusses how *glitch*—typically undesired malfunctions—can be claimed as a trans representational mode in video game design for embodiments of dysphoria and dissociation.

Trans game studies arise from the intersection of trans identity, trans perspectives, and game studies. The present study contributes to this emerging paradigm, introducing TCN in game analysis and design.

3 Positionality

We establish our positionality so that the reader may understand the perspectives of the researchers and to acknowledge the ways in which our experience influences the work produced here. The research team consists of four trans feminine, well-played HCI researchers—two temporarily in the USA and two in Australia. One of the lead authors is trans Asian; the two team members in Australia spent much of their lives in the USA; and the fourth is in the process of moving from USA to Japan. Some of the group are trans binary, some not. Our group is diverse in terms of race, nation of origin, native language, and socio-economic class.

All of us have had our genders mis-assigned at birth and spent decades in gender-incongruous environments and groups. We have come out to ourselves and others via constant exposure to and navigation of the necropolitically violent world of interaction design, particularly games. We each bring decades of experience as “gamers” and consistent immersion in game communities.

Two researchers administer online spaces for trans gamers, developing first-hand knowledge of how transgender people are impacted in online communities. These qualities lead us to write as *well-played* [9, 60] researchers. By well played, we mean that, while such knowledge is not easily articulated, we are able to draw on an understanding of the history of video games and the trajectories of technology.

Our discussion of resistance against necropolitics is positioned as a team of researchers with multiple racial backgrounds, including both colonized and colonizing groups. When we discuss the capacity for resistance against necropolitics by members of both groups, this discussion is situated in our own history of research collaboration between these groups. We are not suggesting that subjectivities are uniform or that they arise from identical processes. Rather, we aim to clarify that our work reflects the existing subjectivities within our team, while the process involves incorporating and collaborating perspectives from different subjectivities of the team. All the aforementioned factors of positionality collectively shape the perspectives and analyses in this article, acknowledging that researchers with different positionalities or alternative data may draw distinct themes.

The individual acts of exclusion we discuss are often immediately apparent to trans players. Yet, a coherent analysis of these acts' collective necropolitical function requires a comprehensive understanding of games and communities from a perspective that is less obvious. The complexities arising from necropolitics in relation to the oppression and violence faced by trans digital lives require a comprehensive analysis of several factors, including the interplay of narrative with game mechanics, the prevailing cultural ideology inside communities, and broader discourse.

3.1 Limitations

The noteworthy limitation of our team composition is the lack of trans masculine scholars. Researchers from these groups may bring different research insights due to the dependence of trans experience on gender and place, as well as its dependence on all other intersections of identity, some of which are inherently unrepresented on any team [41]. Even within the authors' respective subcommunities, we respect diversity of perspectives and priorities. Hence, while it is our earnest endeavor to build language and critical trans discourse that all trans people can use, we call for further research that focuses on many intersections of identity, particularly trans masculine communities.

4 Methodology

The present research applies a systematic textual and critical analysis to digital media and game design. Although the stages of analysis are necessarily presented in sequence, the phases are iteratively revisited and the data corpus is continuously revised. Our study centers on the examination of digital socio-cultural effects of necropolitical violence; politics of representation; identity; and concerns faced by marginalized groups in the digital community, specifically, trans groups, through continuous engagement with game communities. Moving forward from our previous study [132] that defines gender dysphoria triggers and how to consider them in design, this study explores their underlying necropolitical logic.

The project begins with a deep literature review combined with insights from our own lived experiences within marginalized identities. This process enables us to recognize and frame the methodological and epistemological features of necropolitical theory to apply it to the data in this study. We then employ the techniques of Bizzocchi and Tanenbaum for close reading of digital media [31], which are grounded on philosophical hermeneutics [204], to identify and select games that reveal the basic characteristics of necropolitics specifically aimed at trans identities. The resulting corpus, after revisions, is a ludography of 26 games (Table 1). Proceeding along

Table 1. Final Ludography Ordered by Release Year with Inclusion Criteria

Title	Release Year	TRANS ID.	GENDER INCL.	PC CUST.	MARG. COMM.
<i>Baldur's Gate 3</i> [240]	2023	×	✓	✓	∅
<i>Roller Champions</i> [253]	2022	×	✓	✓	✓
<i>Guilty Gear Strive</i> [230]	2021	✓	∅	∅	✓
<i>Animal Crossing: New Horizons</i> [245]	2020	×	✓	✓	✓
<i>If Found...</i> [239]	2020	✓	✓	×	✓
<i>Cyberpunk 2077</i> [237]	2020	✓	✓	✓	✓
<i>Persona 4 Golden</i> [232]	2020	✓	∅	✓	✓
<i>Last of Us Part 2</i> [243]	2020	✓	✓	∅	✓
<i>Tell Me Why</i> [238]	2020	✓	✓	×	✓
<i>Sky: Children of the Light</i> [250]	2019	×	✓	✓	✓
<i>Apex Legends</i> [246]	2019	✓	∅	∅	✓
<i>Overwatch</i> [234]	2019	×	✓	∅	✓
<i>Celeste</i> [241]	2018	✓	×	×	✓
<i>The MISSING: J.J. Macfield and the Island of Memories</i> [255]	2018	✓	✓	×	✓
<i>The Legend of Zelda: Breath of the Wild</i> [244]	2017	✓	∅	✓	✓
<i>Watch Dogs 2</i> [252]	2016	✓	×	×	✓
<i>Tom Clancy's Rainbow Six Siege</i> [251]	2015	✓	✓	∅	✓
<i>Dragon's Age Inquisition</i> [233]	2014	✓	∅	✓	✓
<i>VRChat</i> [254]	2014	×	✓	✓	✓
<i>The Sims 4</i> [242]	2014	×	✓	✓	✓
<i>Grand Theft Auto V</i> [248]	2013	✓	∅	✓	✓
<i>Catherine</i> [231]	2011	✓	∅	×	×
<i>Grand Theft Auto: Vice City</i> [247]	2002	✓	∅	×	✓
<i>Resident Evil—Code: Veronica</i> [236]	2000	✓	×	×	✓
<i>Leisure Suit Larry 6: Shape Up or Slip Out!</i> [249]	1993	✓	∅	×	✓
<i>Final Fight</i> [235]	1989	✓	×	∅	✓

Games needed to address at least one of the inclusion criteria. Each criterion is a question and appears on the table as: check mark (✓) for yes, × for no, or nil (∅) for not applicable or not investigated. The inclusion criteria are: TRANS ID.: Does the game directly include at least one trans identity or imply one? GENDER INCL.: Does our analysis show that the game supports a broad range of gender identities? PC CUST.: Can the player customize their PC? MARG. COMM.: Is there visible community commentary that addresses marginalized groups with relation to the game?

with close reading and content analysis, our methodology for analyzing necropolitical violence against the digital lives of trans people and formalizing TCN employs critical discourse analysis [33, 63, 73, 225], a specific critical theory approach to the study of discourse, a material-semiotic phenomenon of language, yet distinct from discourse analysis [33]. This approach elucidates the underlying meanings of power relationships, social hierarchies, and ideologies embedded in discourse [134, 225].

We developed TCN iteratively, along with repeated observation and analysis of games in the corpus. This process included close reading and content analysis of games; critical discourse analysis of the discourse coming from game design; player-side commentary and of production-side commentary on design; and reports on events in game communities. As we iterated, the same analysis helped us reflect on resistance strategies for both trans players and game designers, through action and design.

The present research was performed by four researchers, with the lead author directing the process and engaging most deeply with the material. The project began in January 2023 and the analysis was performed until July 2023. In July–September 2023, we wrote the first version of this

report. In October–December 2023, we revisited the project and wrote the second version of this report. During this time, we detailed the interdisciplinary knowledge products that came out of it, clarified our interdisciplinary methodology, and deepened our connections with the broader necropolitics literature. In July–December 2024, we revisited the project and prepared the third revision, where we re-framed the work to strengthen the connections between the foundations of the necropolitical perspectives and our findings, analysis, and discussion, incorporating existing trans and queer scholars' work to expand our discussion of trans resistance strategies around anonymity, autonomy, and assembly.

4.1 Development Process of TCN

4.1.1 Data Familiarization to Characterize Necropolitics. Our process began with a deep literature review and synthesis that stemmed from Mbembe's necropolitics (i.e., [71, 82, 141, 142, 157]). We further delved into related trans and queer scholarship that investigates oppression (i.e., [46, 148, 159, 176, 191]). We synthesize these two lines of literature: by identifying the main features of necropolitics, we determine which data characteristics to collect; our lived experiences as the living-cyber-dead then informed the interpretation of these data. The knowledge forms resulting from this process are focused on identifying and constructing both methodological and epistemological features reflected in necropolitics of race, gender, and marginalized identities, which provide an initial conceptual framework for the following game analysis and development of TCN.

4.1.2 Data Collection and Characterizing the Living Cyber Dead. In order to address the complexity of the interdisciplinary production of knowledge, we used an iterative and multi-method approach to organize our objects of analysis and to theorize TCN features. Reviewed critically from our understanding of necropolitical knowledge and the initial conceptual framework of TCN, we discussed iteratively and ideated on the ways in which trans players may come to harm through the socio-technical characteristics of games and their communities. These discussions lead to the further iteration of TCN and identification of digital games that undermine trans lived experience.

A list of several dozen potential analysis objects was built during this phase, which we refined and focused in response to our literature synthesis and the data that emerged from analysis. We developed inclusion criteria and identified 26 games were selected. Games needed to have at least one applicable criterion to be included; if we determined that none applied, the game was removed. The inclusion criteria are as follows:

- **TRANS IDENTITY:** Does the game directly include at least one character with a trans identity or imply one?
- **GENDER INCLUSIVE:** Does our analysis show that the game supports a broad range of gender identities?
- **PC CUSTOMIZATION:** Can the player customize their PC?
- **MARGINALIZING COMMENTARY:** Is there visible community commentary—e.g., official from the developer, critical responses, player discussions—that addresses marginalized groups with relation to the game?

4.1.3 Close Reading and Content Analysis of Games. We engaged in close reading of games [204]. Close reading is a process of playing and note-taking that is aimed at understanding the experience of a game, where the incorporation of the literary approach stems from the extensive intellectual lineage of hermeneutic inquiry and rhetorical analysis. The burden of proof in hermeneutic inquiry does not lie in the accurate depiction of objective truth [56, p. 195], but, in contrast, is for scholars to exert efforts to provide substantiated assessments that contribute to the field's comprehension of games as textual entities and as experiential phenomena [57, 204]. Under this understanding and

in that spirit of study, performing such close reading often requires hours of gameplay—a fraught prospect given our positionality in the present research—in order to understand the events in the game and how mechanics and narrative interact as the way of reading digital media. We use this as a way to pull apart what it is about particular game designs that leads to trans harm and potentially reflects TCN.

During the close reading process, content analysis facilitated understanding how depictions of transgender identity function in video games, as well as the socio-political implications these game designs have on the lives of trans individuals in cyberspace. We focused on components of the games that feature dialogue or monologue including PCs. These scenes, as well as the broader cultural context, represent a form of textual analysis [145]. Two of the researchers conducted this analysis by playing the games and reviewing transcripts of the game text.

4.1.4 Critical Discourse Analysis. Our critical discourse analysis proceeds along with close reading and content analysis. *Critical discourse analysis* focuses the underlying meanings of power, social structure, and ideologies embedded in discourse and interprets the ways that discourse is used to create, reinforce, or challenge power relations while critiquing how it figures within and contributes to the existing social reality [33, 63, 73, 134, 225]. The “discourse” is a material-semiotic phenomenon of language [80], including texts, practice, and events [73], that encompass institutionalized patterns of knowledge that are manifest in disciplinary structures [83] and function via the interplay of knowledge and power [73, 80, 118]. Our critical discourse analysis not only focuses on game design and content but also further investigate and collect data about the games in the form of published materials that (1) were written by or extensively quoted from both production sources and commentator sources and (2) foregrounded the topic of diversity. Although audience research is beyond the scope of this article, this analysis permits the indirect consideration of reception: the production discourse could be interpreted as the negative space of audience reception.

5 Analysis of TCN

We introduce TCN to theorize about and analyze the characteristics and practices associated with the enduring marginalization and violence that trans individuals face in cyberspace. Despite their varied manifestations, such violence is interconnected and propelled by systemic enmity stemming from cis/heteronormativity. Cis/heteronormative power positions trans identities as non-normative and, so, perceived as deviations, rendering us expendable. Through the lens of necropolitics, this power has permeated digital spaces, operating as a form of digital necropolitics against trans identities, and shaping both player and designer norms and behaviors, leading to a series of violence, design neglect, and the living-cyber-dead of trans groups.

There is ideological persuasive potential inherent in games as a form of art through procedural rhetoric embedded in game mechanics and rules [34, 153]. Power can operate beyond these mechanics, subtly and culturally shaping players’ interactions, surveillance, and the formation of subjectivity [209]. These two modalities are complementary in TCN and collectively constitute a necropolitical war machine. We employ Mbembe’s descriptions of an UAV as a necropolitical war machine [46, 142] to analyze and theorize TCN: SENSING, TARGETING, and INVISIBLE KILLING.

5.1 Disclosure and Silencing: SENSING

The first stage of the TCN war machine is SENSING, which facilitates the necropolitical process of subdividing the population and categorizing groups based on prevailing cis/heteronormativity. The objective of SENSING is to identify individuals who differ from the norm and inquire why there may be hostility toward them. Mbembe characterizes this subdivision as a presupposition of biopower that precedes the assessment or declaration of disposability, asserting that “they [the conquerors]

do not establish a distinction between combatants and noncombatants, or again between an ‘enemy’ and a ‘criminal’... due to the racial denial of any common bond between the conqueror and the native” [142, p. 77]. If the conquerors here take the racial necropolitical operation to brusquely identify and cut off ties with the colonized population, and undisputedly classify them as alien, then TCN SENSING is the same—cis/heteronormative power recognizes and categorizes trans groups as aliens through identity orientation, or simply through their identity expressions or actions considered deviant.

TCN SENSING harms trans groups by dissolving privacy; exposing people to visibility risks [119, 161]; and causing loss of social connectedness as the group opts for silence for safety. Spade [192] emphasizes how the disclosure and disregard for privacy operate necropolitically to negatively impact trans individuals, limiting our life opportunities and increasing our vulnerability to violence. This point is echoed by Cárdenas [47], who highlights the significant harm from the disclosure of trans people, particularly those with mismatched identification documents that may impede their movement across borders, in accessing public facilities, or securing employment. Glissant [90] describes *opacity* as a right of all peoples to choose *not to be known*. TCN SENSING breaks opacity. SENSING manifests by exposing identity by design, disclosure by the community, and the (self-)surveillance of transgender individuals.

5.1.1 Identity Exposure by Designs. One way that TCN SENSING manifests is through designs that neglect the significance of anonymity for safety. Such design approaches are cis/heteronormative, operating under the assumption that every person’s identity may be revealed without consequence. Early scholars of virtual environments theorized that cyberspace would allow individuals to exist beyond the limitations of their physical bodies [43, 59, 77, 212].² This led to the belief that one’s physical body and identity would not affect their gaming experiences, given the anonymity afforded in online spaces [96]. In early queer theory, anonymity led to discussions on Utopian digital bodies, as in Castronova’s description of synthetic worlds that transcend physical limitations, where individuals can have any desired body [50]. Furthermore, cyberfeminism interprets the Internet as possessing liberating qualities that could free individuals from the constraints of gendered bodies [42, 50]. However, this notion of liberation existed within a set of premises that have been criticized for being overly Utopian and unrealistic to marginalized individuals [122, 224].

Trans individuals cannot simply disregard our bodies because many aspects of our real-world selves unavoidably participate in cyberspace. The emergence of voice-based communication in games enables fluid multiplayer games and is foundational to online play experiences [218]. Despite the benefits, voice communication also enables surveillance of players’ linguistic and vocal characteristics, leading to profiling based on voice [95]. Further, public information on user accounts enables “profile or avatar stalking” [162]. For many trans people, when our voices are considered deviant, we cannot pass as cisgender, leading to the inability to maintain anonymity and thus being “outed” [97] through surveillance by others. Numerous cases highlight this issue (e.g., [18, 121, 135, 144]).

5.1.2 Disclosure by the Community. Biopower establishes knowledge of normality. TCN subconsciously shapes people in digital communities fueling cis/heteronormative discourse of whether a trans person passes. TCN SENSING is enabled through these shaped expectations that each non-passing individual, expression, or action considered deviant is conspicuous, compromising the privacy and invisibility that trans individuals require for safety [47].

This component of TCN SENSING is particularly effective in digital spaces where cis/heteronormative discourse has long dominated. There is queer discomfort of “not fitting in” when we face

²These visions are reflected in science fiction postulating virtual spaces (e.g., [195]).

the dominant comforts of cis/heteronormativity in public spaces [7, 91, 200], which compromises *hetero-comfortability* [40]. The dominant group in this space can easily spot anomalies and tell who is uncomfortable, such as trans people trying to avoid voice chat or pretend they do not have a microphone [121].

Brett [40] presents a case study in *VRChat* [254], an online virtual world where players interact through 3D avatars that are animated with bodily tracking and instant voice-based chat. They use a feminine avatar in cyberspace—a match to their identity—yet face sexual harassment because of this. However, speaking to stop such harassment led to being called a “trap”—a slur to describe a man with a feminine appearance [38]. This is stigmatizing because it implies that individuals use their femininity to deceive cis-heterosexual men into becoming objects of their sexual desire [40, 70, 180, 193]. Cis/heteronormative assumptions here led to attacks through TCN SENSING.

5.1.3 (Self-)Surveillance. TCN SENSING manifests as a disciplinary power in self-surveillance. Rather than relying on enforced rules, SENSING influences individuals through surveillance and normalization, compelling non-normative bodies to internalize the authoritative gaze [81] that renders the non-cis/heteronormative as deviant. This amplifies (self-surveillance) and segregation.

While a safe choice is to avoid voice-based communication or conceal microphone usage, this restricts access to the gaming community. Such choices lead other players to question the authenticity of our identities or our commitment to team play. As a result, trans individuals often find ourselves isolated and silenced within the gaming community, unable to assert our voices or exercise our potential for resistance. Consequently, we are unable to experience the freedom and equality enjoyed by others in digital communities.

Gray [94] affirms a similar notion in another marginalized community: “many women of color segregated themselves and only interacted with other women of color” [94, p. 118]. For trans groups, as perhaps for other marginalized groups, our place at the margin is often the result of TCN as opposed to retreating there on our own [142].

Segregation, self-surveillance, and the threat to safety are not only results of the TCN SENSING but serve to ensure its sensors’ effectiveness. This surveillance function echoes the *examination* aspect of Foucault’s theory of disciplinary power. Foucault draws on Bentham’s *panopticon*³ to explain how such surveillance contributes to disciplinary power and control [81]. The design of the panopticon ensures a persistent perception of being monitored [81, 209, 215], as a way to stimulate prisoners’ self-monitoring and self-regulation. When trans individuals’ anonymity is not guaranteed, we must inevitably self-monitor and regulate, resulting in our silence as a means of self-protection [46, 47, 94, 121].

(Self-)surveillance propels trans individuals toward a state of living-cyber-dead, as we face the dilemma of either risking increased violence or forfeiting our voices and social connectedness. Králová [125] explains that “Because human beings are inherently social, losing meaningful social connections and roles are likely to be devastating.” [125, p. 241]. Similarly, Mbembe [141] describes “living death” as the dehumanization, loss of agency, and suppression of voice and freedom experienced by those subjected to other necropolitical forces. Emerson [71] illustrates how the impact of necropolitics extends beyond external forms of power and control, seeping into the internalized behaviors of subjugated populations. As technology is designed from a cis/heteronormative

³The panopticon is an architectural design conceptualized by the English philosopher Jeremy Bentham in 1787. In this thought experiment, a donut-shaped prison building is central, with a tower facing outward toward the inner surface of the donut. The building is divided into cells extending from the inner to the outer ring, each equipped with two windows that one facing the tower and the other facing outward. The arrangement creates a continuous sense of being under surveillance for the inmates, leading them to behave as if they are constantly being watched, regardless of actual observation [81].

perspective, the TCN war machine's SENSING is facilitated within a burgeoning gaming community [46, 141]. Its impact is life-threatening to trans people, making them into the living-cyber-dead.

5.2 Mis-Representation and Stigmatizing: TARGETING

The TARGETING stage of the TCN war machine serves to legalize the fictional notion of transgender people as enemy by illegitimizing and stigmatizing trans identities. The portrayal of trans characters in video games, as in other media, plays a crucial role in providing social recognition [206]. When such representation is demeaning, employing tropes that perpetuate stigma, it not only undermines the acknowledgment of the existence of trans individuals [68, 132] but also reinforces transphobic ideologies, TARGETING us for death. This anchors the extension of biopower by establishing a stigmatized identity within the population [84]. These representations flatten identities, monopolize discourse, and continue stigmatizing trans individuals, leading to further marginalization and erasure of agency over identity, contributing to the success of TARGETING.

The effectiveness of the TARGETING can be evidenced by the potential ideologically persuasive nature of media and games. Cis/heteronormativity is inherently embedded within the design process, where the mechanics of a game exert a socio-cultural influence on players by conveying ideology. Game design involves crafting choices [178], which can expressly be designed to persuade [34, 153]. This aligns with Fuchs' observation that "Ideology works best when it distorts reality in such a way that we do not notice the distortion because everything seems to be alright" [86, p. 147]. Rendering trans identities as deviant and disposable with the TARGETING stage of the TCN war machine can effectively persuade, publicize, and legalize the enmity toward trans people to the audience in an imperceptible manner.

TARGETING deprives trans people of authenticity and agency over our social identities. Králová [125] defines the loss of social identity as the loss of the way people understand themselves in relation to other persons and to the world around them—who they are through how other people and the world identify themselves [61]. The loss of social identity represents one of the core losses embedded in social death, which is a direct result of stigmatization [37, 125]. Agamben [2] specifically notes how stigmatization acts as the powerful weapon of and for the dominant power to engage in genocide by marking the killable body as an easy target. TARGETING stigmatizes and takes over trans groups' social identities' representations, producing trans groups' living-cyber-dead states.

5.2.1 Moral Service. Trans NPCs are used as victims to serve cisgender heroic narratives; we look at Kosciesza's study of trans NPCs from three well-known video games [124], which we include in our corpus [233, 243, 252]. Kosciesza's findings reveal that these characters are positioned to convey political implications and serve moral purposes within the narrative, while being heralded by the industry as evidence of diversity [124]. For instance, the lead writer of *Dragon Age: Inquisition* [233], David Gaider, confirmed that the reason for Krem's presentation was only to support the plot of cisgender protagonists [124, 217]. This type of representation, where trans identities are included in narrative merely as tokens of diversity, signifies a denial of their subjectivity, treating us as necropolitical objects. This echoes concerns raised by trans researchers, who argue that the inclusion of trans people in the process of knowledge production without recognizing us as holders of relevant understanding further marginalizes us [26, 149, 160].

This TCN TARGETING operation is also the long-existing manifestation of cis/heteronormative power and domination in the game industry. The dominant subjectivity in the mainstream video games industry, which often encompasses the development, marketing, and monetization [228] of

the big-budget massively popular games [172], still springs from cultures and practices of white cis/heteronormative masculinity [12, 44, 115, 152, 210]. Fron et al. [85] identify the *hegemony of play* to describe the industry’s conventions, which reflect a dominant cis/heteronormative attitude [39] of normalizing their dominant discourse and differentiating from the subordinated groups. Built based on such a relationship between being and belonging, those who are considered to be not belonging to the dominant group, such as women, gays, and lesbians, are put in an inferior position [29, 67, 184], whereas the trans group, positioned on intersectionality of identities [27, 55], is further considered “low-value” and exploitable to serve for cis/heteronormative narratives. Trans characters, therefore, are flattened by the designer and become mere moral service providers or narrative tools that are capable of being sacrificed when necessary to provide the impetus for the success of the protagonist, reflecting Mbembe’s description of colonized and slaved people that “power over the life of another takes the form of commerce ... as a mere tool and instrument of production” [142, p. 75].

5.2.2 Stereotype and Identity Deception. Trans portrayals in video games often involve stereotypes, especially the trope of identity deception. This approach appears in a number of games, identifying trans characters as deceptive. *Breath of the Wild* [244] portrays a trans woman character as an object of ridicule and an intruder into private female spaces [75, 110, 132]. This oppressive discourse bears similarities to the way the #Gamergate movement blames female players for encroaching upon male-dominated digital spaces [29, 67]. A similar case can be found in *Leisure Suit Larry 6* [249], where the PC, Larry, engages in sexual activity with Shablee, a black trans woman NPC. When the game reveals an erect penis beneath Shablee’s clothing, Larry reacts by vomiting. Thach [206] describes this as a typical “trans shock” discourse, portraying trans identity as deceitful and manipulative in order to seduce and harm others [30, 180].

Positioning trans people as deceivers is a common [19, 105, 136, 189, 193, 223] cis/heteronormative necropolitical discourse, suggesting that trans identities are falsehoods to conceal the truth of assigned sex [168, 180, 193]. Passing is central to the deceiver narrative, which justifies the sex-examining gaze and punishment [18, 30, 40, 76, 93, 121, 135, 136, 150] for deception. It is worth noting here that the notion of passing, frequently associated with trans identities today, originated from racial passing within the context of white supremacy’s racial classifications and apprehension around the undetected passing of African Americans [111]. If the concept of racial passing and the depiction of identity deception constitute the racial necropolitical operation designed to legitimize the censorship, violence, and execution of people of color, then the stigmatization of identity deception represents the TCN TARGETING operation aimed at trans identities. Mbembe describes how constituting enslaved or colonized people as non-normative or non-valuable populations by highlighting their “crime” and amplifying colonists’ concerns about their escape [142]. This criminal framing renders non-normative populations as less worthy of living to the expression of sovereignty and domination—a form of TARGETING. It reduces us to deceivers and objects of ridicule in order to render us as less worthy of existence, therefore legitimizing discrimination by perpetuating the dehumanization of trans identities.

5.2.3 Objectification through Sexualization. Objectification reinforces cis/heteronormative discourse [136, 216, 220] positioning trans identities as subordinated groups. Objectification involves reducing trans individuals to their bodily components and sexual performance, encompassing processes such as sexualization, dehumanization, fetishization, and commodification. We draw on two examples from our corpus, *Cyberpunk 2077* [237] and *Grand Theft Auto V* [248]. In *Cyberpunk 2077* [237], a trans figure has been used as a profitable model for an advertisement poster with exaggerated, hypersexualized content [132]. Similarly, in *Grand Theft Auto V* [248], trans characters

are only depicted as exoticized sex workers.⁴ One of these trans characters, a stripper named Peach, is voiced by a cis man. Peach is consistently intentionally misgendered and subjected to ridicule through in-game dialogue with the PC.

Sexual objectification of trans identity occurs when the cis/heteronormative discourse encourages individuals to perceive non-cisgender individuals as sexual curiosities [79]. Vergueiro [216] connects the sexual commodification of trans identities with cisnormative colonization and explains how this colonization of trans bodies renders our lives disposable. Indeed, sexual objectification is a typical operation of necropolitical colonization, which is no exception in digital spaces, where TCN TARGETING legalizes the consumption of trans bodies.

5.2.4 Villainization and Bioessentialism. Necropolitical power *constructs enemies* by highlighting their racial essence to anchor the “society of enmity” [142]. This encourages the exercise of biopower, regulating the distribution of death [84]. A number of games directly contribute to this use of necropolitical power to villainize trans characters, drawing on bioessentialism as an argument for their trans nature.

For instance, in *Persona 4 Golden* [232], a major plot point centers on a character’s desire to transition as an antagonist that must be fought and killed to proceed [206]. Players are must confront this antagonist to progress the narrative by persuading this character to accept their assigned sex. This signifies a view that transness is inherently threatening while highlighting the ideology of bioessentialism [132].

The association between trans identity, mental illness, and antagonistic roles in video games is not surprising, considering the historical representation of trans people as villains in media [23]. In *Grand Theft Auto: Vice City* [247], one character known as “The Psycho” is depicted as a mentally ill enemy who is described as a “man dressed in women’s clothes.” Although this portrayal provides no insight into their gender identity, the game correlates gender nonconformity with mental instability. Similarly, in *Resident Evil—Code: Veronica* [236], one of the antagonists, Alfred Ashford, begins cross-dressing as their twin sister, which leads to their mental stability deteriorating, turning them into a killer.

In addition, a notable example is how an NPC was localized to be transgender for the US market *specifically* to make committing violence against them more palatable for players. Poison is an enemy in the USA version of *Final Fight* [235]. Originally conceived as a cis woman, Poison was subsequently labeled as a trans woman during the game’s localization process to avoid discomfort among US players regarding hitting (cisgender) women in the game [206]. The underlying logic revealed by Poison’s redesign for localization suggests the notion that “trans women are not real women” and, therefore, are able to be the villains, creates a distinction that allows for violence against trans women while considering it unacceptable to harm cisgender women. This localization emphasizes the superiority of a “natural body”, thereby supporting bio-essentialism and the notion of gender immutability [36, 148], ultimately contributing to enmity and the denial of trans identities. By associating characters’ trans identities with mental illness, portraying them as murderers, or casting them as villains within the game, these representations stigmatize trans identities, hindering our social recognition, contributing to TARGETING in TCN.

5.3 Deprived and Commodified Gender: INVISIBLE KILLING

The INVISIBLE KILLING stage of the TCN war machine serves to accomplish the erasure of trans discourse by unnoticed means through designs in digital spaces. Mbembe takes the siege to exemplify

⁴Depicting trans sex workers is not inherently problematic, as they deserve representation as much as anyone else. The point here is that this game renders all trans feminine characters in the game world as the exoticized and sexualized carriers of cis-hetero-desire. This strips them of the agency deserved by all trans people, sex workers or not.

the function of necropolitical INVISIBLE KILLING where “besieged villages and towns are sealed off and isolated from the world ... the besieged population is deprived of their means of income” [142, pp. 82–83]. This serves to execute the population by depriving them of their sources and agency of survival, without obvious bloodshed, screams, or awareness from the broader population. It is a well-prepared assault in the form of constant, low-intensity conflict held by one party’s dominance.

In TCN, this siege of INVISIBLE KILLING manifests as the dominant normative group using its well-designed systems, through the sources and agency deprivation, to maintain prolonged, indirect, and non-drastic violence and elimination of targeted non-normative groups in digital spaces. Because its violence deprives, which is indirect and non-drastic, this elimination is usually invisible to other groups, which is its key feature. Because it is well designed and held by the dominant group, it is often given a guise of certain legality or excuse to ensure its longevity.

The effectiveness and principal harm of TCN INVISIBLE KILLING are ensured by its connection with TCN TARGETING. Accompanied by TCN TARGETING’s stigmatization of trans identities, INVISIBLE KILLING eliminates trans identities’ agency by disintegrating the digital bodies they rely on and depriving their expression of authentic identities. As a result, the trans individual’s digital body is no longer capable of resisting the power of cis/heteronormative discourse, while the social death is progressing along with the meaning of their digital body disintegrated [125], entrenching their living-cyber-dead states even if they continue to live [71, 142] in digital spaces. Although the interactive media design embodying the abovementioned features of TCN INVISIBLE KILLING can take on a variety of forms, the following analysis of this section takes one perspective through the identity deprivation by gender-blindness and gender commodification to reveal this stage of the TCN war machine.

5.3.1 Identity Deprivation through Gender-Blindness. The deprivation of trans digital bodies and identity expressions through gender-blindness rhetoric is one form of INVISIBLE KILLING. Gender-blindness rhetoric suggests that an individual’s gender- or identity-based factors should not be considered when deciding how they are treated in society or claims that there is no ontological hierarchy among all genders—that is, claims “we are all trans or queer” [159]. It is a necropolitical strategy of cis/heteronormative discourse that enables perpetuating cis/heteronormative privilege. This legalizes the oppression of trans groups by ignoring the privilege of cis/heteronormativity and trans lived experience with a call to innocence. Radi [159] draws parallels with racial color-blindness rhetoric to further define this rhetoric as an “ignorance producing [mechanism].”⁵ Racial color-blindness refers to the belief that systemic advantage based on color should have no influence on what people can accomplish [49, 64, 222], which has been critiqued by scholars [35, 49, 66, 87] that it perpetuates racialized structures regulated by social and political powers and practices by denying the existence of racial privilege [201, p. 85]. Similarly, as color-blindness “tends to detach white people from their responsibility and complicity with racism” [159], gender-blindness rhetoric is a form of ignorance that equates not-seeing, ignoring, and not-engaging with differences to fairness. Therefore, designs with this rhetoric not only enable but also legalize the invisible way of violence that neglects trans people’s lived experience, deprives their identities and digital bodies, and eliminates the agency for their discourse.

Taking the design of the game *Sky: Children of the Light* [250] as a case study can contextualize this identity deprivation of INVISIBLE KILLING. *Sky* is an open-world social adventure game that focuses on multiplayer online-social mechanics and social experience features [207]. The game encourages social activities among strangers, and its design also reflects this aspirational experience: the

⁵Radi’s description of “ignorance producing mechanisms” comes from their epistemologies of ignorance. For detailed explanations, see the works by Radi “Trans* Epistemology” and Sullivan and Tuana “Race and Epistemologies of Ignorance” [201].

majority of game levels are designed to require the cooperation of at least two players. The game design's original intention is toward gender inclusivity by "keeping their age, race, and gender neutral, so people can be themselves without being labeled or judged," and suggests players project themselves into their characters to experience social activities [208, 229].

This design, however, falls into the trap of gender-blindness rhetoric by neglecting the importance of gender expression and digital identities for trans players to manage their social activities with other players, especially when the game mechanics center social features. In addition, months after the game's release, the in-game store of *Sky* began selling commodified gendered customization products through a series of microtransactions, charging players who wish to emphasize their identity expression while keeping players who cannot afford it in a state of living-cyber-dead.

Designing for identity deprivation fails to fulfill *Sky*'s promise of self-projection, particularly for trans players seeking identity affirmation and expression. Self-expression and identity representation are vital aspects of social interaction, as they enable marginalized groups to assert their voices and affirm their identities [39, 186]. Baldwin [17] has noted that "Trans gamers in general tend to create avatars who reflect their ideal selves." This is supported by McKenna et al. [143], who highlight how avatar customization provides both internal and external validation of gender identity and transition goals, allowing players to act out aspirational appearance goals, becoming a key part of gender affirmation for trans players. However, in the case of *Sky*, the implementation of identity deprivation hampers trans players' ability to project themselves onto their characters, which conflicts with the game's claimed goals. By depriving them of their means of identities, besieged trans communities and discourses are sealed off and isolated from *Sky*'s society.

Sky creates a digital deathworld where trans digital bodies and identity expressions are erased, which is accompanied by the loss of their social identities—their disintegrating is also invisible to other groups—they may continue to live, but are incapable of self-actualization in this social digital world, becoming the living-cyber dead. While the game's design is motivated by goals of creating a gender-inclusive playing experience, the design contributes to *INVISIBLE KILLING*. While this may be unintentional, cis/heteronormative gender blindness eliminates trans discourses in a non-draconian manner under a guise of gender inclusivity; even the game's designers may not be aware.

5.3.2 Commodified Gender. TCN *INVISIBLE KILLING* strengthens its effectiveness and ensures its longevity by connecting the purchasing power with gender expression. Plundering and reproduction is a feature of the necropolitical war machine, as Mbembe describes, "a war machine combines a plurality of functions. It has the features of a political organization and a mercantile company. It operates through capture and depredations and can even coin its own money" [142, p. 85]. Echoing this perspective on the productivity of necropolitics, Snorton and Haritaworn [191] claim that "neoliberal ideologies provide biopower with new ammunition in the creation of life-enhancing and death-making worlds, and offer an insidious addendum to rationales for population control. The consequence of this logic effaces the way power and life are maintained and reproduced through the deaths of certain others."

By repackaging gender identities that have been exploited and deprived into commodified genders for consumption, *INVISIBLE KILLING*'s slow and constant violence continues under the legality of opening options of consumable customization products. By doing this, TCN can deny its elimination of trans discourses and digital bodies—trans communities are not besieged because there is an escape—it costs money, though.

Back to the case of *Sky*, players can pay, with real-world money, to unlock gendered customization items for their character—options for retaking their digital bodies, identity expression, or character representation are restricted to those who invest money to make this possible. Although the game designers claim that they erased gendered appearance items to achieve gender-inclusivity, these

items are commodified and put back on the counter for selling, revealing neoliberal ideologies of late-capitalism [137] and fueling the power of TCN and its war machine’s INVISIBLE KILLING. Similar instances of microtransactions dominating aesthetic customization are observable in other popular video games. For instance, Ubisoft’s *Roller Champions* [253] appears not to assign overt gender identifiers in the character creator interface, but all customization options are sealed behind microtransactions such as “loot boxes” [15]. This reward system allows players to invest real-world money to obtain arbitrary items, arguably a form of gambling [151, 219]. Player customization options for identity expression and affirmation are profitable, turning exploitation into INVISIBLE KILLING.

6 Discussion: Imagining Resistance Strategies

We analyzed how TCN operates throughout digital media to maintain trans people’s social cyber-living-dead status and relation of enmity. Like Mbembe’s necropolitical war machine [142], the TCN war machine regulates trans groups through SENSING, TARGETING, and INVISIBLE KILLING. Without anonymity safeguards, both exposure by designs and by the community allow trans identities to be SENSED. Misrepresentation is the TARGETING phase, which establishes SENSED trans identities as disposable and valid targets, through discourse. The interplay between SENSING and TARGETING facilitates trans-targeted killing, while identity deprivation through gender-blindness rhetoric and gender commodification describes one kind of INVISIBLE KILLING technology that reinforces this synergy by effectively eliminating trans discourses from the digital realm without raising suspicion.

To counter the TCN war machine, we imagine resistance strategies. These are synthesized from our analysis with prior research:

- Ruberg’s exploration of queer game technologies [176];
- Cárdenas’s operations of the *cut* to disrupt surveillance, the *shift* to adapt for visibility, and the *stitch* to foster solidarity [47, 133]; and
- trans technologies that support transgender goals specifically [100, 103, 104, 221].

The war machine can be dismantled both bottom-up, by the oppressed, and top-down, by traitors against the oppressor class. We explore intersecting top-down and bottom-up approaches. Through these strategies, we aim to promote the liberation of trans communities, organized in terms of ANONYMITY, AUTONOMY, and ASSEMBLY. In describing these strategies, we combine existing works made by trans communities and speculative designs and suggest how these works and designs can counter and dismantle the TCN war machine.

6.1 ANONYMITY

ANONYMITY aims to disturb SENSING to protect trans people by creating safety without the expense of our engagement with cyberspace, transcending the discussions of visibility and invisibility. Trans studies grapple with the complexities of visibility and invisibility. Academic efforts to encourage queer and trans individuals to be visible are usually problematic [117] and discussions offering binary visible or invisible restrict trans resilience [47]. Similarly, Aizura [8] claims that “invocations of invisibility and dehumanization don’t quite tell the whole story.” Therefore, ANONYMITY in presenting work highlights the possibility of a shift from a focus on a static state of visibility or invisibility to the dynamic state of trans identities. The goals that ANONYMITY seeks to address include questions of how to allow trans groups to live in broader or public digital spaces in a safe mode, how to be invisible to hostile groups while being visible to allies, how to provide trans groups the flexibility to adjust between visible and invisible, and how to dismantle the (self-)surveillance or social withdrawal caused by TCN SENSING. We describe *obfuscation*, *double entendre*, and *mutability* of ANONYMITY.

6.1.1 Obfuscation. Obfuscation for ANONYMITY involves creating aesthetic or artistic methods to refuse observation while expressing trans identities, which enables trans lives and avoids either TCN SENSING's disclosure or INVISIBLE KILLING's besiege and deprivation. This concept reflects what Haimson et al. [102, 103] describe about trans tech that "allow[s] trans users the changeability, network separation, and identity realness" [102] and "involve highlighting aspects of trans identities and experiences, sometimes using artistic means" [103]. Haimson raises Shabbar's work [183] as an exemplar, using algorithmic uncertainty to counter cisgender-imposed surveillance systems.

The viability of obfuscation for ANONYMITY can also be seen in more existing practices within the trans community, and some practices create aesthetics of deviance, queerness with illegibility, or low pixel density to counter TCN SENSING. For instance, Pozo [155] shows how trans developers apply mesmerizing but illegible visual and narrative aesthetics to achieve self-expression while balancing the distance and closeness with players, as an obfuscation strategy to refuse consumptive gazes. In addition, Blas [32] develops the project of *Facial Weaponization Suite* by amalgamating the faces of various individuals into a mask to assist trans individuals in evading the biometric facial recognition surveillance systems that may jeopardize their safety. This project, as Blas claims, "invests in an opacity that conceals against such readability and signals an irreducibly othered presence ... [and] is a collective and autonomous self-determination of sexuality, a styling and imprinting of the face that evades identificatory regulation."

6.1.2 Double Entendre. Building on obfuscation, double entendre suggests a method of creating trans discourse that is visible to trans allies but invisible to hostile groups, allowing trans lives to enter broader cyberspace. Narrative or content created by double entendre engages in metaphor for trans experience that otherwise reads as something altogether different. It can be self-consistent and complete even without revealing trans topics, making trans topics visible to allies but almost invisible from cis/heteronormative perspectives.

The double entendre ANONYMITY strategy is also a practice of *de-othering*. TCN SENSING creates conceptual "others" from the dominant social group [113]. De-othering reduces the differences between identity groups to the same identity [51]. This refutes biopower's subdivision and TCN SENSING.

The game *Celeste* [241], developed by trans designers, exemplifies the practice of double entendre. The player controls the PC Madeline to climb Celeste Mountain. Madeline is a trans woman and the gameplay is a metaphor for challenges in the transition, although her identity is not clearly revealed in the game and the game is also not ostensibly about the trans story [13, 58, 188]. For non-trans players, the game's content and story are about overcoming difficulties; meanwhile, for trans allies who perceive subtle indications of Madeline's trans identity (e.g., the small trans flag on one cut scene, her hormone replacement medications in the background), the game tells a trans story and experience from its trans developers.

6.1.3 Mutability. Mutability empowers trans individuals with the ability to adjust their identities between visible and invisible as a form of ANONYMITY. Mutability is inspired by Cárdenas's *shift* poetic operation. In Cárdenas's description, she takes android *Cindi Mayweather*'s skin color shift from white to brown as an example [47, pp. 72–74] to discuss the importance of this ability for trans people of color to survive—shifting between passing invisibly as cisgender for safety and standing onstage to speak out as trans.

Existing practices that provide ANONYMITY for the trans community by empowering mutability can exemplify how to deploy this concept. For instance, in voice-based communication, scholars' practices (e.g., [3–5]) on voice-modulating training or tools provide trans people's mutability by enabling their voice to shift to pass, rendering them invisible to SENSING. Moreover, Haimson et al. [103], through community-based participatory design, imagine wearable and tangible shifting

clothing technology as a way to address trans shifting challenges and mutability needs that “display the fluidity of one’s gender or to disclose one’s trans identity in some settings but not others.”

6.2 AUTONOMY

AUTONOMY aims to dismantle the TCN TARGETING’s stigmatization and INVISIBLE KILLING’s identity deprivation. AUTONOMY empowers trans people, highlighting how we can find our own ways to narrate our social identities and create our own discourses for play, design, and interactive media. Shaw and Ruberg [187] note that queer discourses “destabilize and reimagine video games themselves” through ways of reading games queerly, queering game play and design, and queering game technology. The AUTONOMY of trans identities in interactive media and games can take inspiration from this perspective, recognizing the potentiality of trans community and discourses on creativity to counter the cis/heteronormativity of the TCN war machine. In the following sections, we suggest two notions of autonomy strategies through trans communities’ bottom-up trans(-ing) games and play and empowering trans sovereignty bottom-up or top-down in designing or developing their own games.

6.2.1 *Trans(-ing) Games and Play.* Imagining and discussing AUTONOMY as trans resilience to counter the TCN war machine requires valuing trans subjectivity in interpreting interactive media. Such initiatives retake cyberspaces from the bottom-up. Trans(-ing) games and play is a form of AUTONOMY around how trans players interpret, recognize, and identify the goal of gameplay, which may be different from that assigned by the developers. We reconstruct the meaning of play to achieve a preferred self-consistent game for individual fun.

This trans embodiment in reconstructing the game’s meaning is significant and needs to be recognized [175]. Taking inspiration from Prosser [156], this lens for trans game analysis involves viewing official game content as one natural body and its original gameplay as one assigned by its developer. Trans players may disagree with the assigned gameplay, to get rid of the natural body of a game, and achieve a self-narrative. That is, trans(-ing) a game and play of AUTONOMY suggests the game’s natural body may not always be desirable and can be reconstructed—transitioned—in service to individual desire, self-expression, self-narrative, or self-play.

Trans(-ing) the games and play can take inspiration from queer game studies: *queer reading* [154, 170, 227], *playing queerly* [12, 107], *queering the game* [171, 174, 186], or engaging with glitch [88, 107]. Shitty user experience games may be “no fun,” challenging the notion that games should be designed in service to cis/heteronormative concepts [54, 170]. Trans autonomy can be built based on these fruitful reflections, taking a step further to focus on the connection between digital spaces and trans identities, highlighting what trans identities mean in navigating the digital spaces and, therefore, refusing cis/heteronormative discourses, embodiments, and stigmatizing rhetoric of trans identities in digital spaces.

Prior trans scholars have affirmed this AUTONOMY strategy and provided examples. For instance, Berge [25] takes the concept of un-playing games as a theoretical approach to discuss trans play in digital gaming. Further, she takes the perspective of trans play to critique the transphobic logic of *Dungeons and Dragons* [24]. Similarly, Schmalzer [181] takes speedrunning as the trans practice of discovery and the glitch [88] of normative rules. In addition, Dym et al. [69] recognize the potential of trans and queer communities in reproducing fan fiction related to games, emphasizing the creativity of trans and queer discourse in the reading of media.

6.2.2 *Empowering Trans Sovereignty.* The AUTONOMY strategy of empowering trans sovereignty advocates for recognizing the capability and worth of trans individuals in creating their own games or technology. This happens through either knowledge-sharing from senior developers or making easier-to-use development tools, to encourage practices, efforts, or investments in assisting

trans individuals to access tools of creation. LaPensée et al. [126] define sovereignty in video game development as the “ability to exercise free will and self-expression,” where “video games can be dynamic sovereign spaces for Indigenous representation and expression when the self-determination of Indigenous people is supported.” Supporting and empowering trans sovereignty aims for ordinary trans individuals to have the opportunity to participate in constructing their discourse in digital spaces. In so doing, interactive media can serve the interests of more people instead of leaving development to dominant cis/heteronormativity groups.

Examples of supporting trans sovereignty in digital spaces through knowledge-sharing from senior developers can be found in existing trans communities and ally practices. Baird and Harrer [16] describes how they assist a trans allyship game prototype as external game designers and queer subject matter experts to help marginalized creators develop their strategies in collaborative game design spaces. Likewise, Haimson’s works (e.g., [100, 103, 104]) demonstrate how to invite and facilitate trans groups to design and develop trans technology for the community collaboratively. Meanwhile, the potentiality of implementing the easier-to-use development tools for trans sovereignty in game developments to support trans autonomy is also confirmed in some discussions. Bragança et al. [39] discuss how the *Twine* development tool allows inexperienced users to produce and publish their works independently. Other scholars echo this perspective [108, 165] and claim the use of *Twine* by marginalized groups for game development and distribution to challenge the hegemonic context of the game industry as “*Twine*’s revolution” [108]. The flourishing of trans and queer discourse within the *Twine* community suggests that advocacy around emerging, easy-to-use development tools can be fruitful for trans autonomy.

6.3 ASSEMBLY

ASSEMBLY identifies ways that trans groups can take back their agency for digital social connectedness, creating or growing their communities, finding allies, and, therefore, countering the TCN war machine. ASSEMBLY connects trans people separated by borders of the TCN war machine, across physical, spatial, cultural, or digital distance. ASSEMBLY is not only urgent and important but also needs to carefully address ANONYMITY. This suggests that ASSEMBLY needs to consider questions of what digital forms of communities trans groups need and how to protect trans groups’ digital visibility in finding allies or building social connectedness. We reflect and present the discussion on assembly from two ways from developers’ top-down perspective and trans individuals’ efforts.

6.3.1 Design for Digital Trans Spaces. For trans or trans-ally designers or developers, design concepts aimed at fostering ASSEMBLY for communities can be categorized into three areas—identity expression, safety, and information or resource sharing. Haimson et al. [102] illustrate these concepts by examining *Tumblr* as a prominent trans space, asserting that characteristics such as temporality, openness, change, separation, realness, and intersectionality fulfill the requirements of trans communities in digital environments. The analysis of *Tumblr* echoes trans resistance strategies in countering the TCN war machine, where the temporality and change enable trans mutability; the separation contributes to trans ANONYMITY; and openness, intersectionality, and realness support trans authenticity for AUTONOMY. Existing practices concerning designs that support trans communities also adhere to these three aspects.

Safety is of equal significance and is a central emphasis in many community practices. For instance, Starks et al. [194] developed *U-Signal*, a wearable technology aimed at enhancing trans individuals’ safety and fostering community construction. Likewise, Cárdenas [47] developed *Autonets*,⁶ a project focused on establishing wearable local mesh networks to enhance community

⁶More information about the Autonets project can be found on the web site of Cárdenas: <https://michacardenas.sites.ucsc.edu/autonets/>.

connectivity and safety by notifying all nearby individuals wearing another *Autonet* garment that assistance is required, along with indicating the individual's location. These two wearable technology prototypes offer insights into constructing safety within digital communities via collectively agreed-on communication networks.

Many sites and apps [100, 103] demonstrate the significance of information and resource sharing in the design process for trans communities, ranging from legal and medical resources to trans-friendly locations. Notably, Dominguez's **Transborder Immigrant Tool (TBT)** [48, 65] is one remarkable form of ASSEMBLY that addresses sharing. The *TBT* creates a combination of cell phones and applications for people to find water in the desert when they cross the border and for people to place water while recording and uploading its location. This asynchronicity points out its potential for supporting ASSEMBLY with considerations of safety and anonymity through temporality and spatial distance. Drawing inspiration from these established practices can aid in the reevaluation of the advantages and appeal of emerging trans community sites (e.g., [101]), indicating the features that designers and developers should consider to promote trans ASSEMBLY.

6.3.2 Assembly Needs Individual Efforts. For trans individuals, their (re-)creativity, experience, and topic or discourse-making can contribute to the overall ASSEMBLY. As the autonomy section points out, trans groups have huge potential for trans(-ing), retaking the digital realms and content, and expanding sovereignty and territory through platforms and community creation. This implies that fostering connections and trans solidarity to achieve collective assembly relies on individuals' contributions within shared ANONYMITY and AUTONOMY. For instance, both obfuscation and double-entendre for ANONYMITY are shareable and perceptible for allies, whereas trans discourses, communications, and autonomy activities are produced through and under this ANONYMITY protection—which is also reflected in how trans individuals and allies collaboratively contribute to Cárdenas's "*We Already Know*" workshop and performance [47, pp. 150–162]. Moreover, trans sovereignty demonstrates how knowledge-sharing and activities carry on throughout the community, indicating that trans individuals can be motivated to become designers and developers, transmit knowledge, thereby assisting others and further fortifying the community to achieve trans ASSEMBLY.

7 Conclusion

We establish a necropolitical theory for trans experiences of cyberspace so that it can be reified and resisted. To achieve this goal, we introduced the concept of TCN as a theory that explains how digital media enforce the disposability of trans people, turning their digital experience into one of living-cyber-death and turning their digital world into a deathworld. TCN elucidates the three-stage process through which its war machine operates, which includes SENSING, TARGETING, and INVISIBLE KILLING. By reflecting on each component of this war machine, we ideate how it might be dismantled by dismantling the respective components through ANONYMITY, AUTONOMY, and ASSEMBLY as resistance strategies against each respective component.

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