GBStudio and Platforms by Consent

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INTRODUCTION
GBStudio is a Javascript-based game engine with a compelling restriction: any game produced in the engine must be able to run on a Nintendo Game Boy, allowing users to export their games either to the web or to physical cartridges playable on original hardware. GBStudio, which boasts an intuitive and low-code user interface and a charming retro aesthetic, has inspired a renaissance of small independent games published online at itch.io and, occasionally, as purchasable Game Boy cartridges. GBStudio is a provocative case study for the emerging fields of engine studies and platform studies: unlike traditional platforms that are bound by the material constraints of hardware, and unlike commercial game engines like Unity and Unreal that emphasize limitless game development potential, GBStudio restricts the possibility space of development by artificially imposing limitations modeled after hardware.

In this project, I conduct a close reading of GBStudio through the lens of queer game studies, examining the engine's interface, source code, and emerging development community. I adapt Mattie Brice's framework of kink and consent to argue that GBStudio operates as a platform by consent, in which creators find pleasure in submitting to GBStudio's hardware limitations.

Game engine studies and platform studies draw connections between the materialities of hardware and the aesthetics of games. As Nick Montfort and Ian Bogost discuss in *Racing the Beam: The Atari Video Computer System*, hardware and software constraints have played a critical role in shaping game systems and mechanics. Game engines similarly limit what is conceivable in games by "sealing over" the "potential of code" beneath a content editor (Freedman 2018). In "Engineering Queerness in the Game Development Pipeline," Eric Freedman argues that "the space [in games] for possibility, for radical queer sensibility, cuts across game layers (image, interface, the architectures of software and hardware) and shrinks through the process of development," a process he describes as a "fundamentally messy [affair]–as points of friction that push against individual agency."

GBStudio complicates these readings. Despite its claim to a sort of platform authenticity via its ability to export games to Game Boy ROMs, the vast majority of GBStudio games are played online in internet browsers, not on a Game Boy machine or cartridge. In this context, the graphical and memory restrictions once presented by the Game Boy's modified Zilog Z80 CPU are instead simulated by a tangled, precarious stack of Javascript libraries. GBStudio, and the libraries that comprise it, is also open-source, meaning that anyone with Javascript knowledge can rework the engine to exceed the Game Boy's hardware limitations. Indeed, there is a vibrant community of

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developers who write plugins and mods that do exactly this. What does this simulated, exceedable hardware constraint tell us about game development pipelines and the people who play with smaller game engines like GBStudio?

I argue that queer game studies offers a vocabulary that might help us better understand the dynamics between designers, players, the GBStudio engine, and the Nintendo Game Boy hardware. In "Play and Be Real About It: What Games Could Learn from Kink," Mattie Brice uses kink as one such vocabulary. Brice describes an "experience arc to kinky play" in which consent, scene-setting and aftercare create a "cycle of wielding and receiving play between designer/game and player" that is respectful to and fulfilling of all participants' needs (80). Brice uses kink to consider the relationship between game designers and players; I adapt this framework to understand the relationship between GBStudio and its users, in which users find pleasure in submitting to constraints of hardware that they know they might be able to circumvent. Drawing from Brice, Freedman, and Bo Ruberg's writings on queer game design, I read the dynamic that GBStudio creates queerly in order to understand the potential of deliberate constraints in game engines. Rather than limiting queer potential, GBStudio demonstrates that constraint can create new opportunities for queer pleasure and play in the game development pipeline.

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