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Kaizo Mario Maker: ROM hacking, abusive game design and Nintendo's Super Mario Maker

James Newman, Bath Spa University, UK

Abstract

Released in late 2015 for the Wii U console, Super Mario Maker (SMM) is an extension of Nintendo's two-dimensional (2-D) 'Super Mario' series that offers the ability to create new stages using a suite of level design tools. However, despite initial appearances, I argue that SMM is not a Super Mario level maker, per se. The game creates a complex web of relations between professional and amateur design that simultaneously venerates Nintendo's designers and provides a platform for the creation of designs informed by an ethos standing in opposition to the principles it espouses. On one hand, appropriating the products and modalities of ROM hacking allows Nintendo to demonstrate its awareness of its games as they are played and played with while simultaneously neutralizing the practice of ROM hacking which it codifies as an 'illegal' act of software piracy. Most interestingly, however, is how Nintendo balances the celebration and reinforcement of its core design principles of player advocacy, inclusivity and accessibility alongside the altogether more ruthless, even openly hostile, designs evident in the genre of ROM hacks known as 'Kaizo' designs. That Nintendo explicitly showcases such levels in its promotional materials for SMM seems, prima facie, utterly at odds with its game design principles and the celebratory nature of the SMM package. However, following Wilson and Sicart's (2010) work on 'Abusive Game Design', I suggest that SMM operates as a 'dialogical' platform. By foregrounding the level creators' identities and their status as amateur designers, SMM allows and encourages the production of 'unfair' level designs, while simultaneously sanctifying Nintendo's authorial principles and the underlying player-centric design ethos of the Super Mario canon. As such, in addition to operating as a totemic object celebrating Super Mario's 30-year anniversary, SMM can be read as part of Nintendo's project to reclaim Mario as an object of design.

Super (Kaizo) Mario Maker

Released in September 2015 for the Wii U platform and coinciding with the 30th anniversary of the influential Super Mario Bros., Nintendo's Super Mario Maker (hereafter SMM) is a complex object. Shipping with a lavishly illustrated Artbook (Nintendo, 2015a) complete with original hand-drawn sketches of levels and characters, SMM is a totemic object commemorating – even mythologizing – Mario's heritage and giving a rare glimpse into Nintendo's closely guarded development practices (see Parish, 2015; Ryan, 2012; Sheff, 1993). Equally importantly, SMM is an extension of Nintendo's two-dimensional Super Mario Bros. series whose distinctive offer is to enable players to create, share and play their own new Super Mario-themed stages using a suite of user-friendly level design tools. SMM is certainly a videogame but, more importantly, it is a videogame creation platform and distribution network that apparently offers to share Nintendo's inestimable expertise with a new generation of designers.

However, I argue that if we look more carefully at the way the game is marketed and its tools are structured, the veneration of Nintendo's designers is partly, and counterintuitively, achieved through the creation of a context within which conspicuously amateur designers create levels underpinned by a design ethos that stands in direct opposition to the principles Nintendo espouses. As such, SMM is at the heart of a complex web of relations between professional and amateur design and the play, production and consumption of corporate- distributed games.

My aim here is to show how Nintendo balances the celebration and reinforcement of its core design principles of player advocacy, inclusivity and accessibility alongside the promotion of altogether more ruthless, even openly hostile, designs evident in the genre of ROM hacks known as 'Kaizo'. Drawing on Wilson and Sicart's (2010) work on 'Abusive Game Design', I suggest that SMM operates as a 'dialogical' platform. By explicitly foregrounding level creators' identities and their status as amateur designers, SMM encourages the production of 'unfair' level designs demonstrably unlike Nintendo's own creations. In this way, SMM is able to sanctify Nintendo's authorial principles and the underlying player-centric design ethos of the original Super Mario canon, thereby (re)claiming the Super Mario Bros. series as an object of (Nintendo's) design.

Anyone can make it. Everyone can play it

Using the software, it is clear that SMM is not simply a playful environment within which to design but rather one in which game design and game play are virtually indistinguishable. Referencing Nintendo's earlier design-led titles Mario Paint (1992) and WarioWare DIY (2009), SMM items sing their names along with the constant backing music when selected with the stylus, mistakes are corrected by tapping the 'Undo Dog' icon, and the cursor is represented on the TV screen by a human hand – or a giant cat's paw. SMM is a videogame creation platform but it is just about as far from a game development environment like Unity as one could imagine. Indeed, in keeping with the aesthetic of Mario's worlds, items wear beaming smiles, and Easter Eggs abound adding new design features and functionality as they are found by the investigative player/maker. The approachability extends beyond the kawaii aesthetic and, as Altice notes, the game's focus on object and enemy placement sees some design considerations, such as the creation of background scenery, handed off to automated processes.

> . . . what's compelling about Super Mario Maker is how it translates the NES's architectural constraints into its design space. Players aren't asked to fuss with set decoration, laboriously populating the overground courses with clouds or hills. Instead, dragging terrain across the screen triggers shrubs and trees to animate into place automatically. Mario Maker's core mechanic is object placement. (Altice, 2015b)

Items can be shaken with the stylus or combined to bestow them with new qualities unavailable in the original games ensuring that SMM is both grounded in and a development of the Super Mario series. In short, SMM gamifies game design. Consistent with Nintendo's carefully managed public persona, SMM's tagline could not be more inclusive. 'Anyone can make it. Everyone can play it'. proclaims the official website, game packaging and promotional videos each helping to push Nintendo's audience-broadening initiatives (Jones and Thiruvathukal 2012; Juul 2009) beyond gameplay and into gamemaking.

> At the touch of a button, the course you were editing becomes fully playable! And if something bothers you while playing, you can instantly switch back to creation mode to adjust it. You'll be the first-ever player of the unique courses you create! (Nintendo, 2015b)

As co-designer Takashi Tezuka notes, this is quite unlike the design process for the original Super Mario Bros. design process

> At the time, we didn't really use computerised tools. Instead, we hand-drew the stages and inputted data based on those drawings. For example, we drew the layout of the stage on graph paper . . . and handed in over to the programmer who inputted it after converting it to numerical data. So, we didn't see the finished course until the next day or so. (Nintendo, 2015c)

The calculated metering of design tools which are revealed in drip-feed fashion so as not to overwhelm the would-be designer also speaks eloquently of a deep-seated sensitivity to player experience that verges on paternalistic. Similarly, the requirement that levels be completed by their creators before they can be uploaded and shared with other players is motivated by a desire to keep the catalogue free from impossible designs. By synthesizing the acts of creation, playing and playtesting into a singular activity, 'player-advocacy' (Fullerton, 2008) is as infused in SMM as it is in the meticulously crafted designs of Super Mario Bros. (Adams, 2014; Emmons, 2014; McMillen and Refines, 2012) that SMM explicitly references, celebrates and reveres in its packaging, marketing materials and throughout the game itself. It follows that one reading of SMM positions it as a project simultaneously reaffirming the depth of Nintendo's design prowess and its ongoing corporate concern for players as expressed in and through its hardware and software creations.

The Pits

For all this inclusivity and accessibility, within a week of SMM's release, creators such as Alex Tan, aka 'PangaeaPanga' or just 'Panga', began uploading and sharing levels of such complexity that they are almost unrecognizable as Super Mario stages. The 'Pit of Panga' levels require an utterly comprehensive mastery of skills and performance techniques as well as an intimate knowledge of the distinctive behaviours evident in SMM's game engine – including its many quirks and glitches. Such is their difficulty, most of the levels have been cleared only a handful of times despite numerous attempts. As of June 2016, data available on Nintendo's 'Super Mario Maker Bookmark' website show that Panga's infamous 'P-Break' has been attempted 5,266,597 times with just 855 completions. Broadcasting the performance on video streaming platform 'Twitch', Panga himself took over 9 hours of solid play before finally completing the level and making it available for uploading and sharing.

Crucially, there is more to the Pit of Panga levels than their extreme difficulty. These levels take much of their inspiration from the amateur practice of 'ROM hacking' in which the extracted (or 'ripped') code from a commercial game (the 'ROM') is executed under emulation (played back on a different system) with level designs, character and background graphics, sound effects and music all edited ('hacked') using custom tools created by a community of amateur designers. ROM hacking is a decidedly underground practice that relies heavily on the creation and distribution of bespoke tools for editing as well as playing back the original game code to be modified (which is typically illegally acquired). Importantly, ROM hacks tend towards extremity in their remixing and reworking – sometimes almost beyond recognition and require both mastery of performance techniques and the

use of counter-intuitive and even subversive strategies such as losing power-ups and deliberately sacrificing characters in order to proceed.

Of course, that players appropriate creation tools and codify extreme forms of (often expert and, accordingly, difficult) play should not surprise us. Throughout gaming culture, we see countless examples of ludic mastery captured in superplay and counterplay performances, while the extraordinary feats of reinvention observable and playable as 'mods' (amateur 'modifications') to commercial games are actively encouraged by those developers who release tools and resources to facilitate such labour (see Postigo, 2007, 2008). Viewed in this light, levels like P-Break might be considered as examples of players' creative exploitations of SMM's affordances – albeit ones that subversively nod to practices of ROM hacking that Nintendo elsewhere unequivocally codes as illegal acts of software piracy due to the use of ripped code and the circumvention of copy protection systems (see Newman, 2013). However, what is particularly remarkable is that, in its own official promotional and prefigurative materials for SMM, Nintendo explicitly references precisely the same ROM hacking/Kaizo design principles that inspire P-Break et al.

Just 19 seconds into the 7 minutes 'What is Super Mario Maker?' pre-release promotional video available on the game's official website, the scene shifts from one reminiscent of the opening stage of Super Mario Bros.' World 1–1 to vignettes of countless super-sized Winged Chain Chomps, 100 Boos swarming towards Mario, and levels made entirely from rotating fire bars. 'That's not right' opines the voiceover as the screen is filled with a series of increasingly complex designs worthy of Rube Goldberg but progressively unrecognizable as Nintendo creations (see George, 2013; also Heath Robinson, 2015). It is this that makes SMM so intriguing and complex. In foregrounding such conspicuously hostile, unfair levels in SMM's promotion, Nintendo appears to use this totemic object celebrating 30 years of Super Mario to endorse and legitimize a game design philosophy utterly unlike that which it espouses elsewhere (and elsewhere in the SMM project).

Asshole Mario

ROM hacking is an umbrella term that refers to the direct manipulation of commercially released videogame program data so as to alter the original gameplay, graphics and sound or level designs. As romhacking.net, one of the largest hubs for such activity online, puts it, ROM hacking involves, 'Modifying the data in a ROM image to achieve such purposes as playing the game in a different language than intended, creating new levels for old games, or maybe playing with a different skill level than intended'. The 'ROM image' here refers to a binary copy of the data originally stored and distributed in the game's read only memory (e.g. on a chip in a cartridge as in the case of Super Mario Bros.) and editing requires the use of specific techniques and tools. Chief among the ROM hacker's arsenal are the Hex Editor, which facilitates the direct manipulation of the ROM data (some emulators include dedicated Hex Editors in their packages), and Tile Data Editor (such as 'Tile Layer Pro'), which allows character and background graphics to be edited and redesigned. Depending on the nature and complexity of the ROM hack project, other specialist tools will be deployed for editing text, font translation tables and music for instance. Similarly, special techniques such as 'Pointer Hacking' come into play where projects require expanded text, for example, as simply adding more text (or any data) to a ROM is generally not possible. For all their variety, one constant is that ROM hacks are almost exclusively the province of amateur creators working at least in part with data, code and intellectual properties they do not own. As will be clear even from this brief discussion, ROM

hacking is not an activity undertaken lightly and requires considerable technical and aesthetic knowledge as well as mastery of complex tools.

Of all the Super Mario ROM hacks, Kaizo Mario World is surely the most famous. Indeed, it is perhaps the most famous of all videogame ROM hacks. Yet, for all its notoriety, Kaizo Mario World has surprisingly uncertain origins. First appearing in 2007 and attributed to Japanese game designer T. Takemoto about whom very little is known, the game's monicker means 'Hack Mario World'. The title almost understates the extent of the changes that the new game brings to bear on the original 1990s Super Mario World and, reflecting its extreme difficulty, it is colloquially known by aficionados as 'Asshole Mario'. The sheer range of techniques and design elements contained within the title is quite extraordinary and the level and consistency of inventiveness nothing short of inspiring. However, for all the variety in its implementation, in one sense, it is not the most radical reworking of Super Mario Bros. As recently as September 2015, Guyver (X.B.M)'s Super Flappy Bird recreates Dong Nyugen's infamous game removing the floor and platforms and replacing Faby with a Cheep Cheep who is charged with flapping through gaps in Super Mario Bros.' trademark green pipes – the same pipes that were referenced in the original Flappy Bird.

While Flappy Bird and Kaizo Mario World bear similarity in terms of their high degree of difficulty, the latter presents itself with an almost singular aim to frustrate by being almost sadistically hard. In this regard, it is extraordinarily successful but it is far from the only ROM hack to address the difficulty level in the Super Mario series nor was it the first. Creations such as Arnott's (2011) Super Mario Bros: Fast Foes:

> ...is identical to the original game, but the enemies are slightly faster than normal...this physics tweak causes the "feel" of certain levels to change – 2–2 and 6–2, for instance, seem much more hectic and hostile.

Conversely, Megafield64's (2014) Super Mario Bros. Simplified, ' . . . makes the original Super Mario Bros. easier. Nearly all bottomless pits have been eliminated and that [sic] are far more power-ups scattered throughout all the levels'.

But where these creations take the core of Super Mario Bros.' levels and modify them either by adding or removing elements or modifying the physics model, Kaizo Mario begins with a clean sheet. It is not so much a modification or tweak of Super Mario World as it is an entirely new set of levels designed using the assets and elements from Nintendo's game – albeit bestowing upon them behaviours and qualities that are unexpected, often unpredictable, and frequently unfair. The description of Takemoto's levels on romhacking.net makes it clear that they are not for the feint of heart and does an effective job of framing the game as well as its creator.

> Kaizo Mario is reliant on skill, patience, and sanity. If you aren't dying every fifteen seconds you are probably cheating. If you don't get nightmares of chompers after playing the game you didn't beat the first level. If you like finding invisible coin blocks you won't after playing the game; you will swear even if you find one that helps you. If you find a mushroom-don't feel lucky-it will be lost soon thereafter. Nothing will spare you, the game will spit on you as if you were nothing but asphalt.

> If you have the courage to play the game it is available in the downloads link. If you would like to know all the traps (that are going to kill you anyway) in the game, click on the walkthrough link.

If you would like to be spared the pain of playing the game, then click on the videos link. Last, but not least, if you have questions take a quick look at the FAQ. (RHDN, 2007)

The inevitability of the player's demise and the sheer number of tricks and traps that have been designed to ensure that those deaths are never far away goes some way to explaining the 'Asshole' soubriquet. There are now three instalments in the Kaizo Mario World series. All follow the same basic premise of inflicting as many deaths upon the player as possible and allowing them to progress only incrementally as they work out the solution to each set piece before immediately dying at the next. The histrionic presentation echoes games such as DoDonPachi (Cave, 1997) and other 'Bullet Hell' shooters whose screens positively overflow with enemy spacecraft and waves of bullets almost overwhelming in their volume and velocity, not to mention their uniform hostility to the player. Where switches are sparingly used in levels of Super Mario World to turn on and off platforms requiring some thoughtful jumping into what will become safe areas, in Kaizo Mario, switches abound. The sequences of activation, the split second timing and the means of triggering them (some have to be hit with shells, other must be switched by enemies that are jettisoned into them) combine to create a multilayered logic puzzle, requiring agility and dexterity – all performed within an unreasonably short period of time. Some of the techniques, however, are self-consciously subversive. Objects fall from the sky either requiring collection or evasion. Unthinkable tactics such as deliberately surrendering a power-up in order to fit through a gap too small for Super Mario, or sacrificing sidekick Yoshi, become key Kaizo strategies. Even breaking through the 'end of level' flag does not always signal success unless certain other conditions have been met in the level – something that categorically cannot happen in Super Mario World.

The high level of difficulty combined with a structure that sees players making only gradual progress through a world solving one puzzle at a time before having their progress halted and reset reminds us of games like Terry Cavanagh's VVVVVV (Cavanagh, 2010), Michael 'Kayin' O'Reilly's I Wanna Be the Guy (O'Reilly, 2007), Team Meat's Super Meat Boy (Team Meat, 2010) and the 'masocore' subgenre of indie platform games. Certainly, these games are punishingly difficult but Kaizo Mario is even more gleefully ruthless in its refusal to offer the most basic of concessions such as checkpoints (though it is possible to take advantage of the 'savestate' functionality of an emulator, the Kaizo Mario levels do not build in checkpoints in the way that the comparatively player-friendly VVVVVV does, for instance). Particularly characteristic of Kaizo Mario and among Takemoto's most widely used tricks, the 'Invisible Coin Block' illustrates just how unfriendly this design strategy is. As Snyder (2013) notes in a retrospective on the three Kaizo Mario World releases,

> The player prepares to make a jump, runs, leaps, and falls instantly to his death, by the hand of the invisible coin block spiking Mario downward to his demise. It's brilliantly simple, but Takemoto's ability to determine players most plausible flight paths makes this one of his most effective techniques. (Snyder 2013)

It is this last point that is especially notable. There is a clear calculation evident in the placement of the invisible block. It is not merely unfair that it is rendered invisible, but its placement at exactly the point on the trajectory of the jump where it will most likely adversely affect the player speaks of the care and attentiveness that is lavished upon maximizing the inconvenience to the player and the number of deaths they will endure. Similarly, being based on Super Mario World, Kaizo Mario World is able to subvert established gameplay and behaviours to trick, misdirect and deceive the player, guiding and goading them into actions that would be safe in the original but are reconstituted as

deadly. Deaths that occur after and during 'end-of-level' victory sequences stand in stark opposition to the original gameplay and question the player's understanding of jeopardy and safety, continuity and completion. Above all, though, these examples reveal the presence of the creator themselves. The positioning of the invisible blocks and the evident knowledge of the Super Mario World game system that leaves Mario vulnerable during celebratory sequences, speaks of and, importantly, calls into existence, the character of an expert, if evil, designer. The invocation of a designer and the personal, dialogical interaction between them and the player is particularly notable in these most 'un-Mario' – perhaps even 'anti-Mario' – of Mario designs. The widely shared 'Super Mario Brothers – Frustration' video ('Mario Frustration', 2007), in which a player profanely narrates a battle with the fiendishly difficult 'Super Mario Forever' ROM hack ('Mario Forever', 2007), underscores the point with much of the angry obscenity directed at the level design and its creator.

(Re)claiming Mario

We might be tempted to see Nintendo's allusion to ROM hacks in SMM as an attempt to undermine or even outlaw their existence elsewhere. Certainly, Nintendo's corporate website is unambiguous in its assessment of the emulators so pivotal to the use ROM hacks.

> How Does Nintendo Feel About the Emergence of Video Game Emulators?
> The introduction of emulators created to play illegally copied Nintendo software represents the greatest threat to date to the intellectual property rights of video game developers. (Nintendo, n.d.)

As has been noted elsewhere (Newman, 2013), Nintendo presents a case which not only uncomplicatedly positions the emulator as an enabler of software piracy but also that the products of emulation are necessarily inauthentic. 'Emulators developed to play illegally copied Nintendo software promote piracy....The emulator promotes the play of illegal ROMs, NOT authentic games' (Nintendo, n.d.). It is worth remembering that Nintendo has a complex relationship with the creators of online works drawing on its intellectual property (IP). In 2013, for instance, the company publicly announced that it would exercise its rights and seek advertising revenue from YouTube performers of 'Let's Play' videos featuring its games (see Gera, 2013; MacDonald, 2013; Tassi, 2013).

In fact, the creation and distribution of ROM hacks is rather more complex than the process of downloading and running intact commercial ROMs as described by Nintendo. ROM hacks are rarely distributed as modified versions of the original ROM. Because it is recognized that this would represent a clear breach of copyright (see InVerse, 2003; Vagla and Dragon Eye Studios, 2003), ROM hacks are usually created and shared as 'patch' files that may be applied to the original, unaltered ROM. The patch, often in the form of an 'internal patching system' file for early Nintendo consoles (though more likely to be one of the more efficient file types such as PPF for larger, more recent game files and disc-based 'ISO' images), does not contain any of the original game data but rather is a record of the differences between the original and the hack. Of course, the original ROM is still required but the patch file in and of itself is distributed on fan sites on the understanding that it is not technically an IP contravention.

We might also reasonably suggest that references to ROM hacking are consistent with Nintendo's recent incorporation of elements of fan culture and forms of emergent play into its designs. Superplay practices such as speedrunning not only emerge out of Nintendo's products as players find increasingly esoteric and rapid means of traversing games such as Super Mario Bros. but are also

formally reworked into the fabric of subsequent games. The inclusion of 'Daredevil Comet' challenges in Super Mario Galaxy that require the player to replay already 'completed' levels subject to an additional rule (e.g. a strict and usually harsh time limit) suggests a self-aware, reflexive mode of game development that is engaged with cultures of play and cognisant of the malleability of its games as material for play (Newman, 2008). It also highlights the mainstreaming of once marginal practices made more visible via gameplay streaming and video sharing.

There is certainly one reading of SMM's allusions to ROM hacks that helps connect Nintendo to player cultures, and particularly the 'hardcore' players that it is often seen to have disconnected from since the launch of the Wii and its focus on 'casual' games and gamers (see Jones and Thiruvathukal, 2012; Juul, 2009). We might go further and read this as a form of cultural appropriation that seeks to recover and replace rather than assimilate. However, there are some important differences between the inclusion of speedrunning in Super Mario Galaxy and allusions to ROM hacking in SMM. Speedrunning could be seen to extend the vocabulary of gameplay opportunity within Super Mario Galaxy and, to some extent, can be said to proceed from the moments of temporal urgency in games such as Super Mario Bros. where hidden-then-revealed 1- Up mushrooms temporarily dictate the pace of encounters before they disappear. By contrast, game design such as that featured in Takemoto's Kaizo Mario World series is utterly at odds with the best practices elsewhere enshrined and venerated as part of the Mario legacy. Indeed, it proceeds from a subversion of many of the taken-for-granted rules established in Nintendo's canonical designs. Indeed, when mobilizing its expert designers, Nintendo's framing of SMM has a tendency to err on the side of caution and even conservatism in its guidance. Speaking to Polygon's Michael McWhertor after the game's debut at the E3 trade show in mid-2015, Takashi Tezuka offered the following sage advice,

> 'In Mario games, each one has 60 to 80 courses, and each course needs to have its own unique defining element', Tezuka said in an interview with Polygon. 'If you build too many elements into every course, they start to feel the same. That's something you need to be careful of.' . . . 'To me, the real trick is limiting [the number of] course objects. That's what makes it really special . . . People have a tendency to try to cram every cool feature into one . . . ' (McWhertor, 2015)

There is a clear sense here that the designer should position themselves as what Tracy Fullerton (2008) has called an 'advocate' of the player. This 'user-centred' approach to game and level design places considerable emphasis on engineering particular kinds of experiences for the player. The positioning of the Power-Up Mushroom in Super Mario Bros.' World 1–1 is a case in point. For Wilson and Sicart (2010: 40), this 'best-practice' goes beyond Nintendo and describes a conservatism in contemporary game design theory and practice dedicated to 'satisfying players' desires'.

Viewed through the lens of Nintendo's professional game design best practices and the onus on preparing players by gradually introducing and ramping up challenges, the advice not to deliberately antagonize the player or punish them repeatedly seems quite reasonable. Indeed, for Ernest Adams, this principle is significant, if not self-evident, enough to be enshrined as a 'design rule'.

> A few designers think it's funny to taunt or insult the player for losing. This is mean-spirited and violates a central principle of player-centric game design: the duty to empathize. The player will feel bad about losing anyway. Don't make it worse. (Adams, 2014: 260)

The 'Nintendo Treehouse Super Mario Maker Workshop' video posted on the day of SMM's global release on the company's official YouTube channel (2015d) makes a similar point. In this 90 minutes tutorial, two members of Nintendo's famously secretive localization group tour through some of their designs, offering tips and responding to live Twitch-based suggestions from viewers. After describing their approach to designing levels as collections of discrete 'encounters' between which the player moves, they discuss managing the jeopardy of each through careful design and iterative playtesting.

> This is a good spot to explain another design philosophy. . . . Making things look really scary, but not killing the player over and over again with actually really hard things – because most people don't like that. I'm going to tune this. . . . You want the player to feel like they're about to get crushed.' (Nintendo, 2015d)

And yet, for all this sagely advice, we have seen that fewer than 20 seconds elapse in the 'What is Super Mario Maker?' video before the similarly measured attenuation of World 1–1 is replaced with the riotous, cacophony of Kaizo-style 'abuse'. However, Wilson and Sicart's discussion of what they call Abusive Game Design includes some extremely important nuances that help us better appreciate ROM hacks and the affordance in SMM to create these kinds of levels.

> We define abusive game design as an attitude – one that focuses on creating a dialogue between designer and player. Despite the harsh imagery surrounding the term abuse, abusive game design, perhaps counter-intuitively, aims to forefront the particular human beings behind gameplay, both player and designer. (Wilson and Sicart, 2010: 40)

In Kaizo Mario levels, the types of challenges, the knowledge demonstrably showcased, the foresight that anticipates and thwarts players' actions, the intimacy of awareness and the rigour of exploitation of the game's underlying systems, all conjure into existence Takemoto. The player not only feels like they are about to get crushed – they get crushed. Many times over – by Takemoto. The great irony, of course, is that although Takemoto is manifestly present in Kaizo Mario World, very little is actually known about them in reality. This is where the naming and framing of the work plays its crucial discursive role. The introduction of these levels to many players via a series of YouTube videos simply and provocatively titled 'Asshole Mario' immediately conjures a sadistic, villainous creator, seeking and gaining gratification as they observe the failure of others to conquer their challenges. The schadenfreude seems only more tangible when we learn that the full original title for the video that introduced Kaizo Mario World was Jisaku no Kaizō Mario (Supa Mario Warudo) o Yujin ni Purei Saseru which translates as 'Making my friend play through my Mario hack (Super Mario World)'. The friend in question is R Kiba who, it is generally assumed, is the player whose performances are captured in the infamous videos that first appeared in 2007 on the Japanese nicovideo.jp sharing site and that have subsequently amassed millions of views on YouTube. Surely, Takemoto is about as far from an 'advocate of the player' in Fullerton's sense as we could possibly imagine.

Yet, as Wilson and Sicart suggest, there is a fundamental humanness to the interaction and, crucially, a markedly more dialogical relationship between player and designer in these Kaizo levels than in the canonical worlds of Nintendo's creation. In the Kaizo designs, we see something akin to the relationship between the crossword setter and puzzler with a clear exchange existing between designer and player. When the designer acts as an advocate for the player, there is a tendency to recede into the background, to become anonymous or even 'egoless' as Bateman and Boon (2006) would have it. In Kaizo levels, just as in each crossword puzzle, there is a palpable sense of the designer/setter's

personality, style and, above all, presence. In this more 'abusive' role, both the player and designer are revealed and their battle within the specific context of Kaizo Mario World, a crossword puzzle, or whichever arena they choose, is just that – the site of their contest. This is not to say that, as we have seen, an impressive mastery of the tools and material available to deploy within the game is not evident or privileged but rather that the challenge is more directly felt as one between two (or more) human participants than one between a player and a system. In this design practice, we perhaps see a particularly pure, if unexpected, example of a co-created videogame experience. As Wilson and Sicart suggest, 'abusive game design de- instrumentalizes a technology of play in order to enhance the interpersonal, human relation established in the gameplay experience' (2010: 45).

My assertion here is that, despite its name, SMM is at most only partly about making Super Mario levels. Without doubt, the release plays an important discursive role in the continued veneration and canonization of the design and designers of the Super Mario series. It does this partly through the celebration of the series' 30-year history demonstrating its longevity and ability to withstand and effect change on games technology, design and the cultures of play. But, it also undertakes this ideological work by making designing the kinds of levels that would sit within the Mario canon not just difficult, but positively unlikely. It manages this in a variety of ways. Not least is the arrangement of the tools and the gamification of the design process. The use of amiibo to add 'costumes' (effectively replacing Mario in the game), the transformations of objects, items and enemies that are bestowed with new qualities such as increased size or the ability to fly, similarly unfix and remove these items from the canonical world. They recast them as mutable, Mario/ Nintendo-themed playthings – more malleable, digital versions of the amiibo figures themselves. The lifting of original hardware restrictions such as the limit on the number of simultaneous objects on screen creates a new context and implicitly encourages the 'cramming of every cool feature' into SMM levels. Similarly, the lack of certain key features (at time of release at least) such as checkpoints denies the creation of certain core mechanics that characterize the canonical approach. Where checkpoints allow designers to encourage risky per- formances by providing a median fallback position, their absence generates frustration after failure or suggests a more cautious approach. Importantly, where Mario Paint shipped with a Nintendo mouse and presented an application interface with pull-down menus, all of SMM's play, playtesting and editing is undertaken with the Wii U Gamepad and an interface that in its combination of colour, playfulness and anthropomorphism differentiates itself from most other level design applications.

> If we couple this with the observation that Miyamoto et al. remain firmly located in the peripheral media and paratextuality of the SMM release, we might argue that the best practices of game design remain intentionally elsewhere and ineffable. As Rundle (2015) notes in a review for wired.co.uk: 'As with any classic of design, the thing that defines it is immaterial, and fragile. You are not Shigeru Miyamoto'. This could be taken as a criticism of the game and some commentators have drawn attention to the prevalence of 'bad' levels, perhaps none more so than Thomsen (2015)

whose Washington Post review is entitled 'Super Mario Maker is an engine for circulating horrible new Mario levels'. However, another way of reading this is as a distancing of the outputs of SMM and Nintendo's teams which is as discursively important as it is intentional.

Considering the personalization of the designer–player relationship that Wilson and Sicart identify in ROM hacks such as Kaizo Mario and the importance of the framing of the designer and their creation

we saw in relation to Asshole Mario, that the SMM levels that are created and shared by players across the game's built-in network are assiduously attributed to their nicknames and that creators are required to name their creations is important. Indeed, once one alights upon a designer whose levels one enjoys, they can be followed, ensuring no new upload is missed, and cementing the relationship yet further in much the manner of social media.

You shell not pass

As a veteran ROM hacker, it took Panga just a matter of days to import the principles of Kaizo Mario design into SMM. Among the first of what would become the series Pit of Panga levels, P- Break has been hailed as, ' . . . the closest anyone's come to 'the dream' for hardcore Mario players like Panga: creating a popular level that's attempted by thousands of players but completed by none' (Sullivan, 2015). As of June 2016, completing P-Break remains an elusive proposition for most with a 0.01% completion rate after more than 5 million attempts. Continuing the dialogue with the community of players, and especially those who managed to complete P-Break, Panga notes the desire to explore SMM in order to find the tipping point between genuinely impossible and uploadably hard.

> 'Looking back at when I made P-Break, I imagined it to be harder than it really was, which is why it has so many clears', PangaeaPanga said. 'With U-Break, I want to get rid of that partial viewpoint and actually make it as close to ''impossible'' as I can.' (Panga in Hernandez, 2015a)

Indeed, P-Break is one of Panga's more approachable challenges with subsequent Pit of Panga uploads including 'Saved by the Shell', 'Grown Man's Garden' and 'The Cape Escape' currently listed on Nintendo's servers as having 0% completion ratios (in fact, they have been completed but not sufficiently often to register with a precision of two decimal places). Speaking about P-Break and its difficulty, Panga reveals his dissatisfaction with the number of completions. 'In an ideal world, no more than 10 clears would satisfy me' (Hernandez, 2015a).

This might seem like hubris but further inspection of Panga's amateur design career highlights P-Break's comparative ease and the level was cleared considerably more speedily than some of his pre-SMM ROM hacks. 'Item Abuse 3', for instance, a Super Mario World hack reigned imperious for more than 3 years before it was cleared – and even then the clearance was performed by Panga himself – and even then only by utilizing specially designed tools to provide the millisecond precision timing required (See Hernandez, 2015b).

Such performance automation is not possible in SMM, yet many of the cues and principles – and all of the abusive design ethos – evident in the Item Abuse series remain intact in the Pit of Panga levels. Juggling multiple shells in near impossibly dextrous and coordinated ways so as to provide a constantly moving route across bottomless ravines and lava-filled caverns, is commonplace. Levels exploit glitches that allow multiple Yoshis to appear simultaneously onscreen (and which have to be alternately sacrificed in order for Mario to proceed in a manner inconceivable in a Nintendo-designed level). Traps, tricks, and, of course, hidden blocks, are at the heart of this design language established and formalized in the underground ROM hacking community over the past decade. Reviewing the work of CarlSagan, another SMM Kaizo designer and colleague of Panga (performing together at the AGDQ2015/16 exhibitions), Hernandez observes that

The other big thing about Carl's level is its ample usage of POW blocks – which, yes, can clear enemies with ease...but can also destroy the shell that Mario rides throughout the level. The POW block, normally a great tool for getting rid of any possible headaches, also makes it very easy for the player to completely screw themselves over in this level, if they're not careful. (Hernandez, 2015a)

In case we mistake the creation of these Kaizo levels for haphazard or excessive object placement, Panga offers an insight into his design process and philosophy which speaks of a meticulousness and precision the equal of Miyamoto, Tezuka and the myriad unnamed Nintendo designers. Moreover, by envisioning himself as the player, Panga not only models the dialogical relationship detailed by Wilson and Sicart (2010) but also predicts the necessary adoption of the play position and the completion that unlocks the upload.

I've seen people who try to make [tricky] levels, and then they just spam the hell out of enemies, and it's pretty much not fun for the players. When I make my levels, I try to envision myself as the player...I generally just anticipate what someone's gonna do when they get put into my level. (Sullivan, 2015)

The notoriety of Panga and the other makers of the extreme Kaizo-inspired SMM levels is partly a product of Nintendo's SMM Bookmark website, which facilitates navigation of the myriad levels and flags and tags categories of upload as well as revealing player comments on the stages. However, the celebrity of Panga et al. extends further across Twitch and YouTube streams and even into live performances at events such as Awesome Games Done Quick 16 (AGDQ16), for instance. Reinforcing the personality of the designer as 'consumable persona' (Marwick and boyd, 2011) and the pleasure evident in battling against their self-consciously abusive levels, AGDQ16's 'Super Kaizo Maker' session was introduced with the following words. 'Mario Maker has really provided an opportunity for very sadistic individuals like this man playing here – PangeaPanga – to create horrifying levels for our amusement' (AGDQ16). Indeed, Panga's own Twitter profile (@PangaeaPanga) lists him as a 'sadistic level designer'.

The ability to 'favourite' and 'follow' specific creators foregrounds the designer in a way that is unusual in contemporary videogame development where credits are generic or even hidden (Fleming, 2007). Importantly, the foregrounding of the amateur creator's name in SMM yet further distances them and their creations from Nintendo's own teams and creations. Moreover, it is this (amateur) attribution that allows and explains the presence of the rule-breaking design choices inherent in their Kaizo levels. In a similar manner, the naming of levels performs a further important discursive and prefigurative framing function (although Nintendo's policies ensure that Asshole Mario is rejected in SMM and even 'Bullet Hell' has to be altered to the altogether more fey but delightfully whimsical 'Bullet Heck'). Nonetheless, titles such as 'The Importance of Being Small', 'Don't Touch the P Switch!', 'Sacrificial Yoshis' and 'Super Shmup Bros.' immediately reveal something of the potentially abusive, unfair or at least subversive nature of their contents.

Saved by the shell

Ultimately, I argue that in SMM, Nintendo has created a game that actually manages to reconcile what appear at first to be impossible tensions between professional and amateur game design. The celebratory nature of the release and package confirms the historical, technological and cultural status

of Super Mario Bros. and, by extension, Nintendo's continued role as innovator and steward of excellence in gameplay. Indeed, in 2016 via its corporate website, Nintendo released a series of tutorials featuring two characters:

> Mashiko: A friendly lady who's always eager to explain how to play Super Mario Maker. She's studying under Yamamura in order to learn the innermost secrets of course creation.

> Yamamura: A pigeon. Clearly a pigeon. Yet for some reason, he's also a master of the art of course creation. Loves edamame beans and fried chicken.

The nature of the advice offered by Yamamura is decidedly regulatory and does an excellent job of reinforcing Nintendo's core design values – and it is notable that this guidance is offered not directly by Nintendo's designers but rather by a non-threatening, albeit magical, character that 'for some reason' possesses the ineffable knowledge of expert level design and player advocacy. By way of example, reviewing one of Mashiko's first designs, Yamamura notes,

> Coo-coo coo coo.
> (You said that the 'variety of enemies and elements' is its most memorable feature, but I'm afraid

that's not a memorable feature at all. With so many different elements, and each one only appearing a couple of times, it actually makes it difficult for the player to look back on the course and remember specific parts they appreciated. It's like toast without butter, a cake without icing, a life without fried chicken . . . If you ask me, the biggest feature of this course is how it simply doesn't leave an impression. You should really try to pare down the number of elements you use.) (Nintendo, 2016a)

In addition, although they appear under the auspices of providing sagely game design guidance, the paratextual presence of Nintendo's designers serves less to shape or frame SMM making but rather has the effect of venerating and mythologizing the creation of the canonical Super Mario levels and games which remain other, elsewhere and unattainable through replication or improvement. Further, the tools presented in SMM prefigure, even encourage, forms of making that are excessive and that deviate from the ethos and best practice elsewhere espoused. SMM removes the technical constraints of the original NES hardware and software, adds new affordances as characters are combined and, importantly, triggers these transformations through performances familiar and recognizable as gameplay such as the use of amiibo.

By explicitly foregrounding Kaizo Mario-style levels Nintendo might appear to be endorsing abusive and unfair game design techniques. However, I would argue that the performance of attribution that links these levels to their amateur designers, and the inherent 'bringing to the forefront the human beings behind gameplay, both player and designer' (Wilson and Sicart, 2010: 40) means that what Nintendo has actually created in SMM is not a Super Mario level maker per se. Rather, it is a platform upon which players as amateur designers engage in gameplay that is founded on a desire to variously become and apprehend 'the designer behind the system' (Wilson and Sicart, 2010: 40). The SMM player/designer remains throughout an amateur and making canonical Super Mario levels remains an activity that Nintendo and its expert teams undertake – an activity that only Nintendo and its expert teams can undertake. Indeed, as if to underscore the unknowability of canonical Mario-ness and the impossibility of a non-expert designer recreating its essence with SMM, Miyamoto offers a particularly intangible reading.

I think that when something summons forth a lot of emotions, what you feel is perhaps something like a 'smell'. I wanted to make Mario so that it had its own distinctive 'smell' – a Mario-esque 'smell'. I wanted to create something that stimulated as many of the five senses as it could. (Iwata Asks, 2009)

Ultimately, it is not simply that SMM supports the creation of levels utterly unlike those produced by Nintendo but rather that, by virtue of the way its tools are structured (lifting the limit on simultaneous enemies/objects on-screen and creating new combinations of enemies, for instance), it effectively encourages their creation. While it is possible to create levels that follow Nintendo's best practice guidance of restraint, the paratextual framing prompts the exploration of excess and the creation of new kinds of gameplay and design experience within the context of Mario. These amateur creations give rise to new experiences, for sure, but they are decidedly unlike Nintendo's own creations which remain ineffable. Nintendo's in-house creations are effectively coded as the outcome of knowledge, attentiveness to player interaction and, above all, a mastery of game design as a discipline and not simply the product of access to a set of tools regardless how user-friendly they might be. By crystallizing – and manufacturing – the manifest difference between amateur and professional game design practice and product, SMM serves to valorize the craft of a form of game design of which Nintendo's designers with their commitment to accessibility and player advocacy, are the premier exponents. In doing so, in the face of myriad amateur SMM creations, the canonicity of the Super Mario series remains defined by the work of Nintendo's own professionals. Everyone Can Play It? Definitely. Anyone Can Make It? Perhaps. But the message of SMM is that no one can make it like Nintendo.

Postscript: Anyone can make it. Nintendo hosts it

In addition to the discursive production of Nintendo's canonical ownership of the core principles of Super Mario design, the events of March 2016 point to an altogether more material exercising of power over the distribution of levels. The case of David 'GrandPOObear' Hunt, a prominent online video streamer for whom SMM design and play was a key contributor to content and income generation, is illustrative. On 21 March 2016, Hunt tweeted that all of his levels had been deleted from Nintendo's SMM servers without warning or explanation (@GrandPooBear, 2016). The situation was not unique to Hunt with other creators reporting similar unexplained deletions from their profiles (see Klepek, 2016). Subsequently, Nintendo (2016b) updated its Support website:

A Course I Uploaded Seems to Have Disappeared. Where Did it Go? (Super Mario Maker)
Answer: Unfortunately, we sometimes have to delete courses from Course World. Below are cases

where courses can be removed from the server:

Low stars/plays

After a fixed period of time, courses with low stars/plays will be automatically deleted from the server.

Bugs

Courses that include bugs that were unintended by either the course creator or the developers will be deleted. It's important that we remove levels with bugs quickly, because letting these levels

remain in Course World can lead to negative outcomes for many players such as players experiencing levels in unfair ways that the original course creator did not intend, or re-writing 'World Record' times.

Requesting stars from other users

Courses that are explicitly asking for stars from other players will be deleted. For example, using words such as 'Like', 'Yeah!', and the 'w' symbol in their course names. Please change the course name when saving a course that includes these words.

Inappropriate Content

Courses that contain something inappropriate, such as offensive language or phrases will be deleted.

Other behavior in violation of the Nintendo Network Code of Conduct. Please note that repeated violations can result in additional penalties.

While each of the points reminds us of the gatekeeping practices that moderate the SMM network and content, the first three are particularly pertinent to our discussion. The 'star' referenced in points one and three is the equivalent of the 'Like' or 'þ1' familiar on other social media and, while it might seem that Nintendo is crowdsourcing ratings and rankings in a characteristically open manner, the criteria are rather opaque (a 'fixed' but unspecified period of time, and a 'low' but unspecified number of stars coupled with difficult-to-decode syntactical rules which see 'Yeah!' construed as an illegal request). For Kaizo creators, in particular, the removal of levels that exploit bugs is especially problematic not only because much Kaizo design (and other superplay practice) is founded on the creative utilization or even abuse of object/item behaviours and inter- actions but also that it is unlikely to be clear to an amateur creator what constitutes a 'bug' at the point of level creation and uploading. That the decision to designate as a bug what might have previously been apprehended and utilized as a creatively exploitable behaviour is, demonstrably, one taken by Nintendo and leaves levels created and uploaded in the liminal zone before the recoding (and potential removal/recalibration of the 'offending' behaviour) vulnerable to deletion.

Of course, what is essential to remember here is that SMM's sharing, uploading and down- loading of levels takes place across an entirely proprietary, closed network accessible only via the Wii U console. Reminding us of Jenkins' (1992) observations on the position of disadvantage from which fans typically operate in relation to the owners of the material with which they work, Klepek notes,

When a stage is deleted from Mario Maker's servers, you cannot change it and re-upload it. You have to build the level again, from scratch, and hope Nintendo doesn't find it a second time. And because Nintendo doesn't provide creators with feedback on why a level is removed, it's a crapshoot. (Klepek, 2016)

Even if reinstatement of the levels was possible, the longer term consequences of this material residing in proprietary formats on proprietary networks are clear and, already, our opportunities to perform game history on SMM are limited and require trawling YouTube for archival recordings of levels no longer available to play. Anyone can make it. Everyone can play it. Until it is deleted.

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