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# Playing the short game

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**F**rom the dawn of gaming, a battle has raged. On one side, visceral, immediate hits of entertainment. On the other, the lure of deeper challenges. In the beginning, this materialised as the masses shooting doddering alien invaders or directing a glutton to gobble up dots, while geeks toiled with mainframes and coaxed out of them a colossal text adventure set within deadly caves. The joysticks won.

But as home computers took hold, the tables turned. Arcade titles still provided blasts of enjoyment, but increasing sophistication in game design resulted in rapid, radical evolution elsewhere. Text adventures grew up, leading to interactive fiction from the likes of Infocom. Strategy titles such as *Ultima* immersed you in seemingly boundless worlds. Simulators ambitiously attempted to squeeze the entire experience of piloting a gunship into a Commodore 64.

Increasingly, the finite and the short were squeezed. Advertising began to boast of games that would last you a large number of hours, which became shorthand for value. Adventures and strategy titles could feasibly take days or even weeks to finish. Even arcade fare cottoned on to this specific notion of worth, frequently dispensing with dexterity, mastery, or even brevity as a primary reason to play, instead, doubling down on quests and depth. Arguably, this did for the Dreamcast, lambasted for hosting too many arcade titles where games lasted only a scant few minutes. And such thinking continued – and remains – elsewhere, to the point the value proposition can become horribly imbalanced. I recall a friend once grumping to me about *DEVICE 6*, aka The Best iPad Game Ever (don't try and tell me otherwise), because he finished it in a few hours, whereas the identically priced *World of*



**CRAIG GRANNELL**

Craig Grannell has been writing about tech and games for more years than he cares to remember. He shares his time between black rectangles, too many games of *Polytopia*, and rediscovering one-button classics to play with the youngling. Tweet him: [@CraigGrannell](https://twitter.com/CraigGrannell).

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## #48



*Goo* kept him occupied for weeks. *Assemble With Care* was slammed by App Store reviewers for being brief, despite being part of a subscription service designed to enable new gaming experiences. And in the land of 'proper consoles', we all too often see people have been trained to consider something a rip-off if it lacks the kind of built-in playtime that can take over their lives for entire weeks.

I don't get it – and the older I get, the less I get it. For me, gaming has always been about the experience – and there is great value in the succinct and the finite. Every medium has varied pacing, and games should be no different, ranging from jolts to the senses to lengthy, ambitious creations. But the latter does not negate the value and creative importance of the former.

We must also take care to recognise a certain kind of entitlement regarding available time. Many people have lives into which they cannot fit a 100-hour quest played over lengthy sessions, but welcome titles that can fill shorter moments – whether that's with a shot of gaming rocket fuel or a more contemplative production someone can gradually chip away at in shorter bursts.

With careful design, cloud sync, and liberal use of save states, it's for the first time possible in some cases to align both audiences. But that doesn't work for every production. So when making games, remember that a title that can engage and bring a smile to your face for 15 minutes still matters. A game you can play for three minutes time and time again matters. Ensuring there's a space for meaningful, impactful experiences – be they emotional brain-smashers or purely visceral in nature – to exist in succinct form is vitally important, can help make gaming more accessible, and is not something to be spurned and dismissed by self-appointed gatekeepers of 'proper' gaming. 🗨

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## WELCOME

After speaking to developer Aleksandra Korabelnikova about her studio's upcoming detective adventure, *Backbone* (see page 14), one phrase has stuck in my head ever since: "empathy simulator". Those were the words she used to describe the conversation-heavy computer adventures that partly inspired *Backbone* – the types of games where talking to (virtual) people is as much part of the experience as picking up items and solving puzzles.

It immediately reminded me of the late film critic Roger Ebert's suggestion that "movies are the most powerful empathy machine in all the arts". But Korabelnikova's words made me wonder whether video games might give movies a run for cinema's money on the empathy front: in games, uniquely, we get to inhabit the lives of characters rather than merely observe them from afar. We can see the lives of (virtual) people unfold. We can learn about their hopes and fears, often in real time.

Ebert wasn't a massive fan of video games – when it came to the exhausting question of whether games could be art, he came down firmly on the 'no' side. But I wonder if that was because he simply hadn't encountered the right games. Whether games can be regarded as 'art' or not, there's one thing most people who love the medium can agree on: they're as capable of creating emotion as any other medium. Games truly can be empathy simulators.

Enjoy the new issue.

Ryan Lambie  
Editor





# ICE ICE BABY

Wrapping up warm for a chat with  
Midwinter Entertainment about the upcoming  
PvEvP online shooter, *Scavengers*



Earth is, of course, an icy wasteland. What else is there to do other than engage in strategic sandbox shooting, battling in PvE and PvP situations with a team beside you, both completing objectives and surviving the elements at the same time? Nothing, that's what. So say hello to *Scavengers*, the debut title from Midwinter Entertainment.

Midwinter might be a newer studio, but it's one staffed by people who've worked at the likes of Visceral Games, 343 Industries (and on the *Halo* franchise in general), EA, ArenaNet, Pandemic Studios, and many more. That is to say: there's experience here. So it comes as no surprise that just a few minutes into *Scavengers*, you know this is a well-put-together game: something with satisfying loops; a mix of encounters big and small against AI beasts and other players alike; the chance to go on an impromptu ice-planet road trip after

you've nicked another team's sci-fi car-thing. You know, the usual stuff.

Interestingly, what sits below *Scavengers* is SpatialOS – the online gaming framework developed by UK firm Improbable, which allows for larger, more robust, and persistent online worlds. While *Scavengers* might not be aiming for the 1000-player battle royale, like the aborted *Mavericks* was, at launch, it will become the first large-scale title to actually release in full using the SpatialOS framework. How it impacts things in the long run we'll have to wait and see, but it is indeed an interesting factor to consider.

Anyway, after a session in which we almost managed to win the whole damn thing in our first go at *Scavengers* (spoiler: we didn't), we just had to know more. Fortunately, Josh Holmes (Midwinter co-founder/CEO), Mary Olson (head of production), and Daryl Anselmo (co-founder/director of art and UX) were up for a natter. ➔



^ Chaotic battles are ever-changing thanks to the levelling and upgrade systems, which allow you to both alter your playstyle between matches as well as during a game.

## On ice

Improbable has a few cancelled titles on its books, but how much have they factored into the making of *Scavengers*? Holmes explained there weren't specific lessons to be learned – more that it's just a challenge to make video games. "Each of those projects had their own specific set of circumstances around their development, and ultimate closure, none of which are relevant to our experience with *Scavengers*," he says. "I don't have any particular insight into these developments, but I can certainly empathise with any studio that isn't able to achieve their vision. Not all games make it to release, and many that do still don't find their audience. It may sound overly simplistic, but making games is hard. This is particularly true of multiplayer games, which add their own set of complexities to the process. I remain hyper-focused on the development of *Scavengers*, which represents the combined learnings of everyone on our team, from projects big and small, over decades of experience."

### How long has *Scavengers* been in the works now?

**JH:** We started working on the original concept for *Scavengers* back in 2017 and drew inspiration from a number of different sources, including dystopian sci-fi films and novels. Personally, I'm a huge fan of *The Road*, *Annihilation*, and Hugh Howey's *Wool* trilogy, and when it came to our Explorer characters we took some inspiration from movies such as *Big Game*, *Hanna*, *The Hunger Games*, and *The Maze Runner* series. On the gameplay front, we were intrigued by the opportunity to blend PvE, PvP, and Survival gameplay into an infinitely replayable session-based experience.

### What do you think it is about *Scavengers* that helps it stand out from a crowded online shooter market?

**MO:** *Scavengers* has elements similar to other multiplayer games, but it's in the combination of familiar elements with something new that has become the DNA of [the game]. Fundamentally, it's about balancing PvP and PvE combat, while battling for survival against a number of other elements – including trying to stay warm, avoiding dangerous storms, managing resources, collecting scrap, salvage, and data, and safely extracting from the planet at the end of the match. Combined, you get a level of unpredictability across a dynamic battleground that changes moment to moment, match to match. It makes it fun for a broader range of skills and playstyles than you get with many online shooters out there now.

### What's been the most fun thing to design/ implement in the game?

**JH:** I think the best part of any sandbox experience is the emergent gameplay that comes from combining interesting systems and giving players powerful tools to interact with them. With that in mind, it's been really fun to see how each of the Explorer characters has evolved over time. With their individual personalities, signature weapons, and unique special abilities, each champion enables different strategies and playstyles. They've each been designed with teamwork in mind and can be combined to create interesting synergies.

**DA:** We've been playtesting with the community for over a year now, and it's been fascinating to see how players gravitate to different characters, and get inspired by their look and personality. It's really gratifying to see that impact already so far from launch.

**MO:** Evolving the characters over time and the team-wide effort to bring them to life has been one, but I will never forget experiencing sliding for the first time in *Scavengers*. Sometimes the accidental, grassroots, and seemingly simple things – like a player mechanic – lead to some of the best moments. Sliding just feels good.

### Has there been anything that's ended up being a challenge?

**JH:** I think the biggest challenge, though it wasn't necessarily a surprise, has been finding the right balance between PvE and PvP, and making sure that both feel like complementary parts of the

experience. We've put a lot of effort into tuning our suite of weapons against health and shield pools so that combat feels good against AI and players. This balance is further complicated when you consider that players can level up in session to craft more powerful weapons and gear. Ensuring that this is correctly paced relies on a balanced session economy, which presents its own set of challenges.

**DA:** One of the biggest challenges has been constructing an overall image that makes complex gameplay easy to parse under a wide variety of weather and lighting conditions. Photographing snow is notoriously difficult because it is a high-albedo material (i.e. it reflects a lot of light). We needed to develop contrasting areas of dark against the snow to help players read the space of the world, recognise units, and make informed game decisions. A player needs to be able to tell the difference very quickly from all of the various threats, and we try not to rely too heavily on UI in that regard. Creating an appropriate level of contrast and distinctness for all of our units, weapons, abilities, talents, and game mechanics, so that the player can comprehend and learn, has been one of our biggest challenges.

**Are you at a place in development now that you expected – or hoped – to be?**

**MO:** We set out to develop *Scavengers* hand in hand with our community, and to test early and often. Part of that approach to development is intentionally to hit the bumps in the road, and then learn, evolve, and validate as we develop. So there have definitely been bumps and challenges, and you could also say that was the plan! That's the beauty of testing with the community, and gaining feedback from thousands of players over time. It gives us flexibility and durability to shift and evolve ahead of launch, rather than releasing and underdelivering on the promise of the game.

**Where do you foresee *Scavengers* sitting in the modern landscape? Will it settle in with other similar titles? Branch out on its own? Something entirely different?**

**MO:** I haven't given much thought to how it will sit with players versus other games that are available. The focus has always been about creating a distinctive competitive multiplayer experience.

We bring some triple-A experience to that, but we're a smaller team. For us, it's very different from anything else we've previously worked on, and we hope it's the same for players too.

**What's your personal favourite thing about *Scavengers*? The one thing you just can't live without...**

**JH:** I love our sliding system, which allows you to gain speed and recover stamina by sliding down slopes in the game. Your momentum from sliding can be used to launch yourself into the air, covering long distances. The original idea for the system came from the team through our internal playtests and then was honed and improved over the course of many months.

The launching mechanic was a happy accident. Technically, it started out as a bug, but it worked well with

our gameplay, so we've since doubled down and supported it as a feature. It's super-fun, especially in combat.

**MO:** Valora. My favourite character to play as, and I definitely can't live without her shotgun, shield, and attitude.

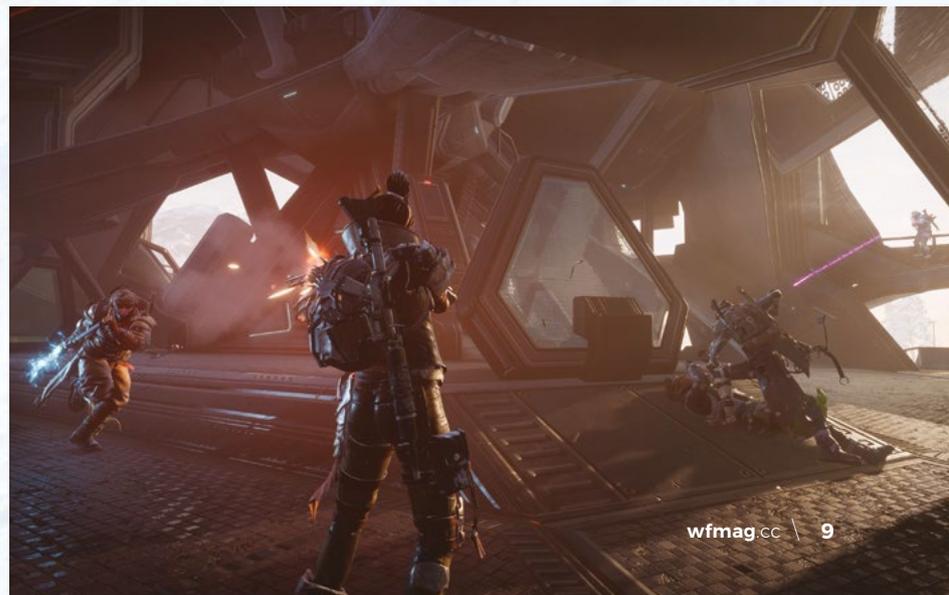
**What have you learned from the closed beta testing? What did you pick up from there that you wouldn't otherwise have?**

**JH:** We've learned so much through our playtesting process, and we're incredibly grateful to our community for all the feedback they've provided to us. When you're developing a game over the course of several years, you can [generate] ▶



▲ There's a storm coming, but hastily heading to shelter might not be the best of ideas – plenty of others need to hide from the elements, too.

▼ Each match ends with one last desperate battle inside the evacuation ship; it's a smart way of forcing those remaining into close quarters.





blind spots in the way that your team tends to play. Our community has been fantastic in helping identify unforeseen exploits, play patterns, and strategic imbalances.

One example of this would be the degree to which vehicles could be used to dominate the game, offensively, in an earlier release. We used community feedback and gameplay data from [early] tests to reduce the effectiveness of vehicles, increase their scrap cost, and establish audible warning sounds when they are nearby. This is just one of many examples.

**What's the working setup at Midwinter like?**

**MO:** We have been working fully remotely since March 2019. We are a very tight-knit team, so, on one hand, it's been challenging to not be working together in the same space, but at the same time, it probably helped us transition to working remotely. We hired five or six people after March who I've still never met in person, but they feel just as much a part of the close team as anyone else. Most of our tools and processes translate fine, but communication and collaboration take some extra work and creativity.

**Has the pandemic impacted on your work at all?**

**DA:** As an art director, one of the things I appreciate and miss about being in the studio are the impromptu discussions inspired by something I will see on an artist's monitor when walking by. Those moments are a bit harder to capture when working from home, but thankfully we all play together frequently, and I am able to review and critique footage daily.

**MO:** The pandemic has changed a lot about how we work, and has affected every individual in some way, and there's no avoiding that having an impact on how we work. At the same time, when I look back on *Scavengers* a year ago versus today, it's remarkable how everyone has managed to still create and make it happen. Making this game may have been an anchor for a lot of us.

**There's a lot of experience in the team – how has that, specifically, helped things out in the development/creative process?**

**DA:** Working with the experienced artists, engineers, and designers has been awesome. It's allowed us to maintain a smaller footprint, which is great for focus and collaboration. I really appreciate working with seasoned developers because they tend to work independently, give useful feedback, mentor the less-experienced team members, bring solid creative ideas to the table, and generally get the job done right first time.

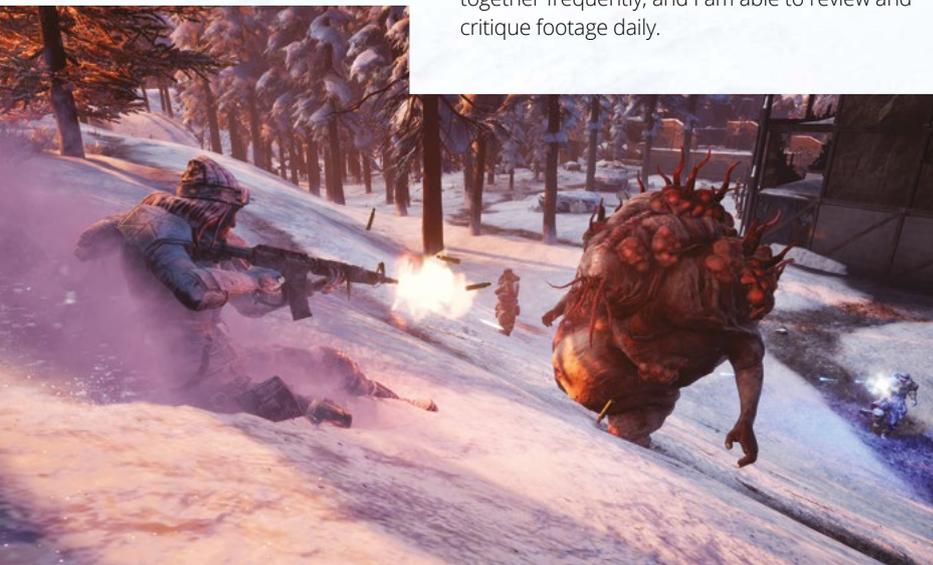
**Is there any added pressure from the fact that this is the first major full release using SpatialOS/Improbable's tech?**

**JH:** So, it's worth saying that SpatialOS is one part of the multiplayer games technology that Improbable offers, and that *Scavengers* benefits from – it was Improbable's first product, but the company's grown a lot since then. However, it is a big part of what makes *Scavengers* different. There are games and applications that have been released, or are in development, that are using SpatialOS at the moment, but *Scavengers* is certainly the first game release by an Improbable studio using SpatialOS. And that's been exciting more than anything... There are hundreds of people at Improbable spread across several continents, and despite our different locations, backgrounds, and skillsets, there's this incredible spirit of togetherness that's been really special to be a part of and to experience as a studio.

**What support has Improbable been offering, specifically? How hands-on are they?**

**JH:** Improbable have been fantastic to work with, from the very beginning of our partnership. They've provided all sorts of assistance, including the introduction of new technical functionality for the networking platform, online service development, co-development of specific features, and test support. We became part of Improbable's internal network of game studios in

▼ Sliding is a lot of fun, but less so when you're sliding right into the face of this once-was-a-chap.





late 2019, and that was a real testament to the strength of our relationship. It's a collaboration that has not only benefited the development of *Scavengers* as mentioned above, but also being able to support and provide input into the continued growth of their own developer tools and services. It continues to be an exciting and rewarding relationship.

**As for the engine/behind-the-scenes tech – what's been the biggest boon to development with the tools you're using?**

**JH:** We're using Unreal Engine as the foundation for our development and it's been fantastic so far. The tools are absolutely world-class. As a small team, this allows us to remain focused on the most important aspects of the game experience, while continuing to take advantage of the many advances Epic makes. We're also leveraging SpatialOS to make possible our vision for a large-scale PvEvP experience. We wouldn't be able to deliver the same level of scale and strategic depth in *Scavengers* if we weren't using SpatialOS. It's really been a game-changer for us.

**Conversely, what's been a challenge you've had to overcome during development, in relation to the tools?**

**JH:** Well, any time you are building a multiplayer experience at a large scale, it adds significant

complexity to the development process. This is one of the areas where our use of SpatialOS has proved to be a big advantage. The tools and workflows afforded to us by the SpatialOS platform have streamlined the process of building and testing a game with this level of complexity. As a result, we're able to focus more time on what really matters – making a compelling and replayable multiplayer experience – and less time on the technical underpinnings required to make this possible.

**What are your hopes for *Scavengers* once it's out there?**

**DA:** My hope would be that we created an iconic game image and experience distinct and different from everything else out there. I'd love for people to see it in the wild, be drawn in, and able to recognise an image immediately from *Scavengers* – nothing else quite like it.

**MO:** My hope is to continue to engage and grow an active community and that together we'll evolve *Scavengers*, and as part of that journey I hope there are a lot of moments of surprise and delight as we try new things and expand the game over time. This makes me really excited, and I see it as a privilege we hope to earn with players. 🙌

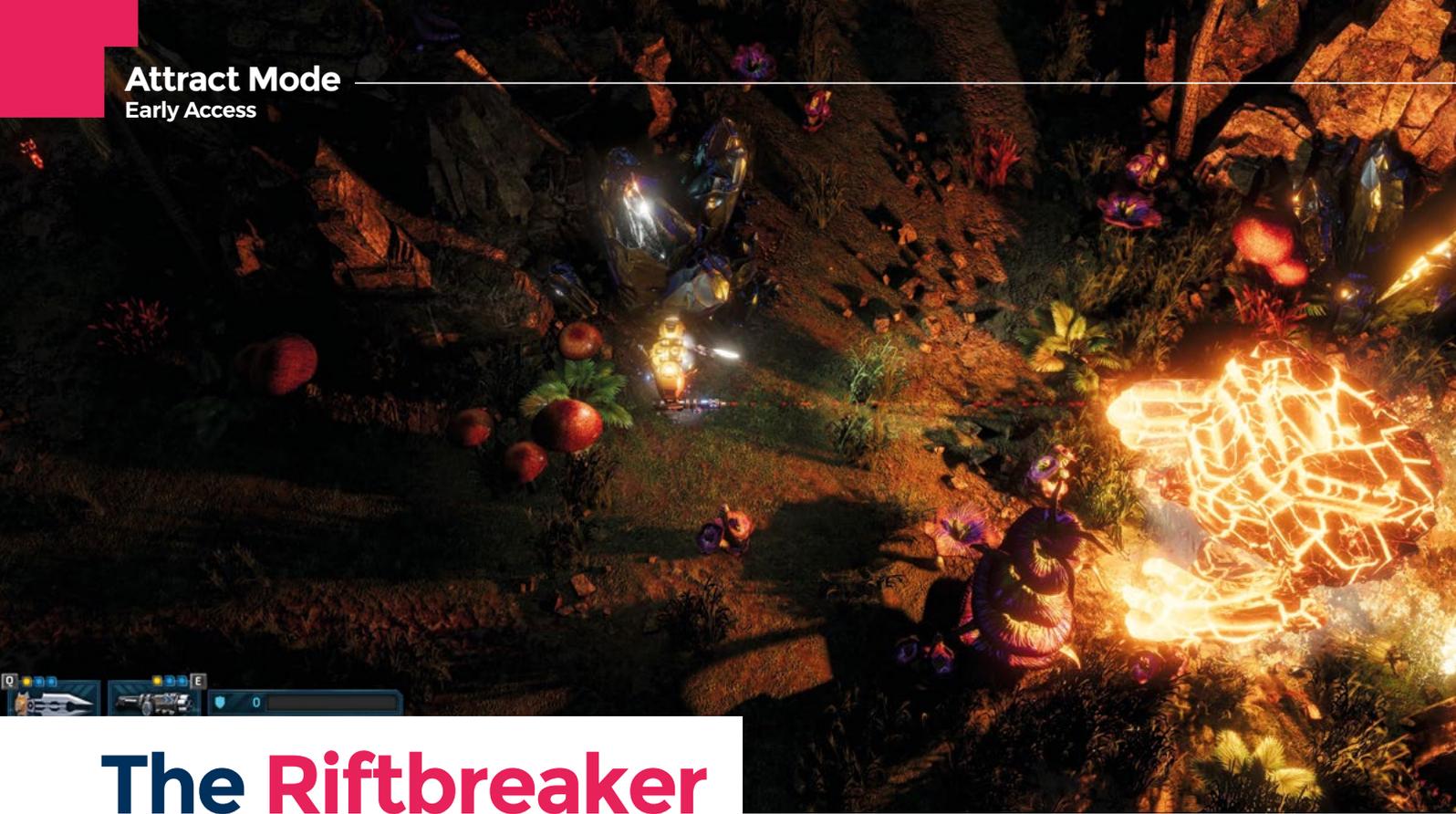
***Scavengers* releases later this year on PC. Go to [wfmag.cc/Scavs](http://wfmag.cc/Scavs) to sign up for beta playtests.**

▲ From concept to creation, *Scavengers* has maintained a distinct focus on the type of action it presents to players.

**“It's been challenging not working together in the same space”**

▼ The survival aspect kicks in with factors like keeping warm, but it doesn't envelop the entire experience.





# The Riftbreaker

Multi-genres and giant stompy robots combine well in EXOR's upcoming strategy-blaster

## Info

### GENRE

Base building RTS  
tower defence+++

### FORMAT

PC / PS5 / XB X/S /  
PS4 / XBO

### DEVELOPER

EXOR Studios

### PUBLISHER

EXOR Studios

### RELEASE

TBC 2021

▼ *Metal Arms: Glitch in the System* meets *Diablo*, anyone?



On first glance, *The Riftbreaker* appears to have a lot of *Total Annihilation* (or *Supreme Commander*) in its DNA, but soon enough it becomes apparent this is more than just big robots and war. Well, there *are* big robots, and there *is* war going on, but it's *more* than that. Developer EXOR Studios has mixed in plenty of other inspirations, from *Diablo* through *StarCraft*; even the likes of *Factorio* are in the mix. And so far? It's looking pretty great.

Following completion of the team's previous title, *X-Morph: Defense*, EXOR began work on *The Riftbreaker* in 2018. "The idea for *The Riftbreaker*

was born in a very long brainstorming cycle at our company," explains Pawel Lekki, chief operating officer at EXOR. "We're a small team, but everyone could pitch concepts for the next game that we were going to make and then we voted on all of them. We went through 73 game concepts until we all unanimously voted on *The Riftbreaker*, with the original concept called *Project Pandora*, created by Andrzej Czajkowski."

From that pitch, the game has, as might be expected, changed a fair bit – most significantly in the base building mechanics, which have become more of a core pillar for the game as development has continued. On top of that come the dynamic systems like procedural generation for the world and enemy AI behaviour, which has been – and continues to be – tweaked to make sure it's as close to perfect as it can be. Unsurprisingly it's been a challenge for the indie studio.

"There were multiple challenges," Lekki says. "From a technical point of view getting thousands of monsters with individual AI was a real strain on performance, both in terms of CPU and GPU power. The most challenging task we're working on now is creating the ability to maintain multiple persistent bases in different parts of the planet that continuously operate even if the player is not present in that region. It's an interesting problem both from a technical and design point of view."

While building up your base forms a big part of *The Riftbreaker*, you do have to defend it too – a





▲ Outside of your base, things get a mite more dangerous - which is where the twin-stick shooting comes into play.

mix of *Diablo* and tower defence, like a direct-control *They Are Billions*, perhaps. In the more hectic of these scenarios you're met by dozens – hundreds, even – of enemies rushing your base, and you're required to stop the onslaught both directly and through smart use of defensive emplacements. It can be overwhelming, but at the same time, it can be intensely satisfying to wade through legions of incoming bugs and other such nasties, intent on causing your beautiful crafts harm. It is, as Lekki says, a natural fit for each of the individual mechanics.

One ingenious factor in *The Riftbreaker's* development has been its use of in-game streamer tools, which allow the audience to interact more directly with the action they're watching. While these are usually intended to

be used by – you guessed it – streamers, and to be fair they are for that, the tools were actually introduced with an ulterior motive: "It's a direct reaction to the closed development cycle of *X-Morph: Defense*," Lekki explains. "We wanted to have a much deeper connection to our community with this project. It was actually developed more in mind of our own development streams than streamer outreach. We wanted our community to be able to play the game together with us, even when it's still in development. Thanks to the interactive streaming options, they can be a part of the game world and influence what's happening in the game."

**“Thousands of monsters with individual AI was a strain on performance”**

EXOR is also using its own in-house engine, which the team 'knows down to the bone'. "We know what can be done in a reasonable time frame and which topics should be avoided," Lekki says. "That provides a lot of confidence when making bold technical bets, like the one on adding ray tracing." Though at the same time, EXOR is avoiding the now-traditional route of opting for Early Access, instead releasing limited demos and betas of *The Riftbreaker*.

"We didn't want to be constrained by the pressure of constantly updating an Early Access version of the game, maintaining backwards compatibility of updates and a few other caveats

that are typical to Early Access projects," Lekki explains. "I think the Prologue we released last year, as well as our closed Alpha project

in combination with the Discord community, have created a fantastic way of gathering player feedback and the ability to react to what players expect of the game. At the same time, we've retained full creative control of the game with the ability to change anything at any time."

A more focused approach to development when compared to *X-Morph*, along with a creative way of garnering player feedback, and a deep knowledge of the tech backing it all up – oh, and a good concept, too – all combine to make *The Riftbreaker* a game with real potential from EXOR Studios. Hopefully, the pre-release passion translates into post-release positivity. 🌐

**CRAFTY**

There is, of course, a fair chunk of *StarCraft* in the look of *The Riftbreaker*, which we put to Lekki. "Thank you! I take it as a big compliment," he says. "*StarCraft* is one of the games that we've grown up with. I started my game development adventure by making fan-made maps for *StarCraft: Brood War* with my brother. *StarCraft* references are certainly running at the back of our subconscious all of the time. In terms of the visual art style, if you take a look at our previous games, we certainly like to strike a gritty naturalistic feel. For *The Riftbreaker* we wanted to go into rich, vibrant colours with references ranging from James Cameron's *Avatar* to coral reef documentaries."

Info

GENRE

Detective-'em-up

FORMAT

Windows / Mac  
/ Linux / PS4 /  
Nintendo Switch /  
Xbox One

DEVELOPER

EggNut

PUBLISHER

Raw Fury

RELEASE

Summer 2021

▼ *Backbone's* devs are almost all from Russia. "We just hired good people who are passionate," says Korabelnikova. "It just turned out that the majority of them are young Russian women."

# Backbone

Narrative designer Aleksandra Korabelnikova tells us how personal experience drives this dystopian noir adventure

**P**roving that inspiration can come from all kinds of sources, *Backbone* could have been a very different game were it not for a clattering of bins one day in Vancouver, Canada. At that stage, *Backbone* was still in its early planning stages, and was initially envisioned as a "sci-fi stealth concept". But then a raccoon started clattering about in EggNut co-founder Nikita Danshin's backyard, and at that point, says the studio's other co-founder and narrative designer Aleksandra Korabelnikova, "we couldn't stop laughing about the possibility of playing as a raccoon, who strategically steals other people's trash."

With the idea of a raccoon protagonist firmly planted, the concept steadily evolved from a trash-stealing mammal to a furry private detective in a fedora and trench coat roaming a benighted city. But while a point-and-click adventure starring a raccoon private eye might sound whimsical, *Backbone* has some darker,

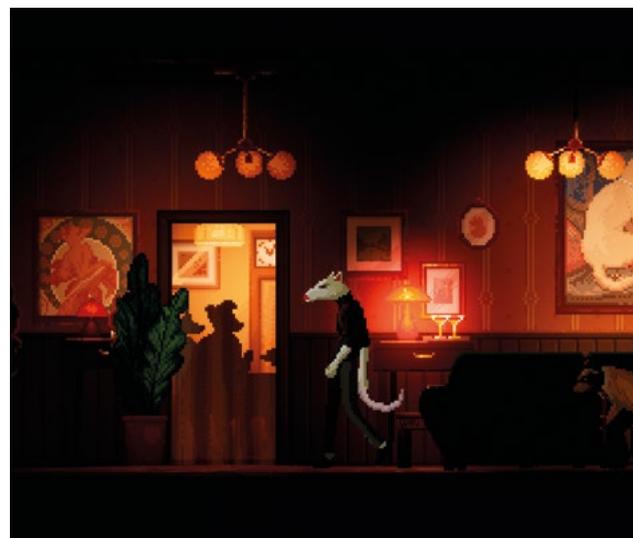
**"It's about how social structures are rigged, and how it's all intersecting"**

weightier themes on its mind, too. The game's set in a fantastical Vancouver that feels at once trapped in the past and somehow futuristic, but it's a dystopian city informed by the developers' formative experiences in Siberia. "This is the thing we talk about in the game," Korabelnikova explains. "Dystopias are usually invisible. This is what we were interested in exploring: it's not an in-your-face, military regime. Like, people don't die on the street or get shot – which is now

happening in Russia – it's more invisible. It's about how social structures are rigged, and how all of this is intersecting. [Exploring] the city

streets, you might not even notice it. So that's why a North American setting was more fitting for the story we wanted to tell."

The game's background is important, because while *Backbone* certainly looks like a noir thriller – its grimy streets are filtered through a neon haze, while social malaise and corruption lurk seemingly everywhere – it only uses that genre as a jumping-off point. "Personally, I don't like noir," admits Korabelnikova. "I think it's filled with misogynistic tropes, and I could never relate to the genre. I know there are exceptions, like neo-noir, which is more closely aligned to our culture's attitudes. But we never followed the





[noir genre's] rules – we just looked at it from a thematic perspective. Noir is the contrast between how the upper parts of society live, and how you exist on the streets. It's the contrast between light and dark, between rich and poor, between power and the absence of power."

*Backbone* follows detective Howard Lotor, an unassuming, solitary figure whose search for a missing husband draws him into a much bigger, darker mystery. The game's "a character study first and foremost," Korabelnikova explains, and one that draws heavily on her own story. "I took [from] my own experience growing up. I wrote about my parents. I wrote about how my understanding of the world evolved from what my parents had been telling me, and what I'd been experiencing in my personal life. And then understanding that nothing is easy, and I really can't change anything. I can't influence anything. Obviously, everybody on the team contributed to it, but I think the main character's mostly replicating my own anxieties. And I think

it's something that a lot of people can relate to, because people relate to truth. So I'm serving as a tiny mirror, and I hope other people will see themselves in that character and relate to him on a personal, human level."

Work first began on *Backbone* four years ago, when the fledgling studio began building a prototype which would form the basis of the game's 2018 Kickstarter campaign. It was a resounding success, and it's easy to see why: *Backbone* masterfully fuses 2D pixel art, 3D models, and subtle lighting techniques to create its moody, downbeat world. Play through the prologue (which you can download for free from [wfmag.cc/backbone](http://wfmag.cc/backbone)) and you'll find an immediately absorbing yarn – one that serves as the ideal primer for the full game, due for release this summer. The finished *Backbone* will lead directly on from the prologue, following Howard as he delves deeper into Vancouver's dark underbelly. The game will go to some pretty bleak places, then, but there will still be some light to be found, says Korabelnikova. "It's obviously not a very happy story, because like, let's be honest, life is not a happy thing," she says. "But I think the hopeful message is that even if you can't change the world, you can change other people's lives, and connect. And those meaningful connections are actually the meaning of life. Even if you can't change the dystopian governments in your country, maybe you can talk to people and find solace in other people's struggles as well. You can find solace in knowing that you're not alone." 🐾

## EXPRESS YOURSELF

While *Backbone's* plot is a linear one, "player expression" is a key part of the game, according to Korabelnikova. "When somebody tells you something, and when a character talks to you, you can choose what kind of person you are," she explains. "This is the approach that *Disco Elysium* has taken that I respect a lot: you choose what kind of person you are, how you express yourself in the world. Those choices are much more meaningful for the player, because they can make those small decisions that might not even affect the main story, but make them feel invested in the world. We don't even have any conditions for the ending – we don't have several endings, because we didn't want to tell many stories; we want to tell one good story. When you have a lot of choice, it's very difficult, because it becomes more complex with every additional choice. And we'd rather tell one good story, one character arc, and let players express themselves during the playthrough."

✓ The pixel art is gorgeous, but it's the sense of depth that hits you when you play the game – the mix of 2D, 3D, and lighting is superbly done.





# Ultrakill

With a name like that, what do you expect?

## Info

**GENRE**  
Fast-paced FPS

**FORMAT**  
PC

**DEVELOPER**  
Arsi "Hakita" Patala

**PUBLISHER**  
New Blood Interactive

**RELEASE**  
Out now (Early Access)

There's a bit of a meme with The Kids these days, about people who don't really play games much physically leaning and straining themselves – in real life – to aid in-game performance. Now, ignoring the fact we all did this on *Mario Kart* at one point or another, the intent is simple: to highlight that those not 'into' games aren't as cool and comfortable as the extremeperts ("extreme experts") who sit in stony, unmoving silence as they blitz their way through any challenge put in front of them. I have been playing games for 30-something years, so consider myself one of those extremeperts. *Ultrakill* nearly made me fall out of my chair I was leaning and straining so much.

**"Every player is different, so giving them some wiggle room is important"**

It's just. So. Pacey. It's an FPS that remembers the genre from the mid-1990s as full of quick-footed games, but didn't actually check *how* fast they were. So instead of it feeling like *Duke Nukem 3D* or *Quake*, it feels like *something much faster*. In a regular FPS that would be a bit much, but *Ultrakill* mixes things up by plopping it into Unity and adding a dash of *Devil May Cry*. Yes, the third-person action-adventure series from Capcom. Bear with.

"*Devil May Cry* is probably the most important [influence] for the project, as much as it may come as a surprise," explains Arsi "Hakita" Patala, creator of *Ultrakill*. "I always wanted to make

*Ultrakill* more of a 'What if *DMC* was an FPS?' than 'What if an FPS had *DMC* elements?', but as it turns out, *DOOM* (both classic and the new ones) shares a lot of game design philosophy with character action games, which really made it into a natural fit."

The initial idea for the game, however, involved no *Devil May Cry* – in fact, it hardly involved any game at all, coming as it did from a design course assignment in which Patala was asked to craft a main menu for a made-up video game. "My fake game idea was to have the most absurd balls-to-the-wall FPS, and I wanted to give it a

fittingly absurd and blunt name," he says. "So I followed the Japanese naming convention of just mashing together two cool English words, even

if it ends up not making any sense, and came up with *ULTRAKILL* (in caps for extra impact)." Work on *Ultrakill* didn't start for a while, with a foray into designing a *Metal Gear Solid*-like abandoned before moving onto the over-the-top FPS: "I took [the design course assignment] as the base and started putting in all the fun things I could think of: fast pace, extreme popcorn violence, complete focus on non-stop gameplay, a style meter, emphasis on player expression, etc. And over time it shaped into what *Ultrakill* is today."

The style meter is fed by your combos – chaining kills together, bagging headshots, taking out multiple enemies from a wave in





▲ Your run-of-the-mill husks can do serious damage if you let them overwhelm you, or if you stand still for, say, half a second.

one shot, making trick shots, and much more. Stringing these abilities together builds up your combo meter, which builds up your multiplier, which leads to higher scores – good for both boasting about and for buying new weapons and equipment as the game progresses. On playing *Ultrakill*, it immediately feels *right* – there have been combo systems and speedruns in shooters before, but this one has a different impact to it, be it thanks to the pace, the visuals, or the intangible *feel* of the game.

“A good combo system is one that both gives players enough freedom to build their own variation of the game’s preferred playstyle while also encouraging them to not get complacent or rely on the path of least resistance,” Patala says. “The style system is great for immediate and constant feedback on the player’s performance as well as pushing them to vary things up without forcing them to. Every player is different, so giving them some wiggle room is important to keep them engaged and make sure they’re having as much fun as possible.” This stretches to things like allowing players to switch weapons at any point – it might mean cancelling out of an animation, thus making things look a bit janky, but keeping the flow is more important.

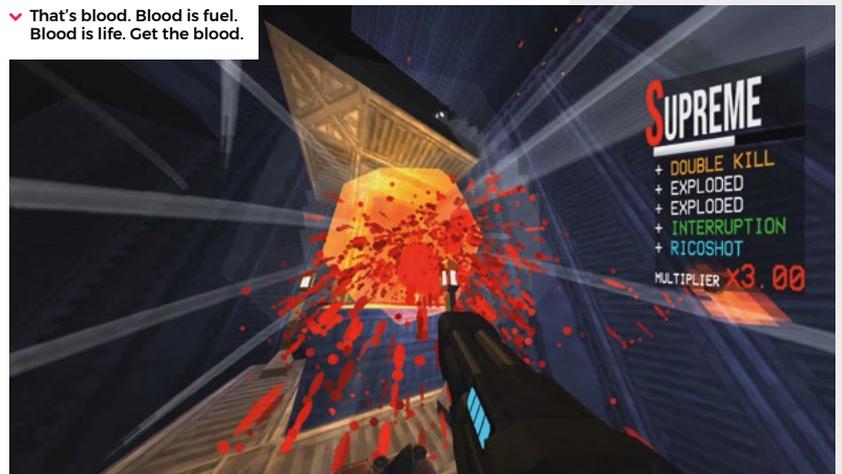
*Ultrakill* is currently available through Early Access, with a launch looking to land either later this year or early next. EA is useful for Patala, who gets direct feedback from those who matter the most: the players. “The best part of getting player feedback during development is that, as a developer, you already know how the game is supposed to be played,” he says, “So you tend to miss out on a lot of design problems, errors, and bugs that the average player is likely to run into... It’s a lot more fun to do things when you get to hear [what] players enjoy. Sometimes all it takes to get out of a rut is to see a meme or piece of

fan art that someone put effort into making just because they liked what you’ve made.”

There’s negative feedback, of course, but generally speaking, it’s a positive experience for the developer, who is largely working alone on *Ultrakill*. Help comes with elements like models and other art assets, as well as more complex systems coding. “I always make sure to be a part of all of it though, to ensure the game continues to have a consistent direction and vision,” says Patala.

“For me, this is the ideal way to make the kinds of games I want to make,” he continues, “since this means I retain full control of the project while still being able to rely on people who are better at some things than I am. My development style tends to be improvisational and impulsive, which would be far too messy, if not completely impossible, with a large team.”

▼ That’s blood. Blood is fuel. Blood is life. Get the blood.



## 2 FAST 2 FURIOUS?

Asking Patala if the game was ever too fast – or too violent – brings up some interesting discussion: “The game speed only ever really went up during development, but there have been occasional moments where specific instances had to be slowed down for the current difficulties,” he explains. “[The] blistering intensity will have to be saved for the really high difficulties that only the already experienced would play.” But what about the claret? Afraid of offending the neo-Mary Whitehouse brigade? “Never,” Patala says. “The violence has only ever really been there for the fun, impact, and feedback. It’s important to me to keep the gore in that fun popcorn zone, like the kind you’d see in a 1980s action movie with practical effects, but amplified. There are some pretty grotesque and creepy creature designs, but I make sure it doesn’t go extreme enough to feel eggy or uncomfortable for the grand majority of players.”

# That was the month that was

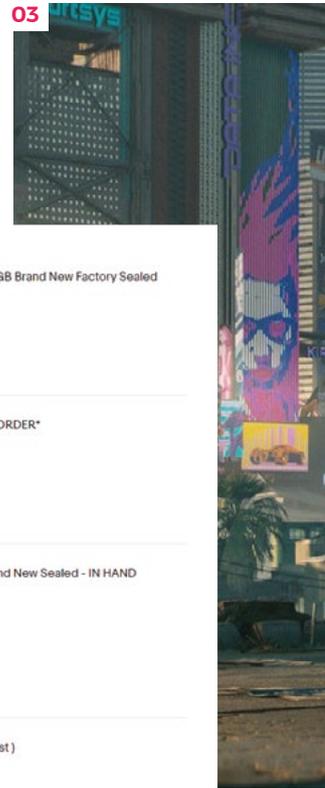


## 01. Empty Stadiums

We were there at the beginning, and now – a whopping 15 months later – we’re there at the end: Stadia’s wild ride has come to a close. Well, it has for Google’s internal development studios working on Stadia games, at least. Google announced early in February the closure of the company’s two studios, based in Los Angeles and Montreal, in a blog post from journeyman executive Phil Harrison. “Creating best-in-class games from the ground up takes many years and significant investment, and the cost is going up exponentially,” wrote the ex-Sony, Microsoft, Atari, and Gaikai exec. “Given our focus on building on the proven technology of Stadia, as well as deepening our business partnerships, we’ve decided that we will not be investing further in bringing exclusive content from our internal development team, SG&E, beyond any near-term planned games.” The future for the platform (and the membership functionality) seems secure for now, and Google will be pitching Stadia as a service for third parties to take advantage of, rather than an internal project to forever change the face of gaming. It is a bit sad, as when it works, Stadia is *phenomenal*. It just asks too much of people, both from an internet connectivity stance, and from the stance of how much the membership-plus-price-of-individual-games offering goes.



*Terraria* on Stadia cancelled after lead dev’s Google account blocked



02

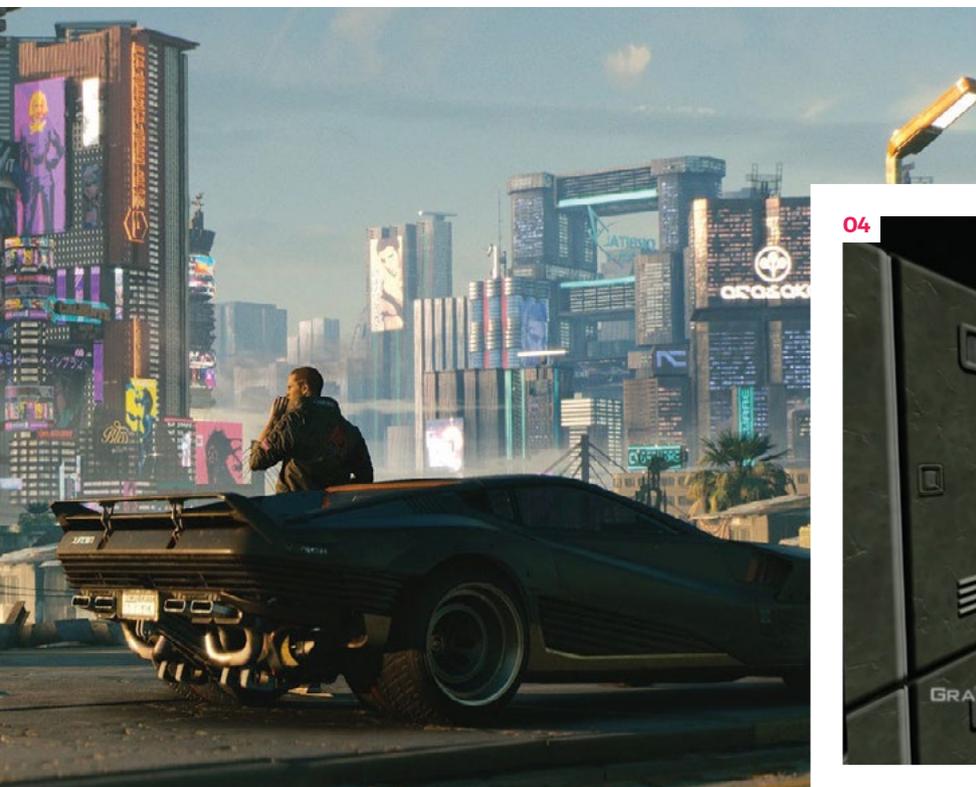
	Sold 28 Nov 2020 Sony Playstation 5 PS5 Console Disc Version 825GB Brand New Factory Sealed Brand new <b>£1,561.00</b> 71 bids + £19.99 postage View similar active items Sell one like this	28-Nov 21:48
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	Sold 8 Dec 2020 PS5 console disc edition ( in hand and ready to post ) Brand new <b>£1,550.00</b>	06-Dec 19:16

## 02. Scalps and sales

Scalpers have been hard at work ruining the efforts of many trying to pick up both PlayStation 5 consoles and Xbox One X and S units. Now a bill has been introduced to the UK government in an attempt to ban the practice of buying the machines solely to resell them, applying similar restrictions to those seen in the ticket reselling market. It’s a bold move that’s unlikely to stick – especially as it’s wishy-washy how it would impact regular, non-scalping sellers, but at least something maybe slightly *looks like* it’s being done to combat this naked profiteering? Yeah, that. Boo to capitalism.

Meanwhile, Sony is still celebrating sales of over 4.5 million PlayStation 5 consoles, even if, according to our entirely made-up maths, about 89% of said sales came from scalpers. Despite supply chain constraints and a slower rate of production than was anticipated, Sony says it still expects a larger profit than it’s ever seen previously – *plus* the PS5 is being sold at a loss, so this is all being made up through sheer weight of numbers contributing to first-party software sales, digital downloads, and memberships like PlayStation Plus. Huzzah for capitalism!

**Mass Effect spin-off inspired by Han Solo and Star Control discussed; never got anywhere**



### 03. Cyberpunk 2021

It seems fitting that the company making a game about a hyper-connected future world – yes, we’re talking *Cyberpunk 2077* – so reliant on hacking would itself be hacked for information about said title – and others – in the year 2021. So it has come to pass, with CD Projekt revealing it was the victim of a hack in which the operators claimed to have stolen massive amounts of data relating to *Cyberpunk 2077*, *The Witcher 3*, *Gwent*, and even an unreleased version of *The Witcher 3*. CDPR acknowledged the hack, publicly posted about the hackers’ demands, then promptly refused to give in to any ransom demands.

Since then, we have seen some details leak to the public, and soon after, information began trickling out that source code for *Cyberpunk 2077* and *The Witcher 3* had been auctioned off and sold on the dark web. On one hand, this is bad and wrong, but on the other, it’s very on-brand marketing for the upcoming *Cyberpunk* patches and DLC. Less amusingly, the cache of data included – as well as the source code – legal, HR, business, and other sensitive documents from the studio. Who knows what the winning bidder, who offered around £5m for the cache, will do.

04



### 04. Getting beta

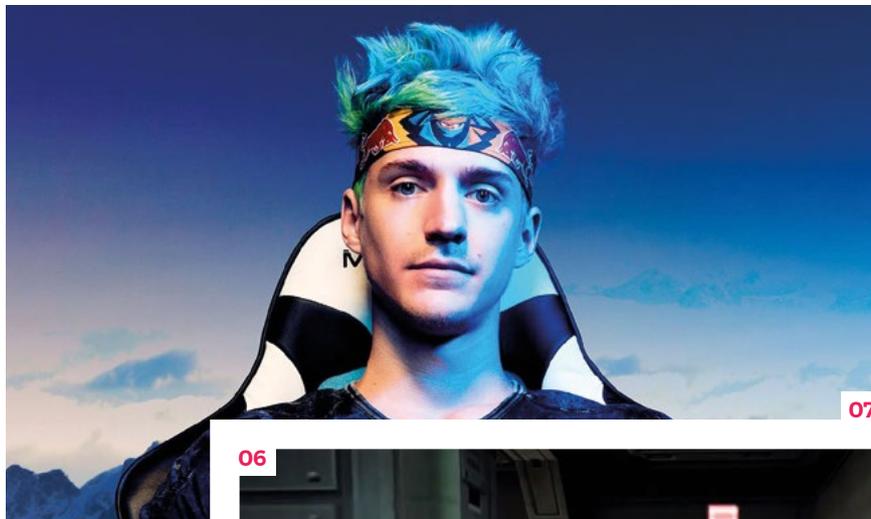
In less nefarious hacking news, two very different beta versions of popular N64 games have popped up in the wild for the first time. One was discovered by a game preservation group in the shape of a *Legend of Zelda: Ocarina of Time* beta, which features unique areas to this version, as well as different designs for items and objects. It’s still being pulled apart by the community and seems like a thoroughly wholesome time is being had by all.

Elsewhere, the once thought to be long lost Xbox 360 remake of *GoldenEye 007* showed up in early February, and slightly set the world alight with excitement. While it’s not specifically above board to go find yourself a copy of the game and play it either via an emulator or hacked Xbox 360 console, you can do just that and enjoy a near-complete HD version of the bar-raising N64 FPS. Originally made to be released around 2008, the 007 remake was cancelled owing to rights issues and has never been able to navigate the muddy waters around Bond, James Bond, and the legal approval to re-release a game about the spy/mass murderer. So why not cut out the middle man and go straight to the action? Why not, indeed. We technically don’t approve of any of this, by the way.

Non-BioWare studio rumoured to be working on a *KOTOR* reboot



A claymation *Star Fox* show was in the works in 2015, then cancelled by Nintendo



07



05

## 05. Tingling

Nintendo's Takaya Imamura, artist and character designer behind the likes of the *Star Fox* and *F-Zero* franchises – and Tingle from *The Legend of Zelda* – has retired after some 32 years with the company. The assumption is he is going freelance after the past three decades working on the likes of Fox McCloud (based on Shigeru Miyamoto, apparently), and Captain Falcon. As well as plenty of art direction and supervision across the various *Star Fox* and *F-Zero* games, Takaya also directed two titles while at Nintendo: *Tank Troopers* and *Steel Diver: Sub Wars*, both for 3DS. We wish him the best of luck in his future endeavours.



06

## 06. \*MGS surprised noise\*

Early translation-related fears had the internet all a-flurry that Konami was closing down its gaming division, but – fortunately – that's not the case. Even though Konami does little other than, what, *PES* and pachinko these days, it would still have been sad to see. Anyway, what *is* happening is some good ol' internal restructuring, with Product Divisions being consolidated and key members of staff being shuffled around into new roles. But the question remains: will it all lead to a new *Silent Hill*? If in asking that question you mean a pachinko version of the survival horror classic, we'd guess yes. A video game version? Not so much.

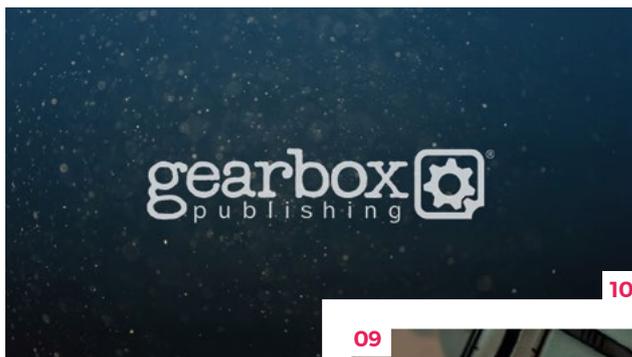
## 07. Nonfluencer

Incredibly rich influencer with audience consisting of millions of impressionable fans hanging off his every word, Ninja, has said it's not his 'job' to educate these malleable young minds on the ills of racism and sexism. Because if you have a platform, why would you bother using it for a socially beneficial impact, eh? The millionaire was speaking to the *New York Times* when he made the comments, and went on to talk about how he refuses to stream with women because – paraphrasing – 'people will talk'. Great, cool, what a guy. Glad he's got so much sway.



Ex-EA Sports chief Peter Moore back from world of real sports; joins Nifty Games

*RuneScape* stewards Jagex acquired by investment firm, The Carlyle Group



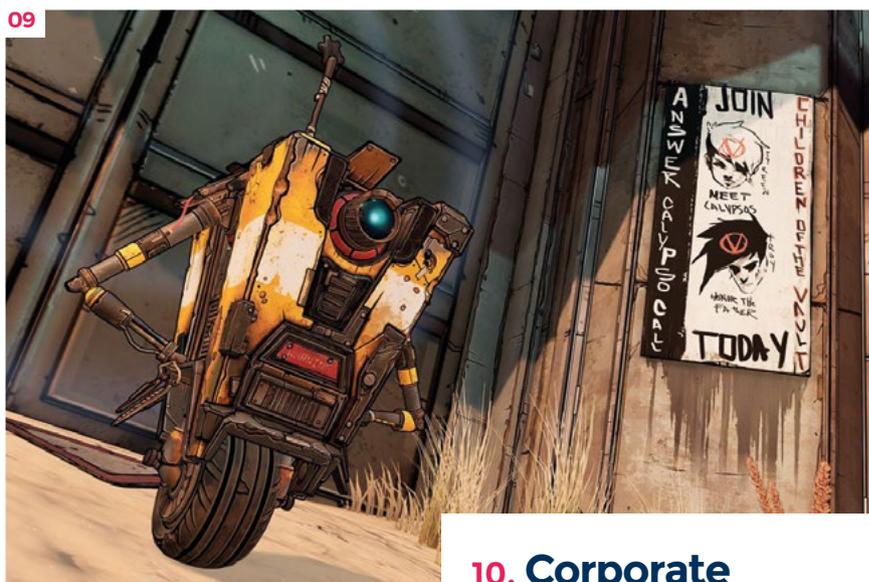
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08

## 08. Live-ing dangerously

Xbox will see a price rise for its Xbox Live Gold service, pushing the price to double its previous level for a twelve-month subscription... wait, no... a few hours passed and the announcement was reversed. Yes, Xbox was all set to bump up the price of its non-Game Pass subscription, which is still available, before changing course less than 24 hours later when the internet predictably exploded about it all. "We messed up today and you were right to let us know," a statement from the company read. Oh crikey, did they ever let you know.



09

## 09. Utter claptrap

The *Borderlands* movie suddenly seems a bit more than one of those vague things you hear a bit about then never hear about again – multiple talents have signed on to the project, with the likes of Cate Blanchett (as Lilith), Kevin Hart (as Roland), and Jamie Lee Curtis (as... who cares, she's ace) being joined by one Jack Black as the voice of robotic irritant, Claptrap. The movie is set to be directed by Eli Roth and, at the time of writing, doesn't have a set release date. Here's hoping it's funnier than the games.

## 10. Corporate embrace-r

Sticking with Gearbox, the developer/publisher behind the *Borderlands* series has been acquired by Embracer Games for around £940m. The studio will continue a working relationship with publisher 2K, and *Borderlands* will continue to be a 2K-published title. What in the blue hell is Embracer Group? Why, it's formerly Nordic Games Publishing/THQ Nordic, of course. Where the Swedish holding company found enough to fund a purchase of almost a billion quid, we've no idea, but it'll be fun to see what happens with Gearbox in the coming years.

E4 to reboot *GamesMaster*; putting ourselves forward as stewards of a rebirthed *Bad Influence!*



A new Game Boy game? Why not, eh – check it out: [wfmag.cc/GBKS](http://wfmag.cc/GBKS)

# Post Apocalypse

Console scalpers, and physical versus digital game releases: it's this month's letters



Issue #47

Want to write to Wireframe?  
Message us at [wfmag.cc/hello](mailto:wfmag.cc/hello)  
or tweet us @wireframemag



## Scalping the scalpers

Another month goes by, and in the UK, there's still little sign of console stock. That Sony's PlayStation 5 and Microsoft's Xbox Series S and X seem to require Indiana Jones-esque levels of adventuring to track them down.

Like many, I accept this is part of the game now when you're launching a new games console. Scarcity drives the demand up. I get it. What leaves such a sour taste is the ongoing success of scalpers in getting their hands on whatever stock seems to be available. As soon as there's a stock drop, it seems a Twitter post from a bunch of scalpers isn't far behind, boasting of how many machines they've managed to bag.

In an internet awash with CAPTCHAs and other such irritating ways to stop us from getting to the page we want, I'm genuinely bereft as to how bots can continue to game the system. I can only conclude that it's to the benefit of the console manufacturers to let this go on. That they see the advantage in their new machines selling on eBay for twice the retail price. That it creates the impression of a machine worth more than it is.

Stuff 'em all, I say. I'm sick to the back teeth of it. You never had this problem with the Commodore 64.

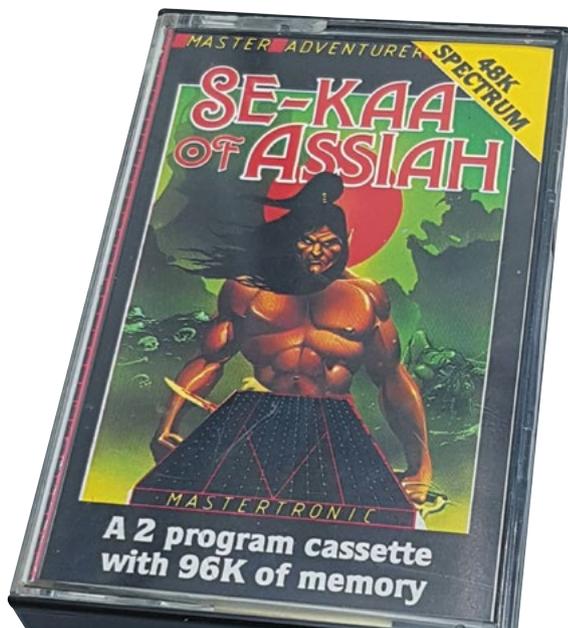
**Robert McDonald**

### Ryan writes:

So far as I can make out, the scalpers and stock shortages have less to do with console manufacturers – who, let's face it, would much rather we all had one of their new wonder boxes so we could start buying games for it, which is where the real profit is – than it does our increased migration to online retailers. Buying and selling on the internet has made it far easier for scalpers to organise, purchase larger quantities of consoles, and then

attempt to pass them on for increasingly outlandish sums. There's been some talk of the UK bringing in laws to tackle the scalping of consoles and similar goods, from the banning of automated bots to caps on prices to ensure systems aren't sold for more than their retail price. We'll have to wait and see whether any of that comes to fruition. In the meantime, maybe the government could do something about the increasingly overheated UK housing market, too...





## Let's get physical

My local shopping centre, when this lockdown stuff finally comes to an end, is going to look like one of those zombie movies where the undead roam the insides of a long-abandoned mall. With loads of big chains shutting up shop or being taken over byetailers, and GAME seemingly in the claws of Mike Cashley, I begin to wonder if this is the start of the end of physical game retailing. I'd hate it if that were the case.

On the day the last FIFA game came out, my Facebook feed was full of parents swapping stories of their offspring being nice to them for a change, and asking them to start the download of it in time for their kids getting back from school. During my own upbringing, it was the joy of going into a shop and coming back with a Mastertronic game, or perhaps a huge box arriving from a mail-order company.

But physical boxes have always been part of the lustre of gaming, haven't they? The artwork, the care. All that stuff you don't get with a download that seems to take a year to download.

There's one game shop left in my local shopping centre. I'd hate to see it go. I hope the digital edition of the PlayStation 5 fails miserably too. Discs: you won't

know what you've got there until they're gone.

**Liam Reynolds**

### Ryan writes:

**As a collector of video games and related tat, I agree there's nothing like the tactile quality of getting a brand new game. But then again, as my shelves have started to groan under the weight of older titles to the point where I've begun wondering where I can find space to fit new ones, I've said a quiet prayer of thanks for digital storefronts. They mean I can purchase and download as many games as I like, and reserve buying physical versions for the occasional titles I'm looking forward to the most. Ideally, digital and traditional retail would live side by side, but the convenience of online shopping probably means the momentum lies on the latter. Still, at least there are plenty of companies - from Nintendo to smaller outfits like Strictly Limited - flying the flag for physical releases. Side note: the scenario you describe sounds perfect for a *Dead Rising* sequel to me, Liam. If you're reading this, then get on it, Capcom.**

## Shortcuts

Pedro Pascal and Bella Ramsey are set to star in the TV adaptation of *The Last of Us*. So we asked our Twitter readers: who would you like to see play your favourite game character and why?

Toni Collette as SHODAN, with Blake Lively as the template for all Brood Mothers. They both have the chops for these parts. [@Pyr0sa](#)

Glenn Howerton as Handsome Jack [from *Borderlands*]. He's proven that he can play the funny narcissist. [@Ohm2k](#)

I'm here for an *Assassin's Creed Valhalla* movie with Eivor played by Birgitte Hjort Sørensen or Ragga Ragnars. The entire story makes so much more sense with the female version of Eivor, and both Birgitte and Ragga are badass! [@alexjrsic](#)

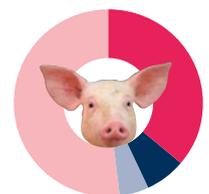
Matt Berry as Master Chief. That voice coming out of the Spartan helmet would be a thing to behold. A whole extra level of gravitas that the franchise has been lacking until now. [@thebrainofchris](#)

Andy Serkis as the horrible goose. He has a wealth of experience playing non-human characters, and this has all the potential to be his most sinister role yet. [@GaryAStott](#)

Jensen Ackles as Gabriel Knight, because he's done with *Supernatural*, and he'd be perfect to play the role of a Schattenjäger. [@troy\\_d21](#)

## The burning question

The BBC recently revealed that pigs can now play video games. With this in mind, we asked Twitter: which of these titles would a game-addicted hog be most likely to play?



**Hogs of War - 36.2%**

**God of War - 5.2%**

**Dogs of War - 6.9%**

**Phogs (of War) - 51.7%**

# Indie



## Rogue Invader ↑

A simple twist, *Rogue Invader* pitches an alien invasion tale in which *you* are the one doing the invading, to fight back against an alien race which has already successfully invaded. Still here? Cool. Developer Squishy Games mixes a visual style not too far from the Game Boy with modern flourishes to its roguelike structure – running and gunning, rolling and dodging, upgrading and re-equipping, that sort of thing. It looks fab, basically.



## Retchid ↑

One part *DOOM 3*, one part *Exhumed* (or *Powerslave*, if you like), one part us realising 'Oh wait, indie devs are onto the *DOOM 3* era now for the childhood loves they're taking inspiration from'. *Retchid* is early along its development process but showing some promise, bringing together the elements just mentioned in a straightforward and decidedly old-fashioned FPS of 20 levels across three episodes, with some multiplayer in there. It's hammering the 'traditional' drum, but all the same, has piqued our curiosity.

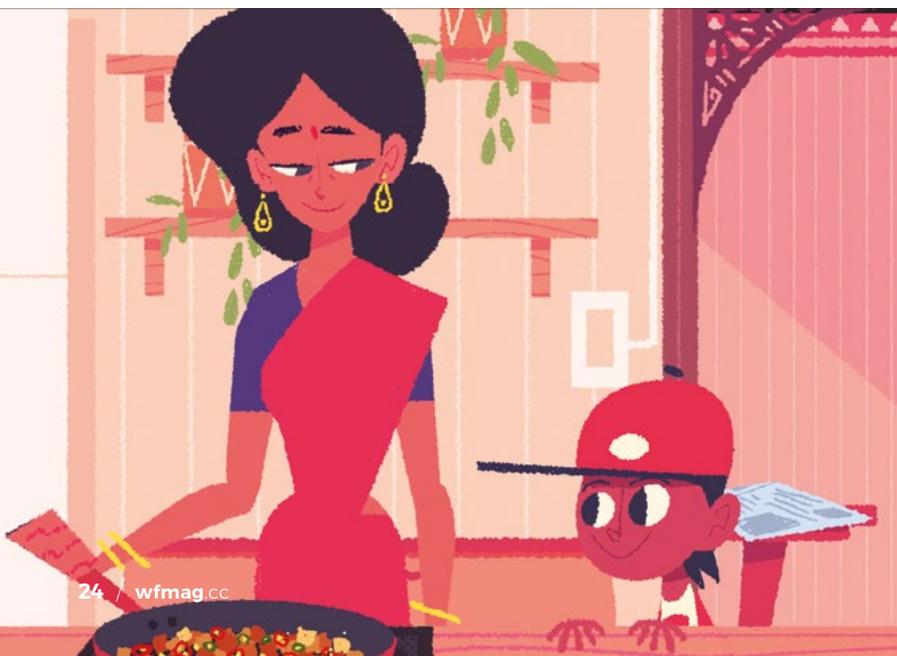
## Venba ↓

Playing as an Indian immigrant to Canada in the 1980s, *Venba* is a mix of narrative and cooking sim sure to offer a unique experience. One minute you'll be conversing with the family in branching conversations, the next you'll be cooking up any one of a number of authentic Indian recipes, themselves serving as a connection to the home left behind. It's not often a game looks great and sounds delicious, but here we are.



## Mineko's Night Market ↑

We've not heard much from this one since we featured it all the way back on the cover of issue 8, but things are apparently still on track for a release sometime this year. A magical romp through a Japanese-inspired island, with a giant cat-thing friend? We're still massively looking forward to this – fingers crossed it'll all come together.





## Ashwalkers ↩

*Ashwalkers* is the debut title from Nameless XIII, a studio set up by one of DONTNOD's founders, Hervé Bonin. As such, it's the sort of thing that gets a certain subsection of folks a mite a-flutter. The rest of us, meanwhile, will join the same a-flutter feel after reading about how the game sees a band of four survivors making their way through a post-apocalyptic wasteland, doing whatever it is they can to *continue* surviving. What that translates to in rough-and-ready game terms is a series of decisions to be made – choices with far-ranging consequences, that all builds to one of 34 possible outcomes. With a striking greyscale look to things and the backing of a new team keen to build on what it has collectively learned at previous studios, there's a fair old bit of hope surrounding *Ashwalkers*. So long as we're looking at a fleshed-out story with decisions that aren't a series of binaries, and so long as the touted 34 endings aren't variations on the same basic theme, there's every chance this one could be a narrative winner.

## Dordogne ↗

This one came to our attention after being highlighted on Steam as being 'similar to something else you play' – said something else being *Skyrim*. Which is... hmm. Anyway, it's still good to be made aware of these things, because *Dordogne* has the potential to be a delightful little distraction from the usual blend of cynicism and shooting elsewhere in games. You play a 32-year-old woman returning to her grandmother's home, wherein she finds letters and puzzles from the recently deceased matriarch. Reading and solving involves skipping back in time to the memories of our lead's ten-year-old self, taking actions and resolving tasks to make an impact on the current day world. So... nothing like *Skyrim*, then.



## Attract Mode Early Access



### Road 96 ↗

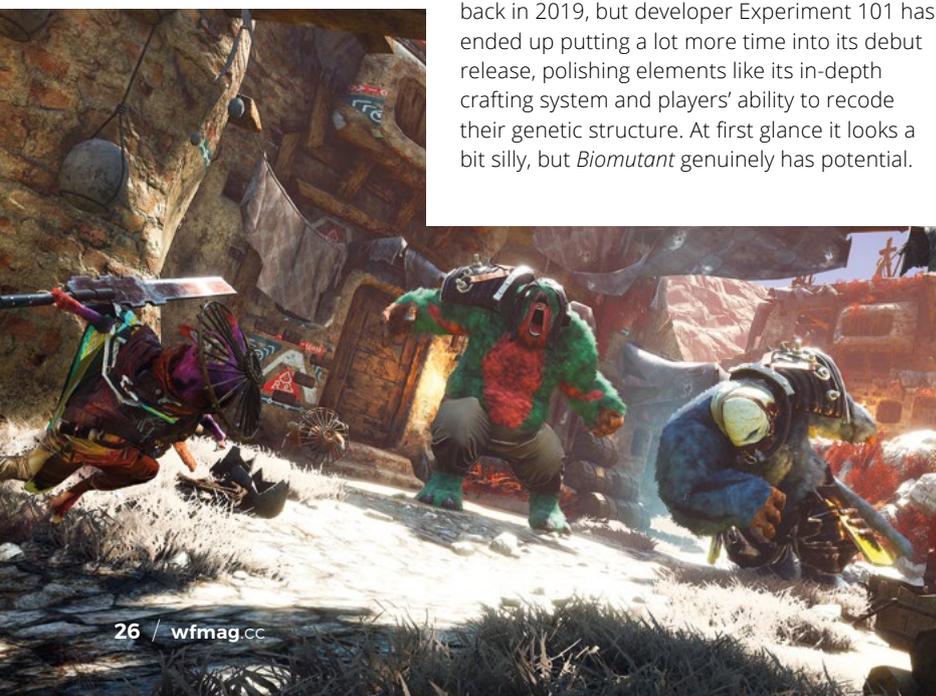


Road trip games appear to be the new hot thing in indie releases, and it's easy to see why. They offer the chance to present players with practically anything, for any reason – while at the same time offering the chance to limit things as the developer sees fit, whether that be the environment you see rolling by the outside of the car, or where the story itself might head. *Road 96* opts for a procedural approach and so lays on the broader side of things, allowing players to take thousands of different routes on their road to escape from an authoritarian

regime. It's an escape to the border, in essence, with interactions and activities along the way to break things up – or break things down, in some circumstances. But while a lot of the road-trippin' titles we've seen popping up in recent months have veered more to the twee side of things, *Road 96* wears influences like Tarantino, the Coen Brothers, and Bong Joon-Ho proudly on its bonnet – so while you should expect 'contemplative melancholy', it's also fair to assume there might well be chunks of surprising violence popping up.

### Biomutant ↘

It feels like *Biomutant* has taken forever getting here, but there's finally a date attached: 25 May. Then we'll finally be able to jump into this kung-fu open-world post-apocalypse, as heavy on quirk as it is on hyphens when it's being described. The game was expected to launch back in 2019, but developer Experiment 101 has ended up putting a lot more time into its debut release, polishing elements like its in-depth crafting system and players' ability to recode their genetic structure. At first glance it looks a bit silly, but *Biomutant* genuinely has potential.



### A Long Journey to an Uncertain End ↗

A 'narrative-focused space opera', you say? Big tick in the 'yes' box. 'Flying around the universe assembling an unruly crew from an eclectic cast of characters', you add? Oh, Crispy Creative, have another big tick in the 'yes' box. And while you're travelling the 'verse getting into situations and scrapes in an attempt to keep a step ahead of your abusive ex, all the time you're playing as the spaceship? Three big ticks, and we're sold.



## The Wild at Heart ↗

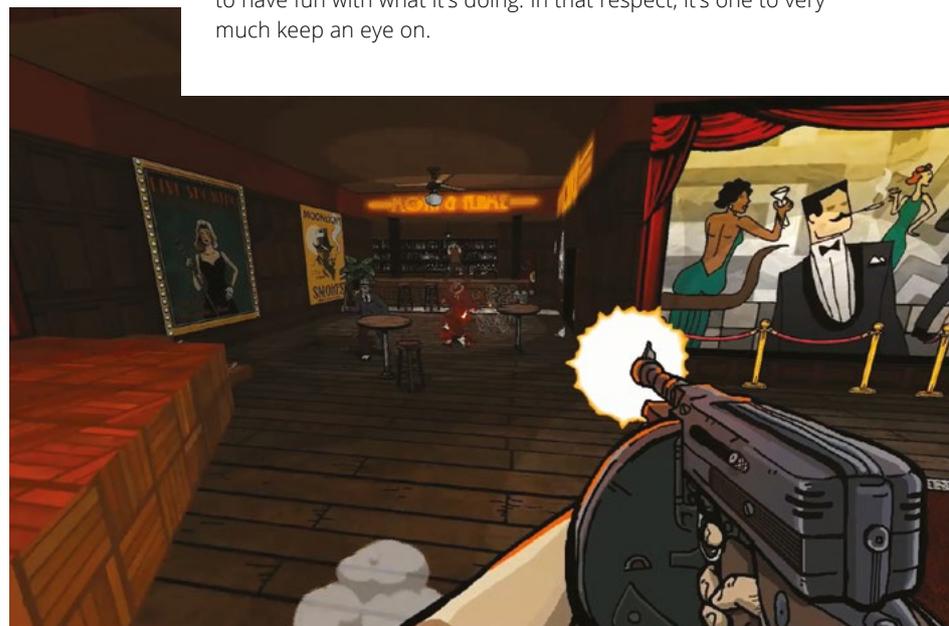
Exploration and puzzles to solve, mysteries to uncover and crafting to be crafted – *The Wild at Heart* has a lot going for it to make anyone with a passing interest in something vaguely similar to *Don't Starve* sit up and take notice, sure. But *look at it*. It's an utterly gorgeous game, with richly detailed environments and characters walloping you right in the face the second you set eyes on it. We'd never be so shallow as to recommend something based on looks alone, but still...

## Fallen Aces ↘

Created by Trey Powell and Jason Bond – and published by the group that brought such delights as *DUSK* to the fore, New Blood Interactive – *Fallen Aces* mixes a 1990s-style FPS with violent 1930s gangster...ness. It's a comic book noir crime thriller that mixes as much melee-based violence (and the odd tommy gun) as it does visual flair; the living comic book style of things meshing nicely with the frankly brutal combat, which can be described in a word as 'abitoverthetop'. But *Fallen Aces* doesn't look like it wants to reinvent anything particularly; it's just another one of those retro-inspired FPS titles that wants to have fun with what it's doing. In that respect, it's one to very much keep an eye on.

## Here Comes Niko! ↘

Niko makes their way from island to island, helping out people (and creatures) as they go in a dainty-looking 3D platformer. In fact, developer Frog Vibes describes *Here Comes Niko!* as a 'cosy 3D platformer for tired people', which really makes it one of the most Wireframe games ever made. You've six islands to explore, folk to help, and your boss is a frog. What's not to like?



# LIFE AFTER PERMADEATH

An examination of the fear  
– and allure – of gaming's  
ultimate penalty

**WRITTEN BY**  
RYAN MCADAM



Whether death results in having to restart from the very beginning of a game, a character you've invested time into perishing, or losing items you worked hard to gather, there is one underlying principle that remains constant throughout games featuring the permadeath mechanic: mistakes bear heavy consequences. While other titles might simply tell you to dust yourself off and try again – or maybe, like the arcades of yesteryear, tantalise with the offer to continue if you have the coin to spare – titles featuring permadeath make things far more clear-cut. You're dead. It's done. You either start again entirely, or you've lost a specific character forever. It can be brutal, but it's also a beloved facet of many games, and is often used by developers in different ways, and for very different reasons.

"We wanted to have the feeling of a suicide mission – a plucky crew risks terrible odds to hopefully pull off a daring feat," explains Justin Ma, co-creator of *FTL: Faster Than Light*. In the game – a spaceship-based roguelike placing you in the captain's seat – you're given the job of micromanaging your crew on a mission to save the galaxy. For Ma, artist and co-designer at Subset Games, using permadeath helped to replicate the stakes that are constantly

**"WE REALLY WANTED YOU TO FEEL A SENSE OF DESPERATION"**



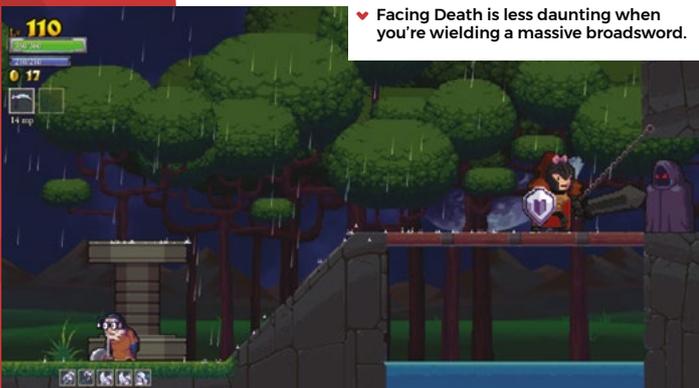
▲ Who would have thought that your biggest concern in *FTL* would be doors?

present in space travel. "Space is an inherently dangerous and life-threatening place," he says. "The knowledge that one stray asteroid could lead to a chain reaction of events that eventually results in the destruction of your ship certainly feels close to the way I picture space travel would likely be."

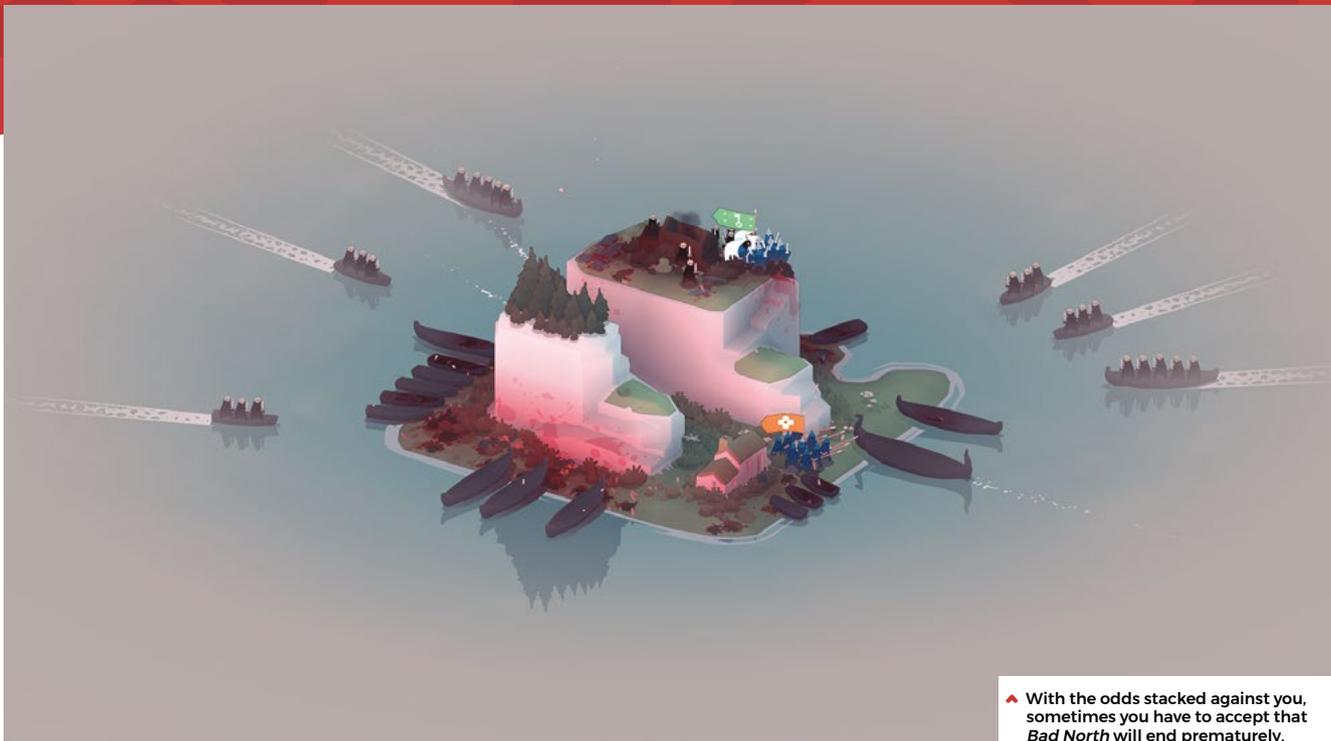
Permadeath was thought of as the best way to make this sense of threat resonate with players. "Some games would give this feeling through the illusion of danger without any real outcomes for failure other than reloading an auto-save," says Ma. "We really wanted you to feel a sense of desperation, and that's only possible if there are serious consequences for failure."

Teddy Lee, part of the *Rogue Legacy* team at Cellar Door Games, says using permadeath in this manner requires a certain degree of resourcefulness to capture the player's imagination: "On a narrative level it can be tough, and you need to be more clever with how you tell the story, since there isn't really a singular protagonist you can identify with."

*Rogue Legacy* is a 2D roguelike platformer riddled with fast-paced and decidedly difficult combat encounters, where each death brings the permanent demise of your current character. Standard fare. But from there, the deceased's offspring takes up the mantle of hero. Where one falls, the next rises. Stakes ➔



♥ Facing Death is less daunting when you're wielding a massive broadsword.



▲ With the odds stacked against you, sometimes you have to accept that *Bad North* will end prematurely.

### PERMACRAFT

Few streamers can say they've appeared on BBC News, but Phil 'Philza' Watson has. It happened when his five-year run on *Minecraft* came to an end in April 2019. Viewed over 1.5 million times, the fatal blow was landed following a series of unfortunate events involving a baby zombie, a skeleton, and a spider. Over that five-year period, Philza walked a distance of 6316 km, jumped 732,389 times, and flew 7798 km on his journey to setting a record for the longest permadeath run in *Minecraft*.



like these, when incorporated in games like *FTL* and *Rogue Legacy* can, however, provide the building blocks for you as a player to construct your own self-told narrative – a journey in which every decision you make can be the difference between a run coming to an abrupt end or progressing. It helps to make each hard-fought victory all the more substantial.

### UNTIL DEATH

Film and television's use of death – and its finality – usually focuses on the desire to create a specific emotion, or have a scene resonate with the viewer. With that approach in mind, Supermassive Games sees permadeath as a necessity in achieving a cinematic, slasher flick style to its games.

Pete Samuels, executive producer and series director for *The Dark Pictures Anthology*, says the team felt it learnt a great deal from *Until Dawn*, and applied that knowledge to the studio's more recent title, *Man of Medan* (part of *The Dark Pictures Anthology*). "One of the challenges we took on in the design and development of *Man of Medan* was to significantly increase

the variation in the ways that characters could die," says Samuels. "People found the deaths themselves a great source of entertainment, so we set out to increase the variety, as well as the number of possible causes of death."

The twists, turns, and shocking moments that we recognise as being a cornerstone of film and television is brought to the fore in *Man of Medan*, only this time with the player acting as the director in their own horror film. Contrasting the way in which games like *FTL* and *Rogue Legacy* are reliant on the player to become invested in their own self-told narrative, in games like

*Man of Medan* and *Until Dawn*, the player is given the opportunity to make decisions that will impact the direction a story will go. But while giving the player the ability to have

### "WE SET OUT TO INCREASE THE VARIETY AS WELL AS THE POSSIBLE CAUSES OF DEATH"

a real, meaningful impact on how events play out emphasises player agency and engagement in a storyline, it does come with challenges. Giving them the ability to decide who pays the ultimate price, for example, comes at a cost of its own. "Possibly the greatest challenge is ensuring that the player never feels cheated by the game," Samuels says. "The death of a character the



▲ In *FTL*, an unfortunately placed asteroid field or nebula could spell disaster if you're not careful.

player cares about feels like a huge price to pay for a poor decision or inappropriate reaction, and it's important that the player always feels like it was their fault, that they could or should have acted differently, and that the game had given them sufficient information to do that."

Becoming attached to a character who at any point can be snuffed out is a double-edged sword. The player becomes more invested in the story and their actions, but if a wrong decision is made or they fail to react quickly enough, there's the risk the player may feel hard done by. This use of permadeath as a core mechanic balanced with the need to keep the player on-side is a challenge Lee shared in the creation of *Rogue Legacy*. "Permadeath, if done right, should encourage players to learn the system, rather than memorise the system," he says. "And it teaches this through consequence, which can also be fairly frustrating, so it's a tough balancing act."

If this balancing act is mastered, Samuels says, permadeath offers a lot as a mechanic. "I still believe that its biggest benefit in our games is that death is the ultimate consequence of a series of decisions, [which] makes the experience much more tense for the player... Losing characters from the player's ensemble cast clearly demonstrates the breadth of the branching in our games, and helps to give each player's experience a uniqueness. It's also treated by many as a 'score', and people replay

many times to get a perfect outcome where all characters survive, or to reach a conclusion where their favourite characters didn't perish in some horrible way."

## NORTH BOUND

Permadeath can generate an emotion or help to drive forward a storyline. Public perception can, however, mean that permadeath comes with a bit of baggage. The mere mention of permadeath can bring some players out in hives, with images of incredible difficulty, insurmountable odds, and a hell of a lot of lost progress springing to mind.

For Richard Meredith, programmer and designer at Plausible Concept, however, permadeath isn't about sheer difficulty – rather, it's about creating a kind of experience that ensures players engage with the systems surrounding them.

A minimalistic, real-time strategy roguelike, Plausible Concept's *Bad North* sees you defending islands from invading Vikings, doing your best to manoeuvre your soldiers, and establish your defences to ensure the interlopers can't claim your land. "Normally in *Bad North*, you're positioning troops and basically setting up a defensive line that most of the time holds pretty well," Meredith says. "All of a sudden, things can turn on a knife-edge and can start going very, very badly for you."

As you might expect, it can be a stressful experience to see your plans fall to pieces in a matter of moments thanks to an unexpectedly tough invasion force. "That panic and stress in very short bursts, against the background of it being mostly quite calm and relaxing, is a really strong thing," Meredith says.

As you travel from island to island the potential of losing a commander – and as a result, the ➔

## PERMÁMON

Some players choose to go above and beyond when setting themselves a permadeath challenge in their favourite, non-permadeath series. A Nuzlocke run in *Pokémon* – popularised by the *Pokémon: Hard-Mode* series of comics written by Nick Franco – involves a set of self-imposed rules to make your quest to become a *Pokémon* Master more challenging. Fancy giving it a go? The rules are that you can only capture the first *Pokémon* you encounter in each new area, and if any of your *Pokémon* faint, you must release them into the wild to never be seen again.



▲ Teddy Lee is part-time game developer, full-time fabulous.

♥ It's amazing how a single line of code can completely change the way you need to play *Subnautica*.

```
if (GameModeUtils.IsPermadeath())
{
    // Delete the save game
    SaveLoadManager.main.ClearSlotAsync(Utils.GetSavegameDir());

    EndGame();
    return;
}
```

### PERMAROT

When is permadeath not permadeath? In *Hellblade: Senua's Sacrifice*, the player is told early on that dying too many times will lead to the 'rot' spreading in Senua's body, which will eventually lead to a game over state. This is no more than a bluff, though: permadeath never arises, no matter how many times you lose your life. This unsubstantiated threat pairs well with the story's underlying themes, and also reflects Senua's mental state as she combats the unreliable narration that goes on inside her head.



▲ Justin Ma, co-creator of *FTL: Faster Than Light*.

► In *Bad North*, natural choke points and elevation that comes with each island provides the setting for each last stand.

units they are in charge of – is a constant, ever-increasing problem. “Permadeath introduces some additional stakes, and makes it really hit home that it’s important to solve this problem rather than just going back to a previous save [and destroying any] real stakes,” Meredith says.

This use of permadeath as a tool to encourage players to engage with a problem at hand – and to learn the mechanics of the game – is a tactic shared by Lee. “I’m a big fan of game systems where the player needs to learn the rules,” he says. “It’s why almost all our games have some kind of reaction-based component to the combat, since just giving enemies a touch of ‘random number generator’ in how they react to the player means you can’t memorise patterns.”

After some discussion with Lee, it became apparent that permadeath in *Rogue Legacy* was considered secondary to the real goal of encouraging improvisation – and ensuring that dying felt fun. As each death brings with it the opportunity to take control of a new character, with different traits from the last, it means

**“I'M A BIG FAN OF GAME SYSTEMS WHERE A PLAYER NEEDS TO LEARN THE RULES”**

each generational playthrough feels different to the player, and they remain invested in the action. And while there’s less use of randomised elements in *Bad North*, the sentiment is the same. “The instances where something happens

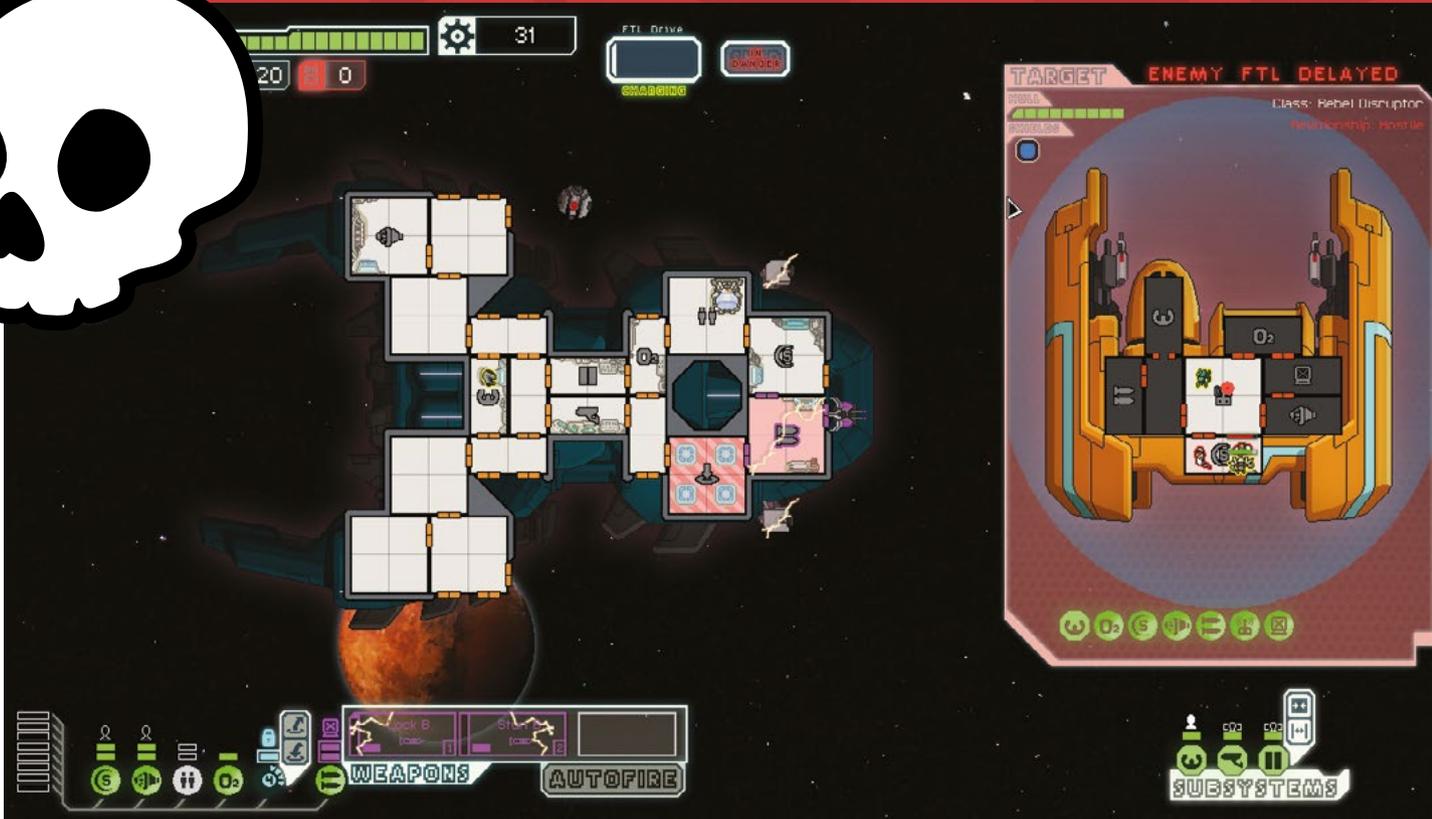
like [the unexpected, overwhelming invasion] becomes a defining moment of the playthrough that you had,” Meredith explains.

“You remember the moments when someone died, especially if that involves you panicking to still win the island, or you panicked to get off the island and that all came together.”

### REAPERS CREEPERS

Some games are built around permadeath, while others adopt it in an attempt to galvanise other previously made mechanics in a game, but occasionally there’s a title where permadeath comes about by chance. In *Subnautica*, an open-world survival game, the player can choose permadeath through its ‘Hardcore’ mode. Charlie Cleveland, CEO and design director at Unknown Worlds Entertainment, explains how this implementation of permadeath came about. “One of the big early influences in *Subnautica* –





though you probably can't see it – is *Spelunky*. I was playing it a lot as we started to make *Subnautica*. Early on, we thought [of having] a lot more roguelike elements in the game: procedural levels, a focus on replayability, low-level creature interactions, precise tool usage, puzzle-like navigation, and permadeath.”

After spending a long time with these elements and struggling to make them work in an underwater setting, Cleveland came to a realisation: “In *Subnautica*, you’re essentially flying. So, we could never constrain the player easily with gravity or walls – our environments worked best when they were wide open, especially as we wanted to accommodate vehicles. We also didn’t have dense enough creatures to create emergent ‘reactions’. So we ended up cutting everything that wasn’t working, and we were left with simply the permadeath.”

With Hardcore mode being exactly that – a mode for those seeking a tougher challenge – it’s seen by Cleveland as an extra way to experience the game, and not necessarily the ‘true’ one. Approximately six-to-eight percent of those who play *Subnautica* do so with permadeath on – far smaller than the 59.9 percent who do so on



the standard ‘Survival’ mode. In this instance, permadeath came about near-enough by accident, and is regarded as an added bonus for those who wish to take their oxygen count and nutritional needs very seriously.

Developers use permadeath for many reasons. But by stepping away from the safety net provided by auto-saves and check-points, players can open themselves up to genuinely thrilling moments. From the heartbreak of losing a beloved character to the exhilaration of narrowly surviving a space battle, permadeath brings something rare to video games: a sense of genuine fear, a risk of loss, and real consequences for your actions. 🗣

- ▲ Try naming your *FTL* crew members after your loved ones. It makes decisions much harder when you’re deciding if you’d rather sacrifice your wife or your best friend.
- ◀ Knowing your actions will decide whether your favourite characters survive *Man of Medan* is a very powerful thing.



▲ Richard Meredith, programmer and designer on *Bad North*.

# You Gotta Have Faith



**LOTTIE BEVAN**

Lottie's a producer and co-founder of award-winning narrative microstudio Weather Factory, best known for *Cultist Simulator*. She's one of the youngest female founders in the industry, a BAFTA Breakthrough Brit, and founder of Coven Club, a women in games support network. She produces, markets, bizzes, and arts, and previously produced *Fallen London*, *Zubmariner*, and *Sunless Skies* at Failbetter Games.

**M**any Wireframes ago, I wrote about the upcoming launch of Steam China and what it might mean for developers. Now it's live! So let's compare predictions with reality.

In short, we all got to role-play William Gibson: most of what we thought would happen did. Steam China hosts 53 games (0.2% of Steam's international offering), all of which have gone through the official Chinese review process. It hasn't – yet – cut off any localised games in the international store from Chinese players. But we didn't expect Steam China to launch without forums, workshops, or other Community Hub options, and I still think we'll see access problems to Chinese audiences later down the line.

But what does this mean for indie developers? It's not something we need to worry about now, but it's a future we should plan for. My studio translated *Cultist Simulator* into simplified Chinese and released it asynchronously on mobile and PC in 2019. *Cultist* was never officially available to Chinese Android users (because the Google Play Store is

blocked) and the iOS version was removed from the Chinese App Store this year (along with 30,000 other games that weren't officially approved). But China still made us around £272,000 profit in two years. It's such a large audience that even a tiny slice of the pie is worth having.

China's also a market hungry for variety. Chinese players like *Cultist* partly because they don't see games like it. We haven't a snowball's hope in hell of passing China's content regulations: among

**“It's such a large audience that even a tiny slice of the pie is worth having”**

many other problems, games can't portray 'the supernatural, such as cults', so Chinese gamers don't see many games specifically about the

supernatural, such as cults. These limitations will likely work in many indie developers' favour, meaning we have a large, keen audience who want to buy our games – even though it's difficult to reach them.

Steam China, I think, is a good thing for indies who localise. We might not get on the official Chinese Steam store, but there are several features which link the international and Chinese versions. Chinese games bought from Steam China appear in international Steam's library, for example, so there's a clearer route than ever for interested Chinese gamers to Steam's international offerings. And right now, even though Steam's international version isn't officially available in China, there are huge numbers of Chinese players buying games through it anyway. We saw a nearly 400% increase in Chinese players since we localised – it's a grey area, but the gains are worth the attempt.

To paraphrase a famous Confucius proverb, it doesn't matter how slow you go so long as you don't stop. Chinese gamers are hard to reach, and they may become particularly unavailable for a period of years, should Steam change how they currently operate alongside Steam China. But there's a lot to gain by thinking about China now, and, I suspect, a great deal more to gain in the future. Keep the faith! Just don't, er, make a whole game about it. 🙏



▲ *Cultist Simulator*: unlikely to pass China's content regulations any time soon, but still has a cult following among Chinese gamers.

# MAKE A GAME FOR NINTENDO SWITCH!

Code a retro-inspired game and win from prizes worth over £1000

Get your  
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## PRIZES INCLUDE:

Retro Fusion books  
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Are you a budding game developer? Do you have a game concept you're itching to see on the Nintendo Switch? If so, here's the competition for you. Wireframe magazine is teaming up with FUZE Technologies to give our readers the chance to make a game – and have it appear on the Nintendo Switch via the FUZE platform.

Don't own FUZE4 Nintendo Switch? No problem! FUZE is giving away **200 free copies**, worth over £2500, of its FUZE4 coding platform to Wireframe readers. Simply head to [fuze.co.uk/wireframe](https://fuze.co.uk/wireframe) and follow the instructions to claim your free download code.

With FUZE4 Nintendo Switch installed, you can start making your game. It can be any genre or style you like, as long as it's retro-themed, coded using FUZE, and submitted via the platform on Nintendo Switch by the closing date: Monday 19 April.

There are a few ground rules below in the small print, but you can also find full entry details at [fuze.co.uk/wireframe](https://fuze.co.uk/wireframe).

Good luck, and happy coding!

## Enter at [fuze.co.uk/wireframe](https://fuze.co.uk/wireframe)

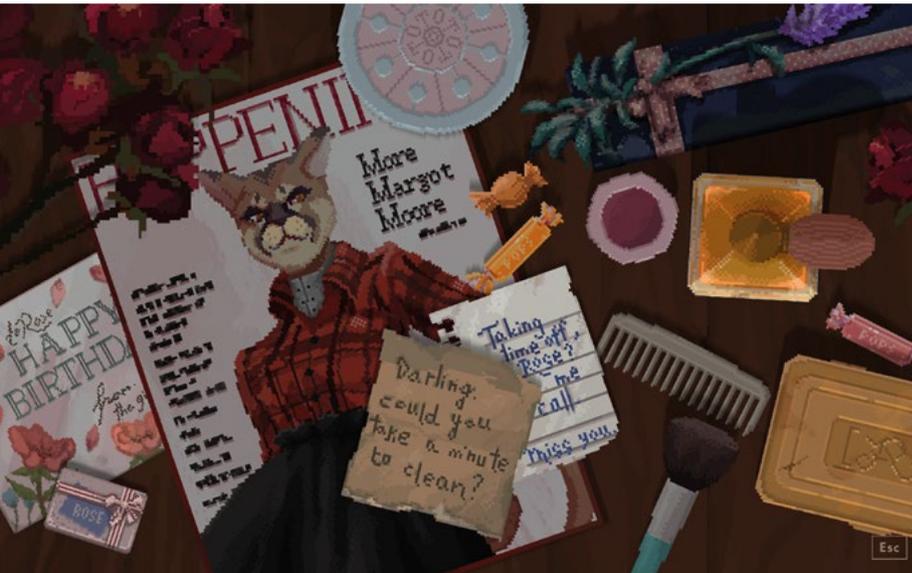
Free copies of FUZE4 Nintendo Switch are strictly limited to one per person and will be issued on a first-come-first-served basis.

The judge's decision is final. Prizes are non-negotiable and no cash alternatives will be offered. Winners will be contacted by email to arrange delivery. Winners failing to respond within 60 days of the initial email are likely to have their prize revoked.

Winners will be notified by email within 30 days after the competition closes on Monday 19 April. By entering the competition, the winner consents to any publicity generated from the competition, in print and online. Participants agree to receive occasional newsletters from FUZE Technologies Ltd and Wireframe magazine. We don't like spam: participants' details will remain strictly confidential and will not be shared with extended third parties. Entrants of any age are welcome, but all entrants under the age of 13 must contact us via a parent or guardian.

This will be a publicised competition, so it is critical that third-party copyright is respected. Any entries containing images and/or audio from copyrighted sources are likely to be rejected or advised to be resubmitted with contentious materials removed. Additionally, entries should refrain from excessive gore or horror, explicit language, or sexually explicit subject matter.

Employees of, and those closely affiliated with, FUZE Technologies Ltd or Raspberry Pi Trading are prohibited from entry.

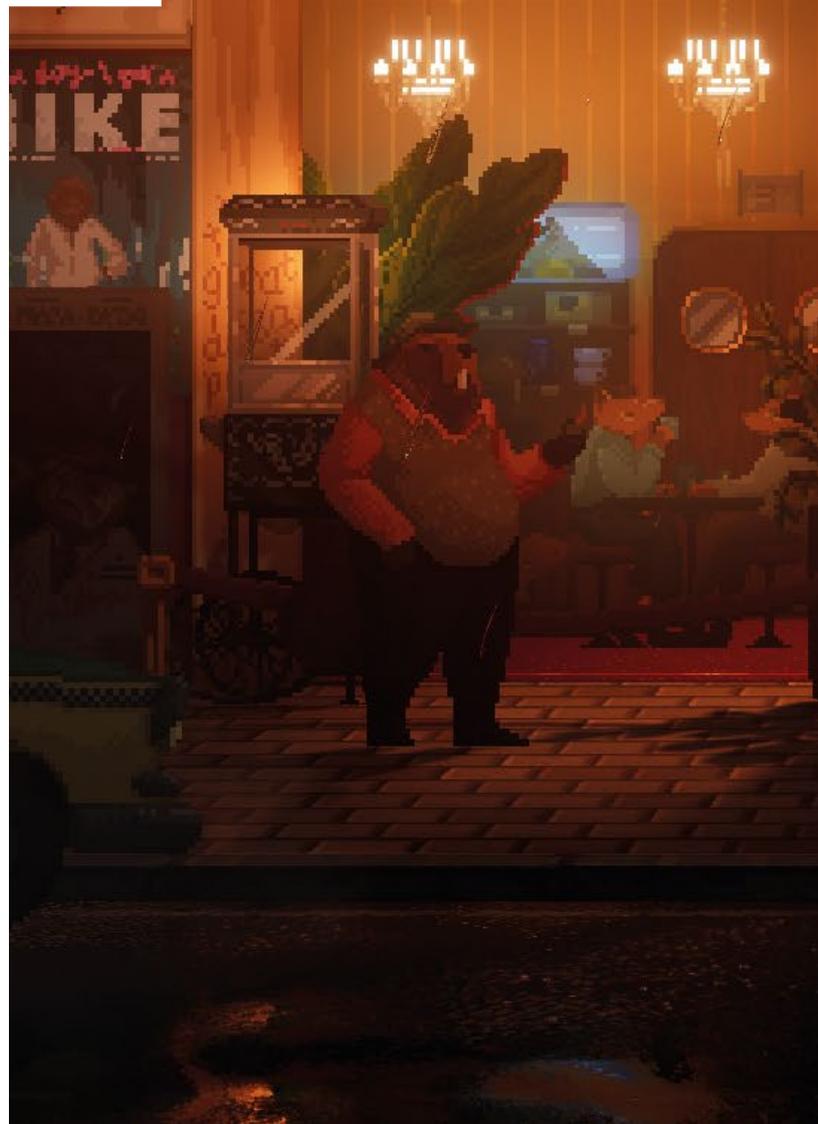


## Backbone

READ  
MORE  
turn to  
page 14

With a script that runs to around 150,000 words, according to narrative designer Aleksandra Korabelnikova, dialogue is a big part of *Backbone*, EggNut's upcoming noir detective adventure. But not far behind are those gorgeous visuals, which use pixel art and 3D models to create a dystopian Vancouver populated by talking animals. "After the shooting script was complete, we built the levels in Unreal Engine, and played through them with placeholder dialogue – just testing how the story plays," says Korabelnikova. "All the dialogue is then written inside the engine [using] a plug-in called Not Yet Dialogue, which allows for writing right away."

As Korabelnikova says in our preview on page 14, *Backbone* looks like a classic American noir thriller, but it's rooted in the studio's "experience growing up in Russia and a dystopian state". So how did it feel to see such a personal script come to life on the screen? "So surreal," Korabelnikova says, "because you can't know whether you made a good thing until you've finished... I have to have all of this in my head. I'm not the only person working on it – there are 17 people, including co-writer Danny [Wadeson], who wrote the majority of the text in the game. And there's art director, Toma – she's leading a team of seven artists. She's the one who's making decisions about atmosphere and how a scene's going to feel visually – what kind of storytelling we're putting in the environments."





GAME  
Backbone

STUDIO  
EggNut

RELEASE  
Summer 2021

WEBSITE  
eggnut.net

# MASOCORE

THE MAKING OF THE

# NIOH

SERIES

To mark Nioh 2 – The Complete Edition’s arrival on next-gen, we speak to series director Fumihiko Yasuda about Team NINJA’s path to creating a Soulslike hit

WRITTEN BY  
AARON POTTER



**T**he *Nioh* series as we know it today was never meant to exist. Before it became a fast-paced spin on the 'masocore' sub-genre of hardcore action-RPGs in the vein of the *Dark Souls* series, it was originally announced by KOEI in 2005 as a PlayStation 3 launch title. The project was developed for the better part of four years before the tough decision was made to scrap it – an unfortunate casualty of the Japanese publisher's merger with former rival, TECMO.

"There was quite a big gap between then and 2013 when we first started picking up development and creating it from there," jokes Fumihiko Yasuda, one of the game's eventual co-directors. That 'we' he's talking about is none other than Team NINJA, revered developer of the *Ninja Gaiden* series and a team known for creating challenging action-adventure games that reward patience and precision. The studio was, in fact, brought in to aid on a version of the game ignited once KOEI TECMO was formed: a more traditional-feeling action game with RPG elements and steeped in Japanese culture.

It wasn't until later, after much fan outcry, that Team NINJA was officially given the go-ahead to lead development on a new iteration. Suddenly, the studio felt inspired to make *Nioh* a reality, and a game that lived up to people's high expectations. "They'd been waiting for a long time since 2005 when it was initially announced,"

Yasuda reflects. "So there definitely was an aspect of that in terms of seeing that this is really something that fans were anticipating."

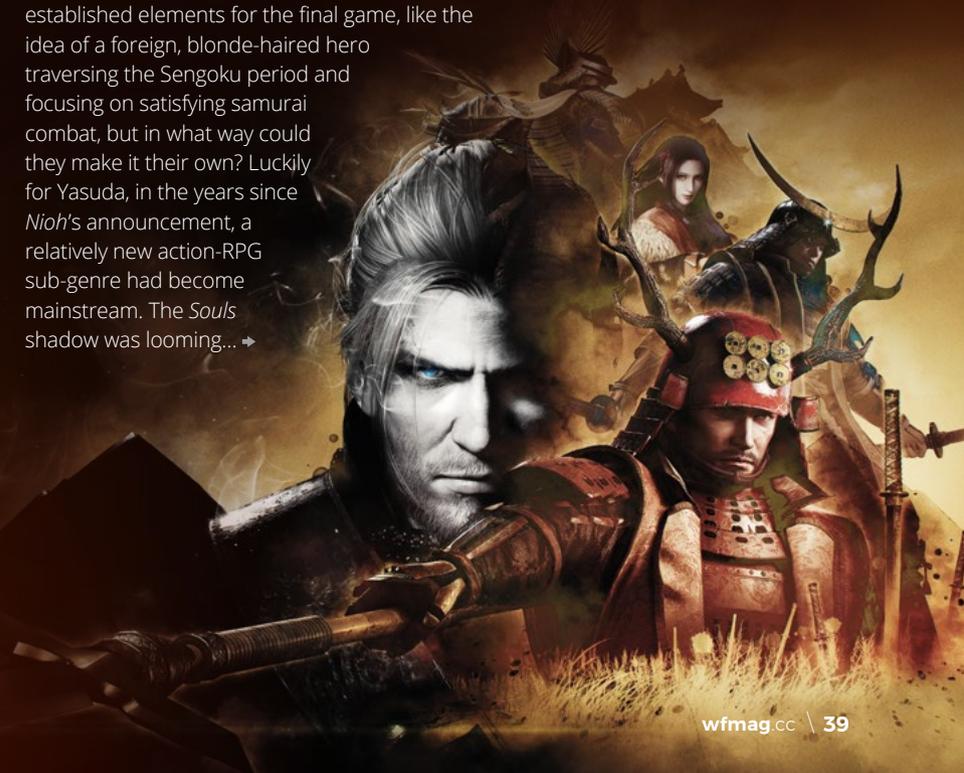
## LIKE SOULS

Taking the existing pieces of *Nioh* and transforming it into an action-RPG proved to be quite the challenge at first, though. Yasuda and his team knew they wanted to retain some established elements for the final game, like the idea of a foreign, blonde-haired hero traversing the Sengoku period and focusing on satisfying samurai combat, but in what way could they make it their own? Luckily for Yasuda, in the years since *Nioh*'s announcement, a relatively new action-RPG sub-genre had become mainstream. The *Souls* shadow was looming... ▶



▲ Fumihiko Yasuda was the creative director on both *Nioh* games.

▼ *Nioh* went through multiple design changes during development, but a constant was the idea of a blonde protagonist fighting in historical Japan.



## JOURNEY TO THE WEST

The *Nioh* franchise's success is indicative of a wider industry boom, one where games that celebrate Japanese culture – *Yakuza*, *Sekiro*, and *Ghost of Tsushima* to name a few – have grown more popular in the West. Where JRPGs were once considered niche, with minor exceptions like *Final Fantasy* breaking into the mainstream, the stage is now set for more Japanese-influenced and created games to gain a global foothold. "Overall, I'm very happy to see people from all around the world appreciating Japanese culture through these games," Yasuda says. "That's something I think is really great."

▼ The original *Nioh* features a range of boss-level Yōkai primed to test your skill with a blade.

"We took a look at the landscape of the video game industry at the time and saw that the *Souls* series was really doing well," Yasuda explains. "There was definitely some inspiration there, which we then used to create our own take and spin – the original Team NINJA spin on the mascore genre." Team NINJA was careful to use the FromSoftware template as a jumping-off point, infusing the deliberate third-person combat that certain players had developed a taste for with a much quicker pace. "Me and the rest of the dev team realised what makes a Team NINJA game stand out from another studio's titles," continues Yasuda. "And it's really that great core action gameplay that has a lot of substance to it, that is fun for players to engage in. So adding that kind of intensive action aspect was something we want to take into a mascore title."

### SETTING SCENES

The first *Nioh* was set in the Sengoku period of the 1600s – albeit laced with dark fantasy moments. So what made the Sengoku era perfect for *Nioh* over other potential settings? "Because it's a really dark, tough, and brutal period of history, and that kind of goes along with both the genre and the vibe of *Nioh*," Yasuda says. It also allowed Team NINJA to mix the game's supernatural elements with a sense of groundedness. "It's a game steeped in fantasy, but it has a lot of individuals that come from history," he explains. "We worked hard to ensure that the characters from history are close to their actual representations, but that you have those fantasy aspects like the Guardian spirits in the background, adding that extra flair."

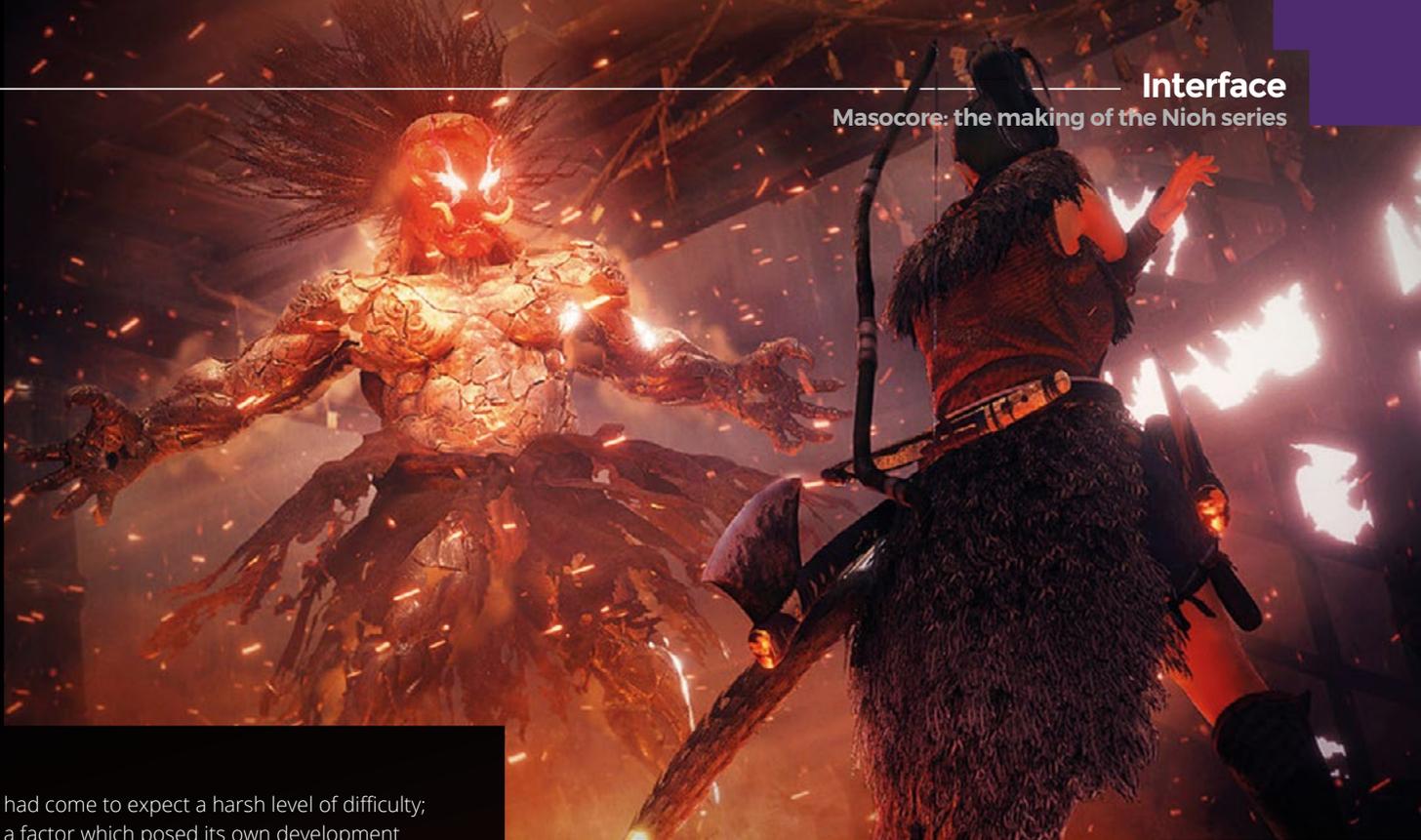


Yasuda also cites Yōkai, the game's spirit-like enemies, as a key area in which the game's fantasy and reality elements collide. The ways Yōkai factor into *Nioh* also changed significantly between the release of the first and second games. Before that, though, Team NINJA had to be sure the player's actions felt responsive and could allow for a range of different combat options. It wasn't enough to ape the heavyweight and guard-based gameplay of the *Souls* games. The stance system – in which main character William Adams can attack low, medium, or high – proved to be enough of a differentiating factor. "There are three phases you can think about in terms of the action," Yasuda says. "When you're up close with the enemies, that's when you're using your weapons and attacks. Then, if you're at a farther distance away from your enemy you can use magic. That's kind of your long-range. But [we] really wanted something that would fit right in the middle, and that's where the stance system comes in. Something to do in that interim period so that all three of those phases have something that the player is doing at all times, to really make this intense and packed experience."

Stances enabled players to think strategically during combat, while also remaining true to the game's cultural roots. "The stance system really allows you to improve on other strategies in the game," says Yasuda. "For example, if you want to improve on your ability to dodge or evade attacks, or improve your ability to deal out damage, those elements really come in via the stance system. We wanted to also add in aspects of Japanese culture, such as kendo, and that's important to Japan historically. There's a direct connection between things you learn in kendo and the stances you can use in the game."

In the years since FromSoftware near-single-handedly kickstarted a new sub-genre, players





had come to expect a harsh level of difficulty; a factor which posed its own development challenges for Team NINJA. How could the studio gauge whether *Nioh* posed a fair challenge or was just broken? Simply put, Yasuda and his team had played *Nioh* for so long that it became tricky to tell what was and wasn't difficult.

Gaining player feedback via pre-release betas and demos, then, was key. This public response allowed the studio to, as Yasuda puts it, "remove all of the fluff, and aspects of the game that aren't related to the difficulty". And while Team NINJA was limited in how many adjustments it could make by the game's release, feedback deeply informed the sequel two years later.

*Nioh 2* would make several improvements over its predecessor, most notably with the switch to a custom character creation system. William Adams was out, which Yasuda says wasn't an easy decision. "We really thought about it for a while, and went back and forth on the decision. The reason we chose it was to allow players to have that freedom to tell their own story; to have their own character that represents them and what they want to take on through the story."

Despite this change, Yasuda (now the sole game director on the sequel) wanted to ensure that *Nioh's* action remained as visceral and responsive as before. "I feel like *Nioh* and *Nioh 2* both have that," he says, "regardless of if you're playing as William or your own original character – you're still going to have that core action experience."

Yōkai Shift was another change in *Nioh 2*. It's a mechanic that helped *Nioh* stand apart from its

*Souls*like brethren by letting players take on the abilities of fallen enemies and use them in battle. This was a direct result of feedback from *Nioh 2's* beta phase, where players commented that not much had changed from the original *Nioh* in terms of combat: Team NINJA took this critique to heart. Luckily, the distance between *Nioh 2's* beta and the final game gave the studio plenty of time to add more depth to the Yōkai-related actions.

"The reason we wanted to add in these Yōkai abilities is, when you're a human character fighting against Yōkai and these more powerful enemies, the battle can start getting drawn out a bit," explains Yasuda.

"We wanted to give the player those Yōkai abilities as well, letting them actually go toe to toe with some of these

really fearsome Yōkai enemies. This also gave us another opportunity to improve the balance of the game, so players wouldn't have battles that dragged on, and you'd have a better wealth of abilities that empower the player."

Though risky, the changes implemented in *Nioh 2* saw the game review just as highly as the first title. On its release in March 2020, Team NINJA not only achieved its goal of reviving the *Nioh* brand, but succeeded in creating its own spin on the *Souls* formula. Yasuda hints that the series is on hiatus for now, yet sees the recent, souped-up *Nioh – The Complete Edition's* release on PS5 as a fitting place to pause. "I feel like the player is going to get a much fuller experience from playing on the newest hardware," he says. 🎮

▲ Team NINJA went bigger and better for most of the bosses featured in *Nioh 2*, balancing the difficulty by letting you take their powers upon defeat.

**"It's a game steeped in fantasy, but it has a lot of individuals from history"**

▼ You're constantly looting better-powered items and equipment in the *Nioh* games, with most providing special effects and stat buffs.

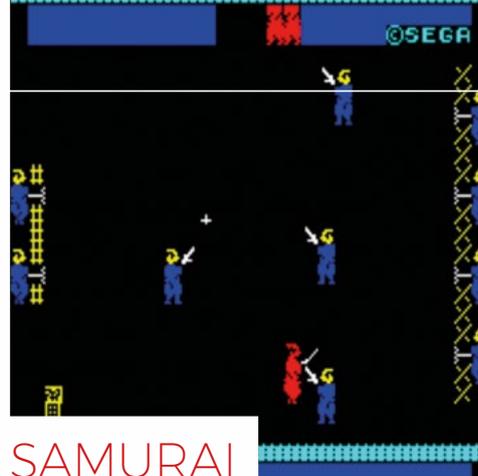


## Interface

Ways of the samurai

# WAYS OF THE SAMURAI

It might be a Team NINJA game, but the original Nioh follows a samurai – what better reason to take a look back at the evolution of the samurai in video games? No better reason...



## SAMURAI

SEGA, 1980

Sega's 1980 arcade game is the first we could find with the name *Samurai* that actually tried to be a bit samurai-flavoured, rather than an Othello clone. You know what you're getting. Fun fare, it pitted players as the titular sword-wielder facing off against waves of enemies – most dumb and easy, then every so often a rival samurai with equal two-frame sword-swinging animation to bring down the fury of the gods on your head. Well, as much fury as can be mustered with a limited colour palette, at least.

## FIRST SAMURAI

VIVID IMAGE, 1991

Coming from devs who worked on the *Last Ninja* series, it might have been expected *First Samurai* would be a riff on System 3's game. Instead, developer Vivid Image created an action platformer with swagger behind it; all smashing pots, ghostly apparitions, and cries of 'Hallelujah!' It's samurai through a Western lens, of course, but backed up by visuals that took full advantage of the Amiga's ability to pump out gorgeous parallax scrolling, this was always going to be a winner.



## SAMURAI SHODOWN

SNK, 1993

One-on-one fighting games weren't quite in a rut by 1993, but SNK still thought it time to try something different: adding in weapons as a key factor. Thus *Samurai Shodown* – or *Samurai Spirits* – was born. Immediately making an impact, the fast-paced fighting and beautiful character design helped *Shodown* stand out from a crowded brawler market. Receiving ports to everything under the sun, it never quite reached *Street Fighter II* levels of ubiquity, but there are few players who were around in the 1990s that didn't play the game at some point or another.

## BRAVE FENCER MUSASHI

SQUARE, 1998

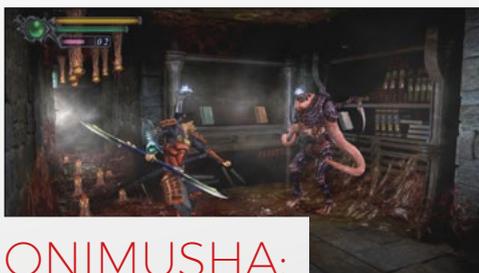
Plenty of samurai-themed titles offered a less combat-heavy approach; *Brave Fencer Musashi* being a solid example. Square's action-RPG pivoted away from *Final Fantasy*, though ironically, Musashi's solid performance in the US market was largely down to it being bundled with a *Final Fantasy VIII* demo. All the same, the mix of light role-playing, exploration, and cheeky characters helped the little *Brave* one build a solid reputation for himself.



## SKULLS OF THE SHOGUN

17-BIT, 2013

Mixing samurai with the undead has already been on this very list, but it's in throwing a hearty dollop of turn-based combat on top of things where *Skulls of the Shogun* really shines. It's the shallower-but-more-accessible compatriot to Creative Assembly's game, as well as the one of the two with a significantly better sense of humour. Released and re-released on countless platforms, you've probably got a copy of *Skulls of the Shogun* stashed away somewhere. Have a play. Go on, it's fun.



## ONIMUSHA: WARLORDS

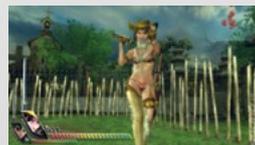
CAPCOM, 2001

Originally intended as a spin-off to *Resident Evil*, *Onimusha* soon morphed into its own thing – though with clear nods to its precursor. Following samurai warrior Samanosuke Akechi as he battles supernatural forces, *Onimusha* mixed traditional sword-based combat with magic and the odd era-specific firearm for good measure, making it an oddly accurate portrayal of its era. Apart from the whole flaming demons thing, of course.

## TOTAL WAR: SHOGUN 2

CREATIVE ASSEMBLY, 2011

Strategic samurai games go all the way back to *Nobunaga no Yabō/Nobunaga's Ambition*. But it's in Creative Assembly's tale of grand warfare where everything came together nigh-on perfectly. A narrower focus than previous *Total War* titles helped massively, making for a more absorbing campaign backed up by that strategic warfare we all know and love.



## ONECHANBARA: BIKINI SAMURAI SQUAD

TAMSOFT, 2006

Samurai aren't always presented as noble, stoic warriors – and it's the likes of *Onechanbara* that very much prove the point. A garbage game starring a group of women who (hardly) sport underwear while taking on legions of the undead, it is absolutely something to never ever bother playing.



## NIOH

TEAM NINJA, 2017

It feels a bit too much like hammering on the same drum endlessly to feature *Nioh* in this list, what with the previous pages going into far more detail of the series. But hey, it'd be an oversight to ignore Team NINJA's action-role-playing hack-and-slash-'em-up. So consider it: not ignored.

## SEKIRO: SHADOWS DIE TWICE

FROMSOFTWARE, 2019

Hidetaka Miyazaki's directorial return was triumphant – *Sekiro* mixed samurai mythology with *Souls*-like mechanics in an assured, confident fashion. Action and exploration melded seamlessly with thrilling stealth and, when spotted, the deep combat mechanics one would expect of FromSoftware. A focus on posture and balance shunted things away from sheer brute-force-and-blocking routes during battles, and this more cerebral take on fights helped to make *Sekiro* yet another feather in the cap of Miyazaki.



# Toolbox

The art, theory, and production of video games

**46. Design Principles**

Atari's Howard Scott Warshaw on unlocking creativity

**48. CityCraft**

Dave Gilbert chats about using New York in his games

**50. AI Pathfinding**

An introduction to the algorithms behind video game AI

**56. Narrative Design**

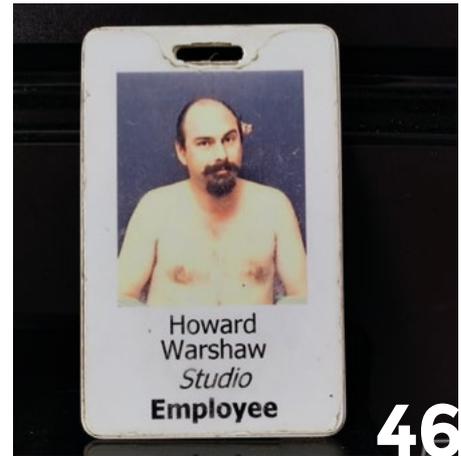
Interrogating Paradise Killer's sublime courtroom drama

**58. How not to code**

A guide to best practices – and programming pitfalls to avoid

**64. Source Code**

Use a swinging rope in our homage to the classic Pitfall!

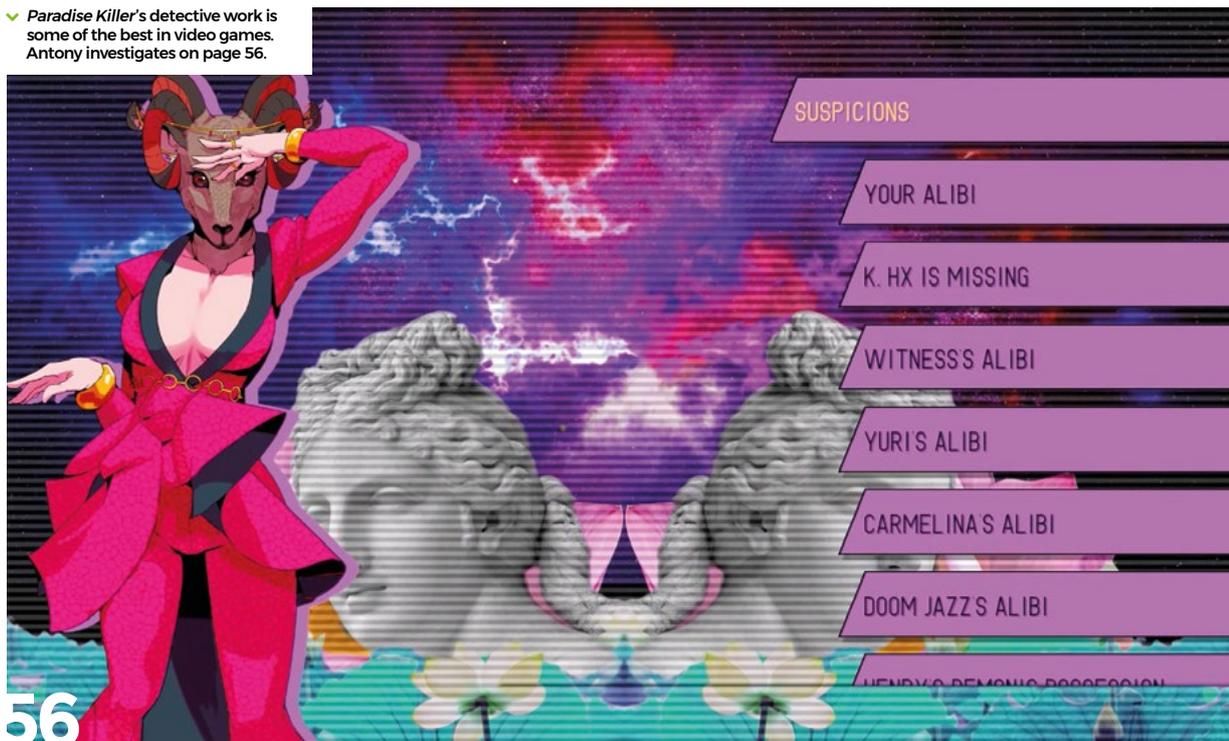


▲ Howard Scott Warshaw on creativity – and posing for ID badge pics. See page 46.



▲ Design legend Dave Gilbert talks about his use of New York City in his point-and-click games, including *Unavowed*. Read more on page 48.

✓ *Paradise Killer's* detective work is some of the best in video games. Antony investigates on page 56.



56



50

◀ Find out about the inner workings of the pathfinding AI that drives your favourite games on page 50.

✓ Recreate the rope-swinging mechanic from one of the earliest platform games with our *Pitfall!* homage on page 64.



64

# The principles of game design

If you have the right mindset, every waking moment offers a chance to be creative, Howard writes – even posing for an ID photo...



**AUTHOR**  
**HOWARD SCOTT WARSHAW**

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. His new book, *Once Upon Atari: How I Made History by Killing an Industry*, is out now. [onceuponatari.com](http://onceuponatari.com)

**V**ideo game development is all about creativity, but where does creativity come from? Where is creativity most needed? Each area (programming, art, sound, game design) has both technical and creative demands. But when does creativity occur? How much 'creative control' do we have? We don't always know when inspiration will strike. Are there restrictions? Do we use our creativity or does our creativity use us? If we can't really schedule it, how can we accommodate it? Let's create some creative awareness. It might seem a tad frivolous to relegate something *this* essential to an unplanned afterthought. But think again. It seems to me there are infinite opportunities to apply creativity at virtually any moment of every day. I propose that we're usually too distracted by our stuff (plans, needs, and expectations) to spare any brain cycles to attempt creation. This is how most of us spend our lives. Then we get called into a brainstorming session and expect to turn on the creative juice for 47 minutes before shuffling off to the next obligation.

The world is a cornucopia of insights and inspiring stimuli. Unfortunately, we tend to sleepwalk past most of them. I'd like to share an example of taking a creative opportunity that had

nothing to do with my job description as a video game maker. When I went to work at The 3DO Company, I was coming in from a decade-long hiatus from game development. On re-entry, I wanted to lead with my creativity, not drag it behind me kicking and screaming. One of the first things I had to do at my new job was pose for my badge picture. For most, this is the epitome of a necessary task to be dispensed with before beginning the job proper. That's not how I saw it...

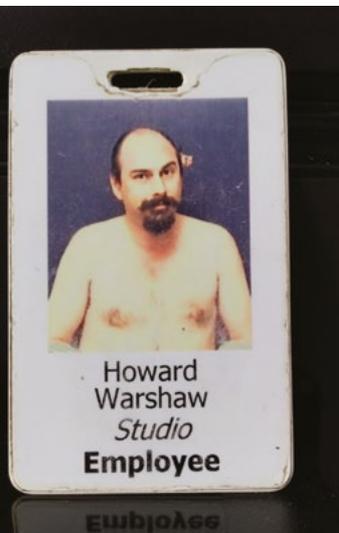
To me, the badge is something I'll brandish daily for years. It's not just validation of my identity; it's a totem to it. The badge pic can be a dreaded ghost of bad hair days past, or it can be a statement that looks forward and declares to

the world: 'That's right, *this* is who you're dealing with, so get used to it!' Naturally, I chose the latter approach.

But what to say? That's the question. As I pondered this, I considered the joy I felt in returning to video games (which was substantial). And what is at the essence of this joy? The spirit of illusion. One of the things I love about video games is how a bunch of pixels on the screen flashing on and off in front of a player's face gets interpreted as a live interactive environment. Of course, NPCs aren't sentient entities with intention and nuance. They're merely the product of algorithms.

**“One of the first things I had to do was pose for my badge picture”**

✓ Getting creative: Howard Scott Warshaw's eyeball-searing ID badge.





◀ The arcade dogfight-'em-up *WarJet* was one of several titles Howard co-directed at The 3DO Company.

However, the player brings the gestalt of human experience to the variously shaped and coloured sprites. We manufacture meaning and value in the display, just like our brain turns a series of still images into motion and drama in a movie. This is the process of projection (all puns intended). Through the magic of anthropomorphism, we take some of these dancing light shows and ascribe personality and intent to them. We bring them to life and share a journey with them while we play. The experience is real, yet we can pause it, put it in a save file and preserve the entire reality of that space indefinitely. On our return from wherever we went, we blow the breath of life back into the save file, reviving our game experience from its hibernation and on we go. Ah, if only this were possible in real life.

Anyway, the point is that video game experiences are an illusion. We think we see what's happening, but all we're really doing is projecting a lot of our own auxiliary desires and expectations onto a screen with a lot of coloured dots that are merely flashing on and off. The illusion is that the meaning and action is in the game, but the game is just the flashing dots. The experience of drama, conflict, exhilaration and satisfaction exists exclusively in our mind.

The big question is: what does it take to invite a person to make more of something than it is? How simple can something be and still create a much larger impression in the mind of the player or viewer or user? And what the hell am I talking about – isn't this supposed to be about my badge ID pic?

Yes, it is indeed about the pic. My point being that this picture (now laminated for eternity) is

another in a series of opportunities to shine creatively. I can just go over and stand on the 'X' and let the flash do the work. Or, I can create an evocative scenario that will breathe life into my badge, inspiring all who gaze on it. For me, the choice is an easy one. Let's make this a memorable moment that lasts forever (or at least until the company dies). But how can I do this? What would transform my simple little ID pic into a powerfully evocative talisman to knock people out of their slumber and invite them to think bigger about everything around them?

It turns out it was as simple as addition and subtraction: I added a small artificial flower and subtracted my shirt. In a *flash*, I had my answer. Just as video games suggest things to help your mind fill in the blanks, so I did the same thing with my video game ID badge. I wonder how often that was appreciated?

Everything you see and do is an opportunity to apply your creativity. Things you discover in one moment are then available to feed all the others. Another question is, how well can you maintain a creative appetite? 🍷

## The full picture

It's a funny thing about the human mind, it prefers completeness. Nature may abhor a vacuum, but the human brain hates a partial picture. Show me a piece of an image and I will imagine the rest automatically. After all, the root of the word imagine is image! And when that root takes hold, it sprouts all kinds of interesting foliage. Take my badge photo, for instance. There was nothing indecent going on in the room when that picture was taken. Is that how it seems when you fill in the rest of the image?

✓ Founded by Trip Hawkins in 1991, The 3DO Company was most famous for its eponymous, ill-fated console (that'd be the Panasonic 3DO).



# Dave Gilbert's New York City

The designer and point-and-click maestro chats about the supernatural take on New York that appears in his games



**AUTHOR**  
**KONSTANTINOS DIMOPOULOS**

Konstantinos Dimopoulos is a game urbanist and designer combining a PhD in urban planning with video games. He is the author of the *Virtual Cities* atlas, designs game cities, and consults on their creation. [game-cities.com](http://game-cities.com)

**W**

adjet Eye Games have been flying the adventure flag for over 15 years, and constantly innovating in a genre that is being proclaimed dead every

other decade. Interestingly, both the studio's successful *Blackwell* saga of five award-winning adventure games, and the ground-breaking, IGF-nominated *Unavowed* are all set in a consistently spooky version of New York City. We caught up with Dave Gilbert, Wadjet Eye's founder and legendary game designer, to find out why.

**Why set your stories in NYC?**

**Dave Gilbert:** You write what you know! I've always felt that in order to instill a feeling or mood, I need to experience that mood or feeling myself. Since I'm familiar with New York, and I love being here, it does a lot of the heavy lifting in enabling me to make the audience feel the same. It comes very naturally.

**Did your choice of setting serve the needs of supernatural stories?**

Not necessarily. Urban stories speak to me, and so when I decided I wanted to write stories, it was the obvious setting to go with. If the setting served any needs, they were my own.

**How different is your New York from actual New York?**

New York changes all the time! A chunk of the locations from the early *Blackwell* games are either gone or are now unrecognisable. But the games definitely represent *my* New York. Especially the early games. Most of the locations were middle-class places like apartments, offices, cafés, and restaurants because that was the majority of my experience. It's also the New York I sometimes wish it was. There's a building that went up in Astor Place about seven years ago that is so ugly and out-of-place – I hate it, and so when I included it in *Unavowed*, I completely trashed it.

**How does the city inspire and inform your writing? Does it shape your characters?**

Most of the characters are representative of people I know or have encountered. I see someone on the street and something about them strikes me, and the next thing I know I've created a whole life story for them in my head. Sometimes they end up in my games, sometimes not! But I wouldn't call them 'New York' characters, more just characters who live in New York.

▼ A baby on a roof and an ominous sky over New York are characteristic of *Unavowed's* take on the city.



**A variety of locations played an important role in your games. Why were these chosen?**

The majority of these locations are about five minutes from places I've lived or worked in. I lived in the East Village for 13 years, so it's no coincidence that the majority of the chosen locations are there. Aside from that, there's no rhyme or reason as to why I choose them. There are places I enjoy going to, and locations that speak to me, and I include them. I used to walk along the Roosevelt Island promenade all the time in the early noughties, so I included the place in both *Blackwell Unbound* and *Convergence*. It's special to me, and I wanted to share that.

**Do you have a specific location where you love the way it was conveyed and reimagined in your games?**

Too many to mention. I do love how Grace Church turned out. And I love revisiting the Minetta Tavern in *The Blackwell Convergence*, since the real Minetta was remodelled and has become very upscale now (you need to make a reservation weeks in advance just to pass its door) and the famous Joe Gould portrait is no longer hanging there. I'm very happy with how Chinatown turned out in *Unavowed*. I feel we nailed its atmosphere.

**How much do you change actual locations?**

I change a lot! That pesky real-world geography often gets in the way of gameplay. In *Unavowed* you can walk from Astor Place to Tompkins Square Park in about five seconds, when in reality it would take much longer. I also changed the Brooklyn subway station in *Unavowed* because I wanted an outdoor above-the-street station (something real Brooklynites often call me out on). I'm less precious about accuracy than I used to be. Making the game fun is more important.

***Blackwell Unbound* was set in the 1970s. How did you date your environments?**

I, er, didn't. There's a lot I got wrong. The Roosevelt Island promenade didn't exist in the seventies, and the Lower East Side neighbourhood Lauren goes to was so dangerous back then that she would have never walked alone there – ghostly companion or no. I made sure to give the characters some period-specific clothes and furniture, but aside from that, I didn't think about it much!



▲ Wadjet Eye Games' resident artist Ben Chandler has already started working on the stunning urban views of the forthcoming *Old Skies*.

**How much research goes into your urbanism?**

I used to do a lot more. But I found it often hurt the story more than it helped. *The Blackwell Convergence*, for example, was tied into the real-world story of Joseph Mitchell, and I was so enamoured with being historically accurate I tied the story into knots to make all the details fit. It got so tangled up that the game literally trapped you in a room for another character to explain the backstory to you. I was never a fan of how this turned out. So while I still do research, I don't let myself stay beholden to it.

**You seem to avoid emphasising famous landmarks and places – why?**

Funny you mention that, because I've always felt I did the opposite. But I suppose the locations are only famous if you *live* here! Every New Yorker knows the High Line, Green-Wood Cemetery, or Grace Church. I've never included Times Square because that looks like a nightmare to create!

**How important is the culture and life of the city in its virtual version?**

It's only important in that it feels right to *me*. There are things I'm precious about, and things I'm not. A recent example: in our current game there is a scene that takes place in an NYU dorm. Ben [Chandler] drew the outside of the dorm and decided to draw some graffiti on it to add a bit of life. It looked very pretty, but I lived in the NYU area and know they'd never let graffiti stay on their buildings. So I asked Ben to change it. Other times I just shrug and let it go. It's important only inasmuch as I personally feel it's important.

**Will you be revisiting New York City in the future?**

Yep! *Old Skies* is a time travel game that takes place in New York's past, present, and future. 🌐

## THE SHIVAH

The first adventure ever released by Wadjet Eye Games, the rabbinical mystery *The Shivah*, was unsurprisingly also set in New York, albeit in a less supernatural version of the city. A remastered version of the game is still available via [wfmag.cc/Shivah](http://wfmag.cc/Shivah). Play it if you want to experience a fine example of just how strongly local urban cultures can influence narrative, setting, and game design.

# An introduction to pathfinding in games

Here's how AI agents plan a path through an environment, complete with a Unity project to show you how it all works



**AUTHOR**  
**PAUL ROBERTS**

Paul Roberts has previously worked at Team17, Activision, and Traveller's Tales. He's now working at Sumo Digital as a senior AI and gameplay programmer.



**T**here are all kinds of ways to get your character from point A to point B, but none is more widely known or used than the A\* algorithm. This approach isn't perfect, but over the years, modifications have been made that improve on the original. Before we delve into the algorithm itself and see how it works, let's first take a look at what pathfinding actually is.

In a game world, there can be many obstacles sprinkled throughout an environment. These can range from destroyed buildings right down to trash cans in an alleyway. It would be so much easier if we could just walk in a straight

line to get to where we wanted, but that would make for a dull game. So, given our world will be strewn with obstacles, we need a way to find a way through it, and whatever solution we come up with, it needs to:

- a. Calculate the path quickly
- b. Generate a path that is 'reasonable' to the player

Getting both of these right isn't as easy as you might think – there's always a trade-off. We can easily get a rubbish path quickly, but then that's not 'reasonable' from the player's perspective and our characters look unintelligent. Alternatively, we could wait for the 'best' path to be calculated, no matter how long it takes, but this creates other issues: while our pathfinding algorithm is running, it'll be stuck in a loop until it returns. This means no other game system can run while we're hogging all the resources, resulting in a lagging game.

We could cater for this issue by splitting our algorithm in a manner that allows it to calculate over several frames, which would allow other systems to run their processes. This fixes our previous issue, but makes our code a little more complicated. It also means our characters will stand in place waiting for a path to be returned. Hardly realistic behaviour. Again, we can fix this by returning partial paths to get the characters on their way, or we could allow them

♥ Even the most expensive games can have iffy pathfinding AI - just take a look at the odd behaviour of drivers in *Cyberpunk 2077*.





▲ If you've ever played a tactical game – like *Command & Conquer Remastered* – you'll have seen pathfinding AI in action.

to randomly wander around the environment until we have a path, but wouldn't it be great if we could just get the right path quickly? As with most things in life, nothing comes without compromise. Let's take a look at an area that can have a major impact on performance, but is something outside of the pathfinding algorithm itself: spacial representation.

## SPACIAL REPRESENTATION

One area that can help with the issues discussed above is the internal representation of the environment. That is, how the code understands the game world. One way is to grid out the environment and store a value in each cell to indicate whether this area is accessible or not. This is a simple approach, but it doesn't allow for non-rectangular shaped environments, and can require a lot of nodes to represent the environment. Imagine a 100×100 grid – this gives us 10,000 nodes to explore.

Another approach is to use a collection of nodes. This would dramatically reduce the number of calculations required when compared to a grid-based approach. The same environment that required 10,000 nodes could be represented by a handful of nodes – around 100 would be reasonable. Creating this representation is more challenging than the grid-based approach,

**“As with most things in life, nothing comes without a compromise”**

though. We need some way to place each of these nodes so that they're visible to at least one other node, otherwise it won't be accessible to the character. This can be done by hand-placing them throughout the game world – a tedious task that allows for the introduction of human error.

If the game uses a navigation mesh, we could generate the nodes from this, which would give us one node for each polygon on the mesh. This approach describes the environment well, but will probably need to have an additional process to remove unnecessary nodes and create links between them. Another approach is to add nodes to the corners of the objects in the environment, and then run an additional process to join them up.

There are other approaches, but for our accompanying Unity project (download from [wfmag.cc/wfmag48](http://wfmag.cc/wfmag48))

we've gone with the grid-based approach. This is the most straightforward, and will help us in understanding what our pathfinding algorithm is doing. Plus it enables us to simply click on a cell to make it accessible or not, and then re-run the path generation.

## PATHFINDING

So we have our internal representation of the game world, but we still have no way of finding a path around the obstacles between us and ➔

our target position. This is where pathfinding algorithms come in. There are many to choose from, all of which offer their own pros and cons. You could use A\*, Theta\*, HPA\*, Jump Point Search, D\*, Directed Recursion Search... the list goes on. Delve deeper into this area of research, and you'll see that a lot of the algorithms simply improve on the A\* algorithm in some small way. So for a beginner, there's merit to learning how to code the original A\* algorithm – which is what we'll focus on here.

The A\* algorithm is itself an evolution of an older approach: it's the successor to Dijkstra's algorithm. The similarities between the two can be seen in the way the A\* algorithm chooses which path to investigate next. Dijkstra's algorithm uses a 'cost so far' approach, meaning that all decisions are made on the accumulated path cost to the current node. The A\* algorithm not only uses the cost so far, but also incorporates an estimation as to which route will result in the shortest path to the target node, making it a directed search algorithm. It's more efficient than Dijkstra's algorithm and will always find a path if one exists, but the A\*

### “The Manhattan distance calculates its guess based on a grid structure”

algorithm will consume more time and memory than Dijkstra's algorithm if there's no possible path available, as all routes need to be searched. When a path does exist, however, the A\* algorithm will find the shortest route relatively quickly, but in the context of video games, it's still a time-consuming process, and one that also performs poorly in large environments.

The estimated cost from a node to the target position is calculated using a heuristic function. The type of heuristic used can have different effects on the output from the search, so choosing the correct one for your game is important. The most popular heuristic functions used are the Manhattan distance and the Euclidean distance. There are others, but for the sake of this explanation, I'll stick with the two most common.

The Manhattan distance approach calculates its guess based on a simple grid structure. It counts how many cells across the target is and how many cells up the target is. These values are added together to give us our estimated cost. The Euclidean distance is simply the length of the hypotenuse on a right-angle triangle, with each node's position forming the ends of the hypotenuse. Using Pythagoras' theorem, it's just a matter of calculating the distance between two points. This value becomes the estimate from the next node to the target node. This approach will consistently underestimate the distance to the destination and result in fewer nodes being searched.

Both approaches work, but each offers a slightly different result. For the accompanying project, we're using the Euclidean approach as it gives the better results, but for the explanation below, we'll be using the Manhattan approach as it works well with the grid-based structure we're using and simplifies the explanation.

The formula for calculating the overall cost of a node in the A\* algorithm is as follows:

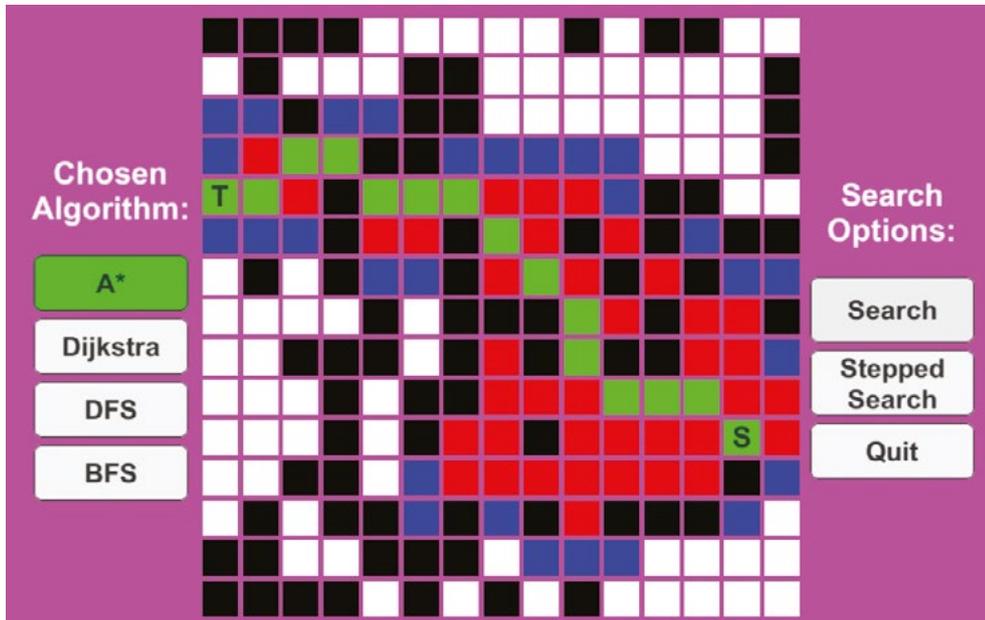
$$f(x) = g(x) + h(x)$$

f represents the final cost of the node, which is calculated by the cost so far, g(x), added to the estimate from this node to the target node, h(x). Each node must contain these values when using the A\* algorithm.

#### CODE LISTING 1: A\* ALGORITHM PSEUDOCODE

```

Calculate g, h and f values for the start node.
Add starting node to the OPEN list.
While the OPEN list has nodes to search:
    Set N to equal the cheapest node from the OPEN list.
    Check if N is the Target node.
        If so, unwind nodes via parent pointers to generate the path.
        End the search here.
    While N has unexplored nodes connecting to it.
        Set C to equal a connected node to N.
        Calculate the g, h and f values for node C.
        Check if C is already on the OPEN or CLOSED lists.
            If so, check if this route is cheaper.
                If so, set the parent of C to be N, and
                update with the new g, h and f values.
            Otherwise, ignore the c node.
        Otherwise, add C to the OPEN list.
    End while.
    Add N to the CLOSED list.
    
```



◀ This handy Unity project provides a real-time illustration of how pathfinding algorithms work.

The A\* algorithm makes use of lists for storing its nodes. An OPEN list is used for storing the nodes generated in the search, but yet to be expanded, and a CLOSED list containing the nodes that have been both generated and expanded to produce successor nodes. Manipulation of these lists is where a lot of the processing time for the A\* algorithm is consumed. Pseudocode for the actual algorithm can be seen in **Code Listing 1**. Rather than getting too bogged down in heuristic functions and lists, let's go through an example.

### CELLS INTERLINKED

Take a look at **Figure 1**: this shows the naming convention that will be used throughout this example. **Figure 2** is our environment. Notice how it's gridded out, and the cells marked with hashes are inaccessible. We want to get from the start node S to the target node T. These are located in cells M and A, respectively. Throughout this example, the cells have been colour-coded. Green is the node we're currently examining, blue are cells on the OPEN list, and red are cells on the CLOSED list. The moves allowed for this example are simply Right, Down, Left, and Up. This is the order in which they get added to our OPEN list, which is important to note, as adding them in a different order will produce a slightly different result. Nodes are always added to the top of the list, pushing existing nodes further down. In the accompanying project, we've allowed for diagonal movements to be included. This again produces somewhat different results.

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P

▲ Figure 1

T			
█	█		
S			

▲ Figure 2

To begin with, we simply have our starting node, which is cell M. This isn't the target node, so we add the nodes that we can reach from M to the OPEN list. This is where our search begins. We take a look at the OPEN list and expand the node with the lowest overall cost. At the moment there's only node M in the list, so we expand that. We can't go left or down, so that just leaves node I, which is up, and node N, which is to the right. These get added to the OPEN list, but only if they aren't already stored in our CLOSED list. They aren't, so they both get added (see **Figure 3**). ➔

█	█		
I			
M	N		

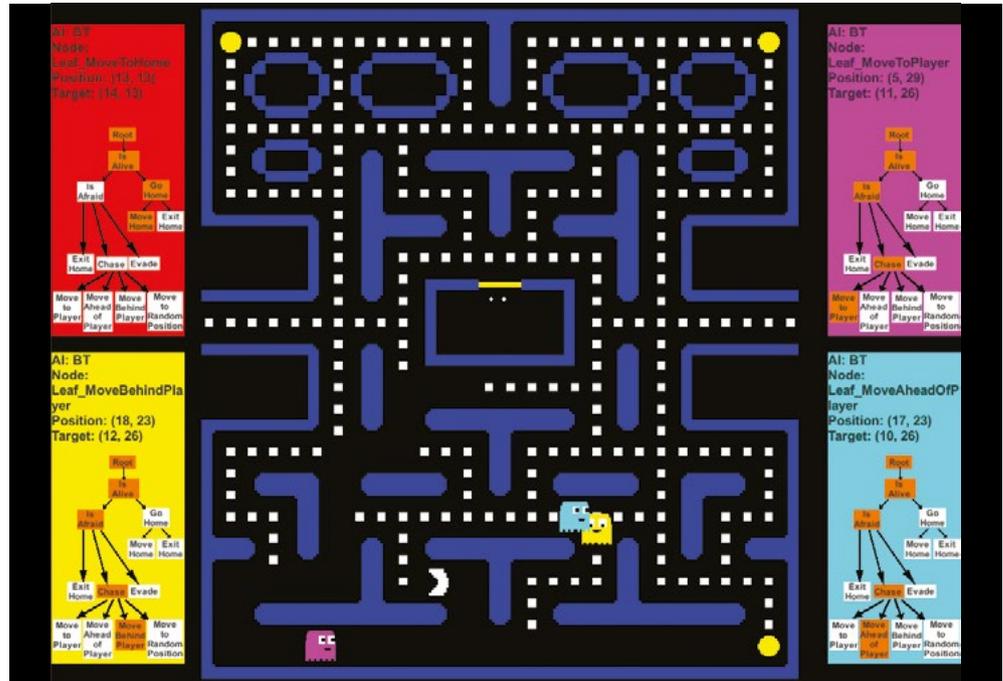
▲ Figure 3

OPEN LIST			
ID	g	h	f
I	1	2	3
N	1	4	5

### DEPTH AND BREADTH

Using a traditional Depth-first search or Breadth-first search will find you the route between two nodes, if one exists, but they're both undirected searches, meaning they will blindly search the entire tree until it either finds the target or it doesn't. The resulting path will also consist of all the nodes it visited to reach the target. Not really what you want.

> *Pac-Man* is one of the finest examples of early pathfinding AI with personality. See *Wireframe* issue 43 ([wfmag.cc/43](http://wfmag.cc/43)) for Paul's in-depth article on its ghost behaviours.



## PROJECT X

The accompanying project allows you to use four different algorithms to search the environment. You can do a straightforward search, or you can step through and see which nodes have been explored so far.

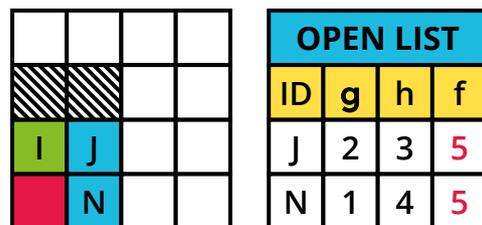
When adding a new node, we need to set the  $g$  value to be the cost of getting here; in this case, both nodes (I and N) took one move to get from the start, so we set their  $g$  values to 1.

Our heuristic is the  $h$  value. Remember, we're using the Manhattan distance, so count how many moves up and across it will take to reach the target node. At this stage, we aren't interested in obstacles – it's simply a guess. If we did consider the inaccessible cells, there would be no point in the rest of the algorithm. So, N takes four moves, and I takes two moves to get to our target node. These are our estimates. Finally, the  $f$  value is set to be the result of adding  $g$  and  $h$ . This is the value that we will use to determine which node should be searched next.

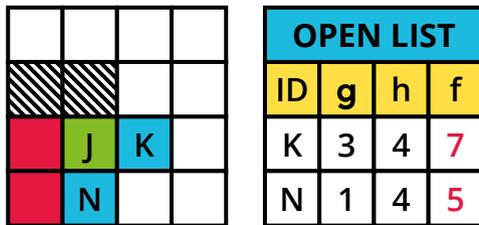
We're now finished with node M, so it can be added to the CLOSED list. The internal values for M will be as follows:  $g$  is 0 because it took 0 moves to get there from the start,  $h$  is 3 as it would take three moves to get to the target node

from here, and  $f$  is  $g$  and  $h$  added together giving a value of three. **Figure 3** shows the current state of the search, along with the OPEN list.

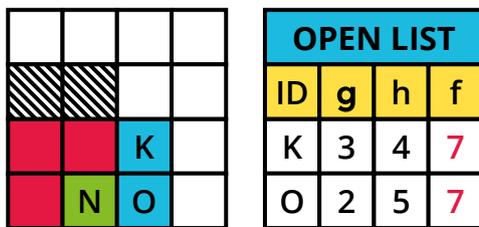
As we have not yet found the target node, and there are still nodes available in the OPEN list, we repeat the process with the next cheapest node found in the OPEN list. As can be seen from the OPEN list in **Figure 3**, I is the next cheapest option. The I node isn't the target node, so we must examine it to see what nodes it connects to. You can move in three directions from node I – Right, Down, and Up. Up, however, is inaccessible, so we ignore it. Right leads to node J, which is accessible and isn't on the CLOSED list, so we calculate its  $g$ ,  $h$ , and  $f$  values and add it to the OPEN list. The Down direction leads back to node M. We know we've already visited this node as it can be found on the CLOSED list, but before we just ignore it, we need to be sure that we haven't found a quicker route to node M. To do this we calculate values for node M as if this were the first time we've encountered it. The  $g$  value will be a 2, as it took two moves to get from the start node, to node I and back to node M. Next, we calculate the  $h$  value. This amounts to three moves, so the  $h$  value is set to 3. Next, we add both the  $g$  and  $h$  together to give our  $f$  value a 5. The M node stored in the CLOSED list will have an  $f$  value of 3, as it took 0 moves to get to it the first time. This means that our new route to the M node is more expensive than the original route, so we ignore it. **Figure 4** shows how the search currently stands.



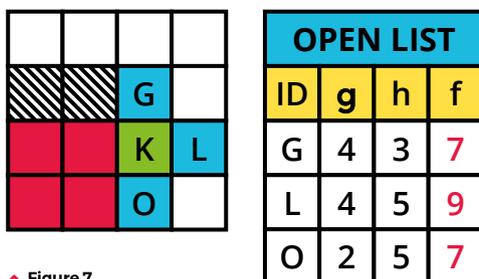
▲ Figure 4



^ Figure 5



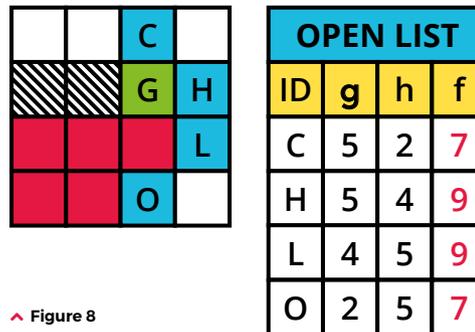
^ Figure 6



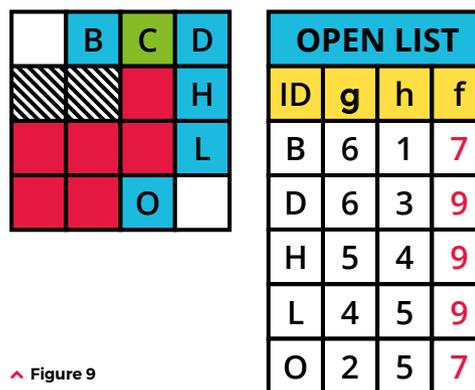
^ Figure 7

This process is repeated until the target node is found (see **Figures 5–11**), at which point the search is ended and we have our path, or the OPEN list becomes empty, meaning there's nowhere else to search and no path is possible. In this scenario, we do find the target node. If you take a look at **Figure 12**, the resultant path is shown. Notice how nodes that move away from the target have not been explored. If it had turned out that the target node was blocked – let's say cell B was inaccessible – these more expensive nodes would have been explored in an attempt to find a path. There wouldn't have been a valid path, and the algorithm would have exited with no nodes to follow.

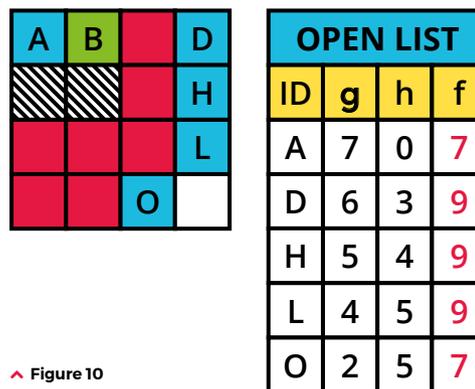
Download the accompanying Unity program and you can change which cells are accessible, inaccessible, and where the search starts and ends. We've also included Dijkstra's algorithm, a Depth-first search, and Breadth-first search for fun. Using the same colour coding as the examples above, you can see which cells were explored on both the OPEN list and the CLOSED list. 🌐



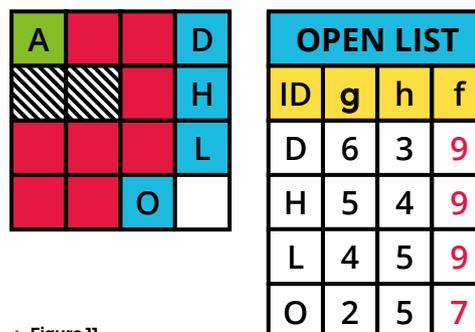
^ Figure 8



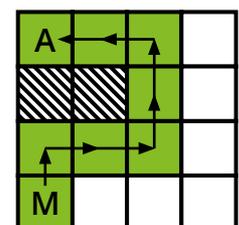
^ Figure 9



^ Figure 10



^ Figure 11



^ Figure 12

# Designing a killer courtroom drama

Paradise Killer has some of the best-feeling detective work yet seen in a video game, and teaches vital narrative design lessons



**AUTHOR**  
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**T**here's a key problem in detective games, particularly ones which feature courtroom-style play and require the player to build a case. It's this: the plot requires a certain outcome. This is perhaps most easily highlighted in *Phoenix Wright*, where the player's required to input the correct evidence or argument at the correct time in order to crack the case. Failure would contradict the game's plot, so the player must simply fail and repeat the trial until they determine the 'correct' course of actions. A simple problem? Well, there's a reason that *Phoenix Wright* and so many other deductive games have this restriction: branching the plot to encompass different outcomes for each trial while still hitting the same emotional highs and lows would be a ridiculous amount of work.

Kaizen Game Works' *Paradise Killer* fixes this. By including only a single, momentous trial at the end of the game, it no longer needs a specific outcome, since there's very little post-trial content to branch. The game is utterly open: you can convict everyone or no one, get it blindingly wrong or completely right. There is no failure, but you know it would suck to finish the trial, completely whiff it, and be forevermore disappointed with yourself for not being prepared enough. These are significantly higher stakes in my opinion than a 'Return to Checkpoint?' prompt and the threat of having to repeat 20 minutes' worth of content, adding far more drama and finality to the player's choices.

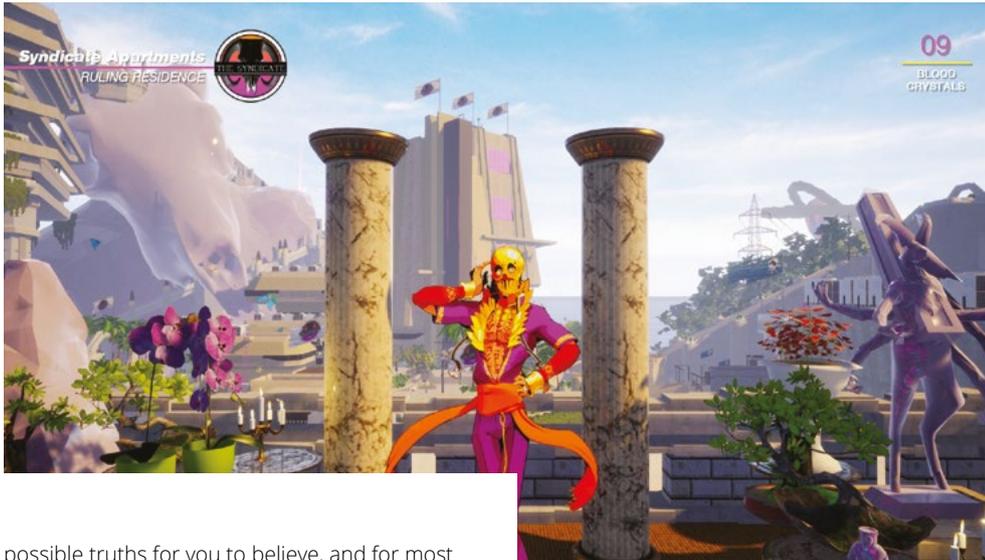
## CONTRADICTIONS

Before the trial, the majority of the game focuses on pure investigation. This means a lot of traversal, finding clues, then going back and forth between roughly ten characters asking them what they have to say in response. They will give you a little bit of testimony each time you confront them with something new, which you can then also bring up with the relevant characters who will either corroborate or contradict it.

Occasionally a single physical clue will lead to several layers of confession and counter-testimony, with discrepancies reaching a brick wall at which characters bull-headedly stick to their story and simply insist the others are lying. This is one of the best things about *Paradise Killer*, since it means that there are multiple

✓ Topic selection is clunky and dissonant, often leading to another menu of only one choice. This problem was solved in *The Red Strings Club*, examined in issue #47.





possible truths for you to believe, and for most of the game real, hard thought must be put into deducing which is the most likely. In fact, it becomes apparent over time that there were at least two separate plots to commit most of the crimes you are investigating, meaning that you're assessing not only who planned to do what, where, and why, but also who actually succeeded.

### POINTING THE FINGER

Then, at trial, the game hits you with its design decision. Despite multiple conspiracies, and often a crime such as 'Who trespassed in X location?' having been committed more than once separately by different individuals, you can accuse just one person of each crime. Let's say you can exclusively accuse character Y or Z of trespassing in X location, but you know they both did it. This decision then becomes about two things:

which of their cases is most provable, and who deserves justice more?

This question of justice is the most interesting part of the trial process.

Did Y have more malicious intent behind their crime than Z? Did Z commit the crime more deceptively, or with more premeditation than Y? Does Y deserve the blame more, but is already convicted of a previous crime, so you should accuse Z to balance the scales? In my own playthrough, I made a number of crucial and complex decisions at trial, which included both A) falsely pinning crimes on someone already sentenced to death so that sympathetic characters (who I knew and could prove were guilty) could get away with reasonably justified non-violent crimes, and B) never bothering to accuse several guilty characters since they were already deceased, so accusing others on shakier evidence of attempting the same crime (just

because they had it coming). The game clearly enabled juicy, high-level moral decision-making!

### EXCESS CLARITY

As good as the trial was, the game has an Achilles heel: if you explore long and thoroughly enough, you find the smoking guns. Irrefutable, concrete evidence of pretty much exactly who killed who. There are still multiple plots and guilty parties, but much of the hard deduction you do earlier in the game is rendered useless when you see clear as day who did what successfully, where, and when. It takes the wind from under the attentive player's wings, and while there's a defensible desire to provide a backup for players who really couldn't figure it out alone, given that the game doesn't

actually have a fail state, *Paradise Killer* could allow you to go into the trial still a little unsure of the theories you'd built and your ability to convince

the judge of them. Doing so would have kept the courtroom tension high, instead of lowering the stakes at the last minute by allowing you to enter the trial essentially assured of your success.

So, what has *Paradise Killer* taught us? Centrally, it's that prepping evidence for and then playing out a courtroom scene is most luscious when the trial's outcome is not a foregone conclusion. On one hand, *Paradise Killer* solves this by having no scripted or 'true' ending, and Kaizen pulls it off by only having a single trial in the story. On the other hand, its penultimate moments give the player overpowering evidence, bringing the resolution back into foregone territory. Moral of the story? Maintain a healthy nibble of player uncertainty at all times. 🐼

**"If you explore long enough, you find the smoking guns"**

◀ *Paradise Killer* keeps the player doubting themselves by being so relentlessly bizarre that pretty much anything could contradict their entire case at any time.

### A familiar problem

Once you've accused someone, the prosecution process is executed the same way that questioning characters is earlier in the game, by breaking up the content into short conversations arranged by topic, selectable in any order. It feels rote and clunky, although the juiciness of the plot generally covers for it. The game itself seemingly acknowledges this problem when it comes to presenting evidence of conspiracies, which you're asked to do after you've finished prosecuting individual crimes, as the protagonist simply rattles through everything she knows on the subjects without player input.

▼ *Paradise Killer* has no qualms about telling you exactly what it's trying to achieve. Subtle, it is not.



# How not to code: a guide to concise programming

Updating a 22-year-old game brought Andrew face to face with some very poor coding practices



**AUTHOR**  
**ANDREW GILLETT**

Andrew Gillett is a tutor and programmer who has worked on ten published games including *RollerCoaster Tycoon 3*, *LostWinds 2*, and *Kinectimals*.



In 1998, at the age of 17, I was learning how to write games in C. My first attempt, the subtly titled *DEATH*, was not going well. The game was my take on *Hardcore*, a 1992 Atari ST game by legendary game developer and sheep enthusiast Jeff Minter, which had been released only as an unfinished five-level demo. The player controlled four gun turrets on the outside of a square arena, into which enemies teleported. While the original game had been enjoyable and promising, my version wasn't much fun, and I couldn't work out why. Making a decent game

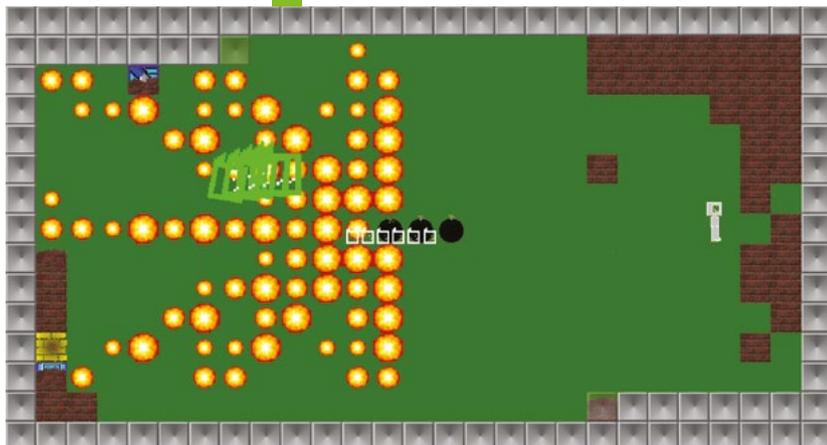
would also have involved making dozens of levels and many enemy types, which was looking like too big a task, especially as I was finding it hard to understand the intricacies of how the enemies in *Hardcore* moved.

So I abandoned that game and decided to replicate a different one – 1994's *MasterBlaster*, a *Bomberman*-style game on the Commodore Amiga. *MasterBlaster* didn't have a single-player mode or bots, so there was no enemy AI to write. And the level was just a grid with randomly generated walls and power-ups – so there was no real level design involved. With those two hurdles removed, development went fairly smoothly, the biggest challenge being working out some of the subtleties of how character movement worked.

The game, which I named *Partition Sector*, was finished in mid-1999 and spent the next 18 years on my website being downloaded by very few people. In late 2018 I decided to do a quick update to the game and release it on Steam. Then I started having ideas, and ended up working on it, on and off, for two years.

One of the biggest hurdles I came across when writing my first games was how to structure the code. I knew how to write a basic game loop, in which you update the positions of objects within the game, then draw the level and the objects within it, and then loop back to

▼ A series of ultrabombs blowing up a snake.





^ The 2021 version of *Partition Sector*.

the start, ending the loop when the 'game over' criteria are met or the player has chosen to quit. But for a full game you need things like a main menu, submenus, going through a particular number of rounds before returning to the main menu, and so on. In the end, I was able to come up with something that worked, but looking back on my old code 20 years on, I could see many cases of absolutely terrible practice. While most of my time was spent adding new features, a lot of time was spent rewriting and restructuring old code. I'm going to share some examples from the original code so you don't make the same mistakes!

**"I started having ideas, and ended up working on it, on and off, for two years"**

### AVOID REPETITION

In the original *Partition Sector* code, when the player moved the analogue stick up to move up the screen, there was a section of code which checked for this and then applied the movement. This included checks such as: is the player currently piloting a remote-control bomb, and is there space for the bomb to move up? If so, apply the movement. If the player isn't remote-controlling anything, check to see if there's space to move the player character up. This includes checks for either a wall or a bomb

being in the way. If the player has the ghost power-up, they can walk through most, but not all, walls, so we have to check for that too. If the player's able to move, we move them up a small amount, then also do a small movement left or right if they aren't fully aligned with the vertical lane they're moving in. If movement is blocked by a wall or a bomb, and the player has

the 'Strength' power-up which allows them to push such things, we apply the push effect, first making sure there's a free space for the

wall or bomb to be pushed into. Finally, if the player is blocked by a wall, we might apply what I call secondary movement to the left or right, moving the player in the direction of an available lane. There's also code for updating the walking animation. In total, the code for the player moving up was 155 lines.

### MOVEMENT LOGIC

Having written this code, I then proceeded to copy and paste it three times, for the down, left, and right directions. This is extremely bad. The code for moving down was identical to the code for moving up, except that it was checking for blockages and applying movement in the opposite direction. The same was true of the →

### OTHER LANGUAGES

Each programming language has its own way of giving you access to other code files – in C# and Java you can automatically use public classes from other files within the same project, while in C++ you have to use header files (with include guards or #pragma once) to declare shared functions and classes. When working in Python, note that it won't let you have circular imports – for example, writing `import file2` in `file1.py`, and `import file1` in `file2.py`.

left/right code, except it checked and updated the X-axis instead. One of the biggest issues with this code was that any change to the logic had to be applied four times – once for each direction. Besides the increased workload, every time I made a change, there was a risk that I'd forget to apply it to one of the directions, in which case I'd end up with a character who obeyed different movement rules depending on which direction they were moving.

The solution was to create a function, `move`, with two integer parameters – `xDir` and `yDir`. A value of zero for either of these means 'Don't try to move on this axis', while values of -1 or 1 correspond to moving up/left or down/right. Each frame I get the control inputs and call the function with the appropriate values. Inside `move`, instead of specifically checking for

a wall above, below, or to the left or right of the player, I instead work out which grid square the player would be in if they were to move in the specified direction, then check to see if there's a wall or bomb in that square. Writing generic code like this can sometimes be slightly harder than writing separate code for each specific case, but it's a vital skill to practice. Part of what separates experienced and inexperienced programmers is the ability to recognise opportunities for reducing code duplication.

The code in **Figure 1** and **Figure 2** shows two simplified re-creations of the player movement code in Python. The second example has been split into multiple code files. In each case, grid

squares are 64×64 pixels, and the player moves at a speed of two pixels per frame. In the first (bad!) code example, the update method in the `Player` class has separate movement code for each direction. If we take the example of trying to move left, we only allow the player to move if there isn't a wall immediately to their left. We just check a single point, which is halfway down the sprite on the Y-axis, and just past its left edge on the X-axis (in this example, the player's X and Y coordinates represent the top left of the sprite). We convert the selected pixel coordinates to grid coordinates and check for a wall – in the GRID list at the top of the code, each row is represented by a string, where a space represents an

empty square, while 'X' represents a wall. If the proposed new position is empty, we apply the movement. We then check to see whether

the player is perfectly aligned with their current horizontal lane. If not, we apply a small change to the Y position, moving it in the direction of being centred in the lane.

In `player.py` in the second set of example code, there's only one set of movement code, which deals with all four directions. You'll also notice that constants are used for the grid square size, half the grid square size, and the player movement speed. First, we set the variables `x_dir` and `y_dir` to -1, 0, or 1 to indicate which direction (if any) the player is trying to move on each axis. It uses the `Controls` classes, which are explained later on. The game doesn't allow for diagonal movement, so if the player's →

**“Experienced programmers recognise opportunities for reducing code duplication”**



➤ Snake Hunter mode.

FIGURE 1

```

import pgzero, pgzrun

WIDTH,HEIGHT = 576,320

GRID = ['XXXXXXXX',
        'X   X',
        'X X X X X',
        'X   X',
        'XXXXXXXX']

class Player(Actor):
    def __init__(self, pos):
        super().__init__('player', pos,
            anchor=('left', 'top'))

    def update(self):
        if keyboard.left:
            x = int(self.x) - 2
            y = int(self.y) + 64 // 2
            grid_x = x // 64
            grid_y = y // 64

            # The square ahead does not have a wall
            if GRID[grid_y][grid_x] == ' ':
                # Apply movement
                self.x -= 2

                # Lane alignment
                if y % 64 < 64 // 2:
                    self.y += 1
                elif y % 64 > 64 // 2:
                    self.y -= 1

        if keyboard.right:
            x = int(self.x) + 64 + 2 - 1
            y = int(self.y) + 64 // 2
            grid_x = x // 64
            grid_y = y // 64
            if GRID[grid_y][grid_x] == ' ':
                self.x += 2
                if y % 64 < 64 // 2:
                    self.y += 1
                elif y % 64 > 64 // 2:
                    self.y -= 1

        if keyboard.up:
            x = int(self.x) + 64 // 2
            y = int(self.y) - 2
            grid_x = x // 64
            grid_y = y // 64
            if GRID[grid_y][grid_x] == ' ':
                self.y -= 2
                if x % 64 < 64 // 2:
                    self.x += 1
                elif x % 64 > 64 // 2:
                    self.x -= 1

        if keyboard.down:
            x = int(self.x) + 64 // 2
            y = int(self.y) + 64 + 2 - 1
            grid_x = x // 64
            grid_y = y // 64
            if GRID[grid_y][grid_x] == ' ':
                self.y += 2
                if x % 64 < 64 // 2:
                    self.x += 1
                elif x % 64 > 64 // 2:
                    self.x -= 1

player = Player( (64,64) )

def update():
    player.update()

def draw():
    screen.clear()

    for row_index in range(len(GRID)):
        for column_index in range(len(GRID[row_
index])):
            if GRID[row_index][column_index] != ' ':
                x, y = column_index * 64, row_index
                * 64
                screen.blit('gridblock',(x,y))

    player.draw()

pgzrun.go()

```

FIGURE 2

```

import pgzrun, pygame
from shared import *
from player import Player
from controls import KeyboardControls,
JoystickControls

WIDTH,HEIGHT = 576,320

controls = JoystickControls(0) if pygame.joystick.
get_count() > 0 else KeyboardControls()
player = Player( (64,64), controls )

def update():
    player.update()

def draw():
    screen.clear()

    for row_index in range(len(GRID)):
        for column_index in range(len(GRID[row_
index])):
            if GRID[row_index][column_index] != ' ':
                x, y = column_index * GRID_SQ_SIZE,
row_index * GRID_SQ_SIZE
                screen.blit('gridblock',(x,y))

    player.draw()

pgzrun.go()

```

◀ Figure 1: An example of bad code. Sure, it works, but look at all that duplication.

◀ Figure 2: An example of good code. Look how much more compact it is than the previous sample.

### DIFFERENT CLASS

An abstract class is one that cannot be instantiated – or in other words, you can't create an object based on it. Its purpose is to serve as a base class for other classes, which implement the specified abstract methods.

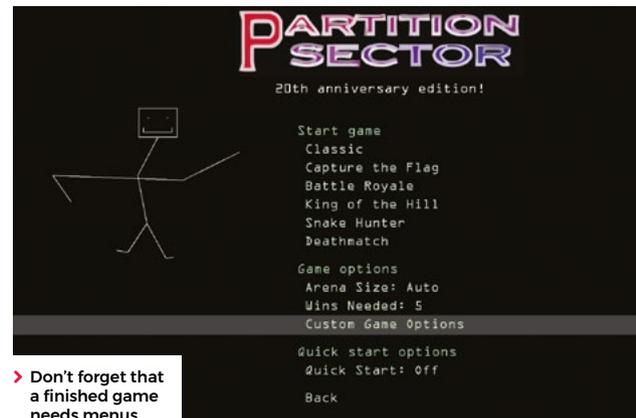
pressing keys for both axes at once, we ignore the up and down keys. If either `x_dir` or `y_dir` is non-zero, the player is trying to move. The variable `horizontal` exists purely for readability, and is set to `True` or `False` depending on whether the player is trying to move on the X-axis. We calculate the centre position of the player, then work out which grid position we're going to check for a wall, based on the axis and direction. The function `get_grid_pos` is used to convert from pixel to grid coordinates. If no wall is present, we apply the movement by updating both the X and Y coordinates based on `x_dir/y_dir` multiplied by `SPEED`. Although we only want to move on one axis, the variable for the other axis will be zero, so no movement will take place, without the need for an `if` statement. Finally, for lane alignment, we work out the position we'd like the player to be aligned with, and the `move_towards` function, defined, above the `Player` class, ensures that they will move in the necessary direction, without overshooting the target position.

### SPLIT CODE INTO FUNCTIONS

The game's original C code contained a function named `playTheGame`, which was over 1200 lines long. This function was called when the player selected Start Game from the main menu, and handled setting up and playing each round of the game. Within this function, the largest section of code was the main game loop, which included updating each player (primarily dealing with movement and the dropping of bombs), updating bombs and explosions, updating the walls which shrink in towards the centre of the level, and drawing everything to the screen.

```
updatePlayers();
updateUncarriedFlags();
updateKOTH();
updateBombs();
updateExplosions();
updateDeath();
updateShrinking();
updateBattleRoyaleTeams();
updateRespawningWalls();
updateSnakeHunterSpawning();
```

> Moving code into separate functions makes it easier to see the big picture.



It also checked to see if the round needed to end (because a player had won, for example). Apart from the code which updates bombs and explosions, none of this had been separated into separate functions. In the new version, the code and data for the game logic have been moved into a class named `Game`, and that class contains methods such as `updatePlayers`, `updateBombs`, `updateShrinkingWalls`, and so on. The code for the main game loop largely consists of calls to these new methods, making it shorter and more readable.

### SPLIT YOUR CODE

The code for the 1999 version of the game consisted almost entirely of a single C++ file which was over 5500 lines long. At the time, I didn't know how to split my code into multiple files. These days I try to keep code files as short as possible – preferably no more than 1000 lines, although this isn't always possible. Ideally, each file should implement one class or module.

The improved version of the Python code shows how to split your code into multiple files. The main file is `maze_good.py` which runs the game, and uses the `from/import` statements to load in other Python files. The `Player` class is contained in `player.py`, the keyboard and gamepad controls are contained in `controls.py`, and `shared.py` contains constants and functions which need to be accessible from multiple files.

### AVOID GLOBAL VARIABLES

The original code featured many variables that needed to be accessed from multiple functions. For example, there was an array of players, mainly accessed from the main game function, but also used in functions for getting the sprite for the current animation frame, drawing the players on the screen, and several others. My solution at the time was to use global variables, which can be accessed from any function. Beginner programming courses advise you to minimise your use of global variables, as they



can make it difficult to keep track of where variables are changed. Another problem with this approach is that it can lead to old data persisting. When I created a new variable, I had to remember to reset it each time a new game is started, otherwise, the value of that variable from the previous game would carry over to the new game. Usually this led to obvious bugs which were easily fixed, but occasionally it led to more subtle bugs which weren't noticed for some time. Encapsulating these variables inside the **Game** class solved this issue, as the game object is re-created at the start of each game, ensuring that all variables contained within it are automatically set to their default values.

## BEHAVIOUR AND CLASSES

Each player needs one or more variables indicating which controls they are using. For example, one player may be using a particular controller; another player may be using the arrow keys; a third player might be using different keys. In the original code was a variable indicating if the player was using a keyboard or a controller, and a variable specifying their controller or keyset number. Each time I wanted to check whether a player was pressing their controls in a particular direction, I would first have to check which type of controls they were using, and then had to check the input for the relevant control type.

A better approach is to have a class named **Controls**, which exists purely as a base class for other classes that implement specific control methods. The **Controls** class itself isn't intended to be instantiated: it doesn't represent any

particular control method, just controls in general. It specifies methods that its subclasses must override. In **controls.py**, the **Controls** class inherits from Python's **ABC** (abstract base class), and uses the **@abstractmethod** attribute to specify that any class inheriting from **Controls** must implement the methods **get\_x\_dir** and **get\_y\_dir**. The **KeyboardControls** and **JoystickControls** classes inherit from **Controls** and provide their own implementations of those methods. In the main file **maze\_good.py**, we assign the player an instance of either **KeyboardControls** or **JoystickControls** depending on whether any controllers are connected.

The beauty of this system is the player code doesn't need to know anything about the different control methods, or even that a control method exists. All it cares about is having an object that it can call **get\_x/y\_dir** on. When I switched the game to using Steam's own input system for controllers, I created a new class called **SteamInputControls**. No changes needed to be made to the player code, I just had to give the players **SteamInputControls** objects instead of **JoystickControls** ones.

Writing bad code is inevitable when you're starting out – even experienced programmers sometimes do it. You don't have to write everything perfectly the first time, but if you learn from my mistakes and get into good habits early, you'll make your life a lot easier. 🗣️

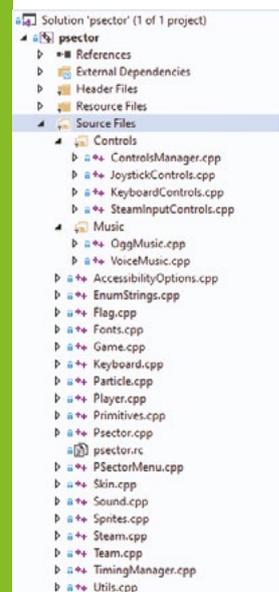
**Partition Sector** is out now on Steam.

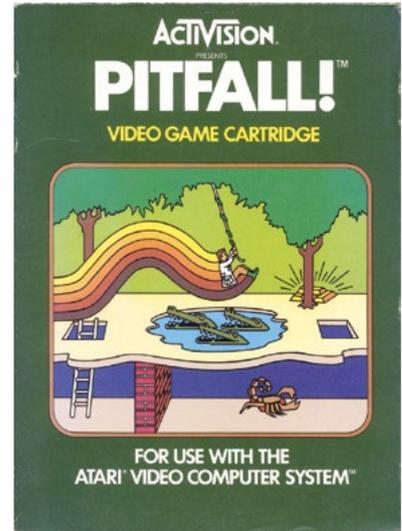
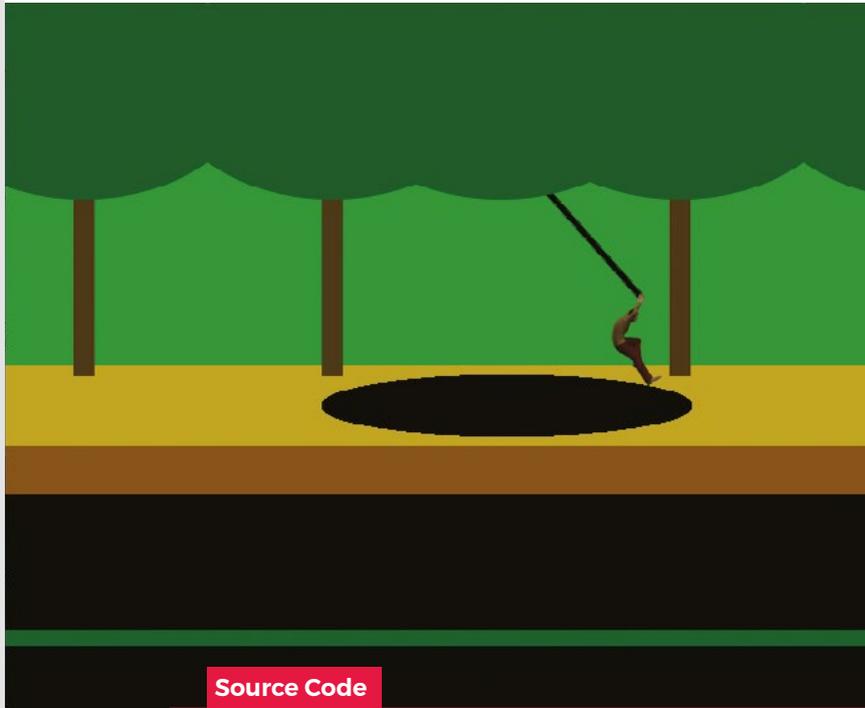
**“The 1999 version of the game consisted almost entirely of a single C++ file”**

object that it can call **get\_x/y\_dir** on. When I switched the game to using Steam's own input system for controllers,

◀ King of the Hill mode features a scoring zone with flashing disco tiles.

▼ A list of C++ code files in the new version of **Partition Sector**.





- ▲ Designed by David Crane, *Pitfall!* was released for the Atari 2600 and published by Activision in 1982.
- ◀ Our homage to the classic *Pitfall!* Atari game. Can you add some rolling logs and other hazards?

Source Code

# Swing into action with an homage to Pitfall!



AUTHOR  
MARK VANSTONE

Grab onto ropes and swing across chasms in our Python rendition of an Atari 2600 classic

**W**hether it was because of the design brilliance of the game itself or because *Raiders of the Lost Ark* had just hit the box office,

Pitfall Harry became a popular character on the Atari 2600 in 1982. His hazardous attempts to collect treasure struck a chord with eighties gamers, and saw *Pitfall!*, released by Activision, sell over four million copies. A sequel, *Pitfall II: The Lost Caverns* quickly followed the next year, and the game was ported to several other systems, even making its way to smartphones and tablets in the 21st century.

The game itself is a quest to find 32 items of treasure within a 20-minute time limit. There are a variety of hazards for Pitfall Harry to navigate around and over, including rolling logs, animals, and holes in the ground. Some of these holes can be

jumped over, but some are too wide and have a convenient rope swinging from a tree to aid our explorer in getting to the other side of the screen. Harry must jump towards the rope as it moves towards him and then hang on as it swings him over the pit, releasing his grip at the other end to land safely back on firm ground.

For this code sample, we'll concentrate on the rope swinging (and catching) mechanic. Using Pygame Zero, we can get our basic display set up quickly. In this case, we can split the background into three layers: the background, including the back of the pathway and the tree trunks, the treetops, and the front of the pathway. With these layers we can have a rope swinging with its pivot point behind the leaves of the trees, and, if Harry gets a jump wrong, it will look like he falls down the hole in the ground. The order in which we draw these

to the screen is background, rope, tree-tops, Harry, and finally the front of the pathway.

Now, let's get our rope swinging. We can create an Actor and anchor it to the centre and top of its bounding box. If we rotate it by changing the angle property of the Actor, then it will rotate at the top of the Actor rather than the mid-point. We can make the rope swing between -45 degrees and 45 degrees by increments of 1, but if we do this, we get a rather robotic sort of movement. To fix this, we add an 'easing' value which we can calculate using a square root to make the rope slow down as it reaches the extremes of the swing.

Our Harry character will need to be able to run backwards and forwards, so we'll need a few frames of animation. There are several ways of coding this, but for now, we can take the x coordinate and



## Swing when you're winning

Here's Mark's code snippet, which gets a swinging rope and a jumping adventurer running in Python. To get it working on your system, you'll need to install Pygame Zero – full instructions are available at [wfmag.cc/pgzero](http://wfmag.cc/pgzero).

```
# Pitfall!
import math

rope = Actor('rope', midtop=(400, 110), anchor=('center', 'top'))
harry = Actor('harry', (80, 290))
harry.attached = False
harry.jump = 0
harry.onground = True
swing = -1

def draw():
    screen.blit("background", (0, 0))
    rope.draw()
    screen.blit("trees", (0, 0))
    harry.draw()
    screen.blit("platform", (0, 335))
    if harry.x > 550 and harry.y < 300: screen.draw.text("You
made it over!", center=(400, 560), owidth=0.5, ocolor=(0, 0, 255),
color=(255, 255, 255), fontsize=40)

def update():
    global swing
    if rope.angle < -45:
        rope.angle = -45
        swing = 1
    if rope.angle > 45:
        rope.angle = 45
        swing = -1
    easing = (7-(math.sqrt(abs(rope.angle))))/3
    rope.angle += swing*easing
    oldx = harry.x
    harry.onground = False
    if (harry.y > 289 and harry.y < 293) or (harry.y > 468 and
harry.y < 471): harry.onground = True

    if harry.x > 260 and harry.x < 540 and harry.y > 290 and harry.y
< 470 : harry.onground = False
    if keyboard.right and (harry.onground == True or harry.jump > 0):
        harry.x += 2
        harry.image = "harry"+str(int((harry.x/20)%4))
    if keyboard.left and (harry.onground == True or harry.jump > 0):
        harry.x -= 2
        harry.image = "harry"+str(int((harry.x/20)%4))+ "r"
    if harry.jump > 0:
        harry.y -= 2
        harry.jump -= 1
        harry.image = "harry0"
    else:
        if harry.y < 290 and harry.jump == 0 and harry.attached ==
False:
            harry.y += 2
            elif harry.jump == 0 and harry.x > 255 and harry.x < 540 and
harry.y < 470:
                harry.y += 2

        if oldx == harry.x and harry.jump == 0 : harry.image = "harry"
        if harry.collidepoint (rope.left, rope.bottom) and rope.angle < 25:
            harry.attached = True
        if harry.attached == True:
            harry.image = "harryrope"
            harry.y = rope.bottom + 32
            harry.x = rope.x + (rope.angle * 2.7) - 12

def on_key_down(key):
    if key == keys.SPACE:
        if harry.y == 290 or harry.attached == True:
            harry.jump = 30
            harry.attached = False
        if harry.y > 450: harry.pos = (80, 290)
```

work out which frame to display as the x value changes. If we have four frames of running animation, then we would use the %4 operator and value on the x coordinate to give us animation frames of 0, 1, 2, and 3. We use these frames for running to the right, and if he's running to the left, we just mirror the images. We can check to see if Harry is on the ground or over the pit, and if he needs to be falling downward, we add to his y coordinate. If he's jumping (by pressing the **SPACE** bar), we reduce his y coordinate.

We now need to check if Harry has reached the rope, so after a collision, we

check to see if he's connected with it, and if he has, we mark him as attached and then move him with the end of the rope until the player presses the **SPACE** bar and he can jump off at the other side. If he's swung far enough, he should land safely and not fall down the pit. If he falls, then the player can have another go by pressing the **SPACE** bar to reset Harry back to the start.

That should get Pitfall Harry over one particular obstacle, but the original game had several other challenges to tackle – we'll leave you to add those for yourselves. 🐛



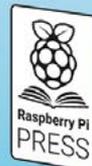
▲ In one of the earliest platformers, Pitfall Harry swings from the trees to avoid falling into deadly pits.

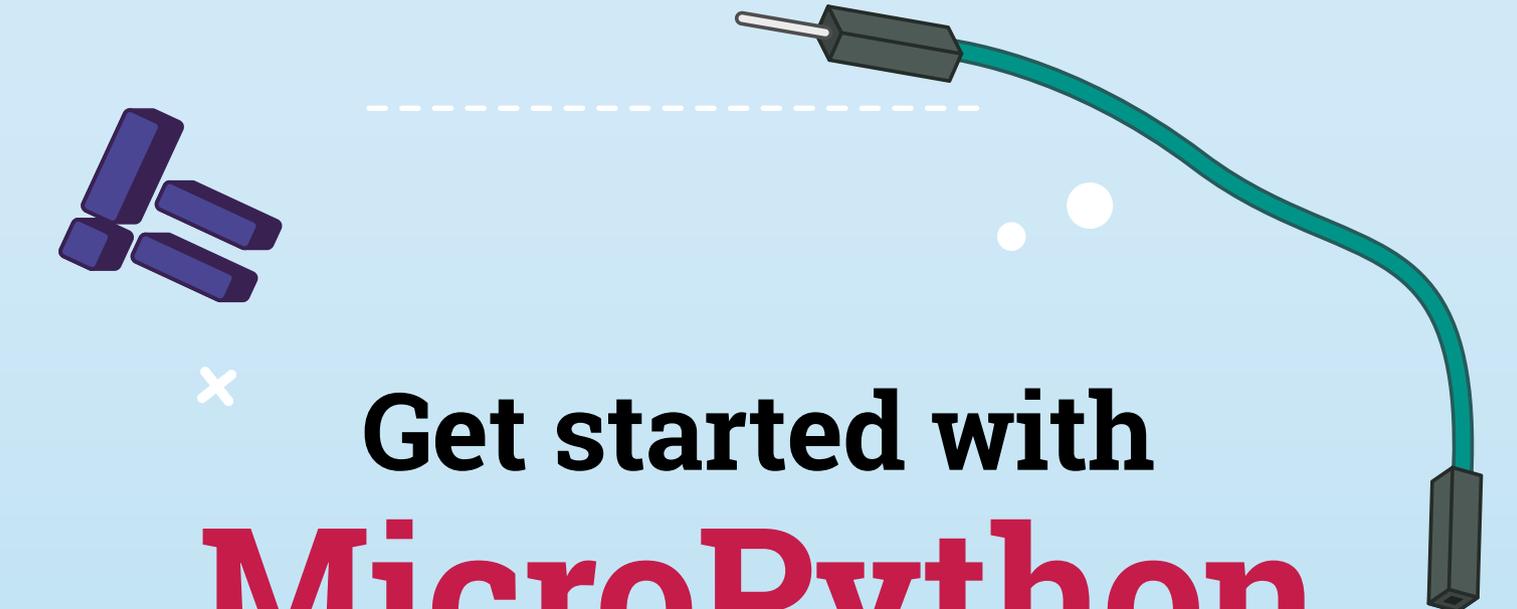
THE OFFICIAL RASPBERRY PI PICO GUIDE

# Get started with MicroPython on Raspberry Pi Pico



by Gareth Halfacree  
and Ben Everard





# Get started with MicroPython on Raspberry Pi Pico

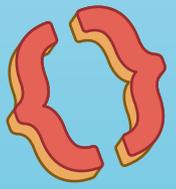


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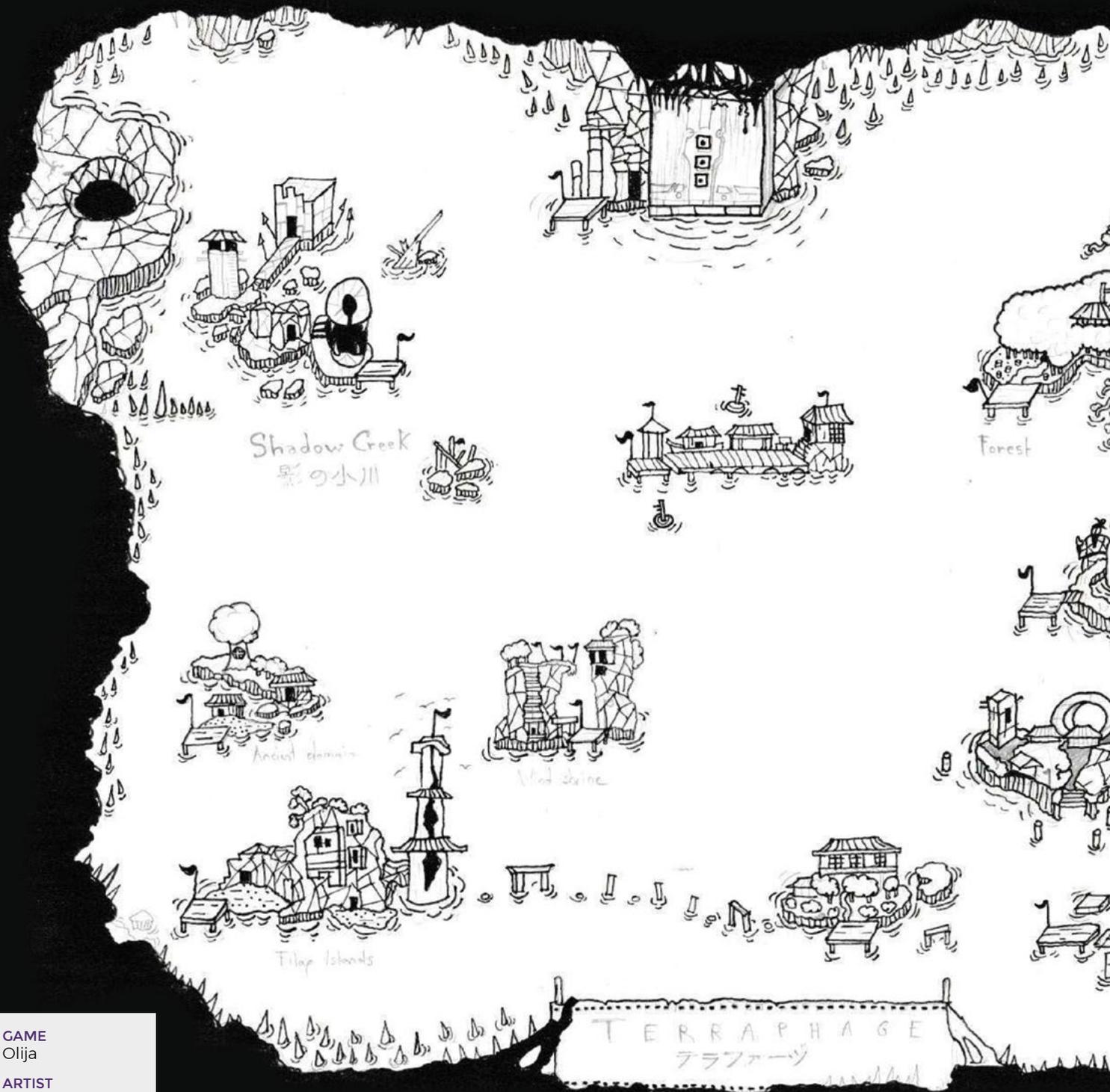
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# LEARNING THROUGH PLAY

Gaming's rising place in the classroom

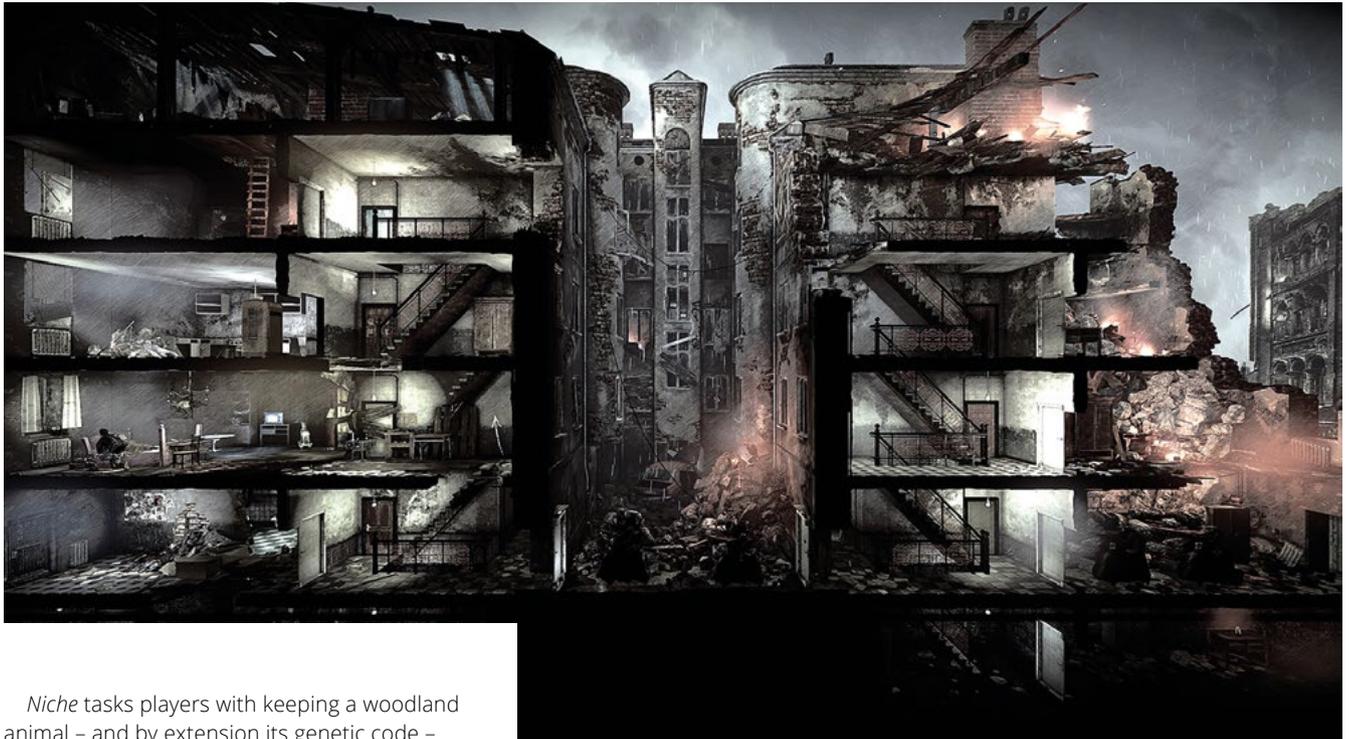
Games are being increasingly used in education. Here's how the medium's being used to teach everything from genetics to critical thinking

WRITTEN BY  
ANTHONY MCCLYNN

Since the release of *Minecraft: Education Edition* in 2016, video games have had an ever-growing presence in the classroom – and provided a handy tool for teachers of all age groups. Forget about iffy edutainment software on outdated school BBC Micros or PCs of yore: today, games, technology, and apps are being used to teach a wide array of subjects in classes and schools all around the world.

Following the success of *Minecraft*, several game studios have followed Mojang's lead in making specific versions of their titles for school use. One of these is *Stray Fawn Studio*, creator of the 'genetics survival game', *Niche*. "For a while, we were thinking about doing a proper educational licence, but then, in the end, we thought 'No, it should remain an entertainment game,'" says studio co-founder Philomena Schwab. "Otherwise it might take some of the fun out of it because you have to read through everything, and the game's designed so that you don't have to read through all the information. Then we decided to give it out to schools for free."





*Niche* tasks players with keeping a woodland animal – and by extension its genetic code – alive in an unforgiving wilderness. You must balance traits, strengthening what's best against the predators around you, and covering for your weak spots so that you don't get caught too easily. With a simple, easy-to-read UI and bright, clean art-style, *Niche* teaches without lecturing, turning biology into something students can interact with rather than simply read about.

### POWER OF CREATION

*Niche's* value in a classroom setting wasn't a happy accident. The team spent months looking into research on congenital traits and evolution, making sure their progression system was scientifically sound. They felt the subject matter was inherently interesting – they just needed to deliver it in the right way to entice players. "Genetics and heredity, in themselves, are an

interesting game mechanic," Schwab says. "So if you just combine that with a survival game, so you're punished and rewarded for making the right and wrong breeding decisions, I think it's just fun to look at two animals and think what might come out of it as a combination."

The studio's only real concern, she adds, was keeping player choice intact. "Sometimes, something would've been more representative – for example, with the sexual selection, we thought about maybe letting the animals decide who they want to mate with. But then we thought 'No, this is something that's more fun if the player can select it'. So the sexual selection is a very minimal version of how it is in the wild."

Player autonomy is one reason why many experts believe video games can be useful learning tools. Dr Matthew Barr is an author and lecturer at the University of Glasgow who, in a recent experiment on the subject, found that playing games had a positive effect on people's "soft skills" – communication, ethics, flexibility, and so forth. Two groups of college students were randomly chosen, and over the course of several weeks one clocked up 14 hours on a range of titles while the other didn't, and at the end, they all underwent a rudimentary ▶

▲ An entire UNESCO MGIEP curriculum was developed around *This War of Mine*, discussing issues like citizenship, personal values, and gender.

### SAVING THE WORLD

In 2014, UNESCO MGIEP put out an open invitation for game proposals on world peace, sustainable development, and global citizenship. Out of 104 entries, *World Rescue* by ZU Digital was eventually chosen. A narrative adventure about five heroes from different countries who must find ways of helping their community, the app teaches about issues such as drought, pollution, disease, and displacement. It's currently available on Android and iOS.

▼ Designers wanted to push players towards using their intuition and trial and error in *Borderlands 2*, minimising the weapon information that's readily available.



## Interface

Gaming's rising place in the classroom



▲ At first, *Niche's* animals were designed to look as though they were made from wood. But as the game's complexity grew, so did the amount of detail required.



▲ Dr Matthew Barr: author and lecturer at the University of Glasgow.

▼ Ubisoft has thus far released two Discovery Tour supplements for their *Assassin's Creed* series, which lets players explore the history of ancient Egypt and Greece.

psychological survey. The group that played games saw a significant increase in their soft skills over the one that hadn't, to a degree that surprised even Barr himself.

"I didn't expect to get as strong a result as I did," Barr explains. "It's not a massive study – it'd be great to do this with thousands of people. But the stats were actually remarkably strong."

Those tested played two hours of several well-known games, including *World of Warcraft* and *Portal*, and one hour of some smaller indie releases such as *Papers, Please* and *Gone Home*. The games were chosen for their reliance on the various types of intuition that Barr and his

associates were looking to highlight. They also generally reviewed well, with scores of 80 or above on Metacritic.

The selection of games was important, because the researchers wanted to demonstrate the enlightening effect the medium can have on players. "There was one young man, he was playing *Gone Home*, which is to some extent the story of a young girl's coming out," Barr recalls. "And he was, like, 'I'm not a lesbian'. But what he was getting at was he had never thought about what that would mean, to come out, to be in those shoes. And because you get to see some of the reactions to it if you read the stuff that's lying around the [in-game] house, you can really get into it."

### STRENGTH OF THE MIND

Just as Philomena Schwab believes freedom of choice makes for better video games, Barr argues that games can teach a range of qualities through their design, such as critical thinking, without players even noticing. "[The creators] set out to embed these things because they're actually what make the game fun," Barr says, referring to an interview he conducted with the lead designer of *Borderlands 2*. "He deliberately made it ambiguous about what weapon was better than what. He said there was a discussion in the team – they wanted a 'damage per second' or some stat when they picked up the gun, but he





^ **World Rescue** is a globe-encompassing adventure about culture and nationality, and the one non-commercial game used in UNESCO's digital learning.

resisted that. He wanted players to exert some level of critical thinking by looking at the wider picture; all the various attributes they've got and their personal style, and the circumstances they're in. That makes it a more interesting game, and more interesting by exercising their critical thinking – it's built-in."

Halfway around the world, the thesis of Dr Barr's studies is echoed in UNESCO's 'Games for Learning' program in New Delhi, India. There, a team creates games and game-based courses that focus on social and emotional learning. Professor Anantha Duraiappah, director at the Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP), explains how it all works. "Drawing from the research on pedagogy, and some other basic elements of learning, like motivation, experimenting, emotion, experiential feedback, the whole notion of failing but without shame, the digital medium allows a lot of that," Duraiappah tells us. "We have a number of products on the platform. One's called Global Citizenship, which is about six modules on contemporary issues like violence, extremism,

**"He wanted players to exert some level of critical thinking by looking at the wider picture"**

nationalism, migration, but in a storytelling way, which the digital medium lends itself to."

Focusing primarily on e-learning with a side order of classroom work, the institute teaches through four games: *GRIS*, *Florence*, *This War of Mine*, and *Assassin's Creed*, with the aim of broaching difficult subjects in a more accessible and collaborative manner. One lesson plan, called Digital Intercultural Exchange, teaches students from an array of countries – including South Africa, Norway, USA, Malaysia, and India – about migration

and related subjects. The idea is that playing games together creates a deeper exchange of viewpoints that crosses country, culture, and other boundaries to meaningful dialogue.

"You don't have a linear approach to learning – you can jump from one game to another and then back to where you left off," Duraiappah says. "Much of the research is saying that learning in a linear process is really an outdated concept and not in line with the neurobiological development and maturation of the brain." ➔



Between actual stats and all the different ways an animal can evolve, *Niche* contains millions of patterns all based on the choices a player makes throughout the game. Considering the unpredictable nature of the environment, and the distinct playstyles you can adopt, that's a lot of decisions. Philomena Schwab's unsure of an actual number, but a group of players are trying to catalogue every single variation they encounter in the hopes of maybe, one day, cultivating a complete set.



### PLAYING WITH POWER

Many of Dr Matthew Barr's findings on games as learning tools are included in his new book, *Graduate Skills and Game-Based Learning: Using Video Games for Employability in Higher Education*. It contains further academic insight as well as interviews with a number of games industry professionals, including Daniel Bryner and Jeff Wajcs, level designers on *Lara Croft and the Guardian of Light*; Mike Ambinder, principal experimental psychologist at Valve; and Karla Zimonja, director on *Gone Home*.

### BUILDING THE FUTURE

As Stray Fawn, Ubisoft, and other studios encourage learning by giving free copies of their games to schools, other developers place their focus elsewhere. Sheffield-based publishing house Twinkl offers an array of digital resources on tablet, PC, and mobile for educators of early learning up to pre-teens, developing their products with a student-teacher relationship in mind.

**“It’s based on the teaching approach where you use spaghetti and dried marshmallows”**

Augmented reality, they’ve found, can be a huge benefit in helping learners visualise a problem and its solution, and with rolling updates, a game or app has much greater flexibility than a traditional textbook. “We made an app called ARchitect,” explains Robin Williams, Twinkl’s former head of emerging technology. “It’s based on the teaching approach where you use spaghetti and dried

marshmallows to construct towers and shapes. We managed to put real-world physics into it. We could use different weights, so we got wood blocks in there, and stone blocks and ice. The teachers said it’d be great if you could put some balloons in, so we’ve added that function where you can start to suspend and build construction.

By adding in those bits, teachers were saying they could teach fractions, they could talk about percentages. Their input, from what was

a fairly simple concept, took it out to lots of different learning objectives.”

All of Twinkl’s AR apps are free, with paid memberships available for greater access to resources and support. The company maintains an ‘agnostic’ position on new technology, wherein they develop based on what’s currently most widely used and maximise compatibility from there. Most of all, the firm wants its work to connect to all the avenues of a child’s tuition. “We want children to find these [apps] with their parents, and take the ideas back into the class so



^ Since coming out in 2013, *Gone Home* has been widely regarded as a landmark that showcases the possibilities in gaming.





Regular updates from educators and organisations like the World Wildlife Fund have made *Minecraft: Education Edition* a robust resource for educators.

that teachers can then understand and download it," Williams says. "At the same time, we want to keep teachers up to date on what's going off in the industry and the technology and what they can use it for, and take that into the class."

### FINDING THE KEY

Despite the success of *Twinkl*, *Niche*, and projects like them, gaming as a whole is still met with a hint of scepticism within the wider teaching community. Barr talks of peers in other universities and schools having to engage in 'skunkworks operations' to do analysis akin to his. Duraiappah, on the other hand, has

been advocating for the use of games to teach mindfulness and emotional intelligence. Though in the early stages as a framework at UNESCO, Duraiappah is particularly passionate about the idea, given India's own high rates of depression and suicide, especially among teenagers. "I just got back from Canada, where I was telling them about some of our programs, and the one that really got them excited was our socio-emotional learning programs for anxiety and depression," he says. "They jumped on that, because they're facing those issues."

Matthew Barr's confident that *Minecraft* is leading the way in making games a more acceptable sight in classrooms, but what the long-term outcome will be is still unknown. "[*Minecraft*] is kind of ubiquitous," he says. "It's the thing that, even my boss at the university who's not a games guy at all, he kind of accepts that *Minecraft* has a role to play in this stuff. It could be the back door for this to start to normalise. Now it's got Microsoft putting money behind the educational version. It's creative, it's got programming in it, it does so much, and it's kind of innocuous. I just can't think of what comes after that. I don't know what doors that's opened yet. We'll have to wait and see." 🐦



Stray Fawn co-founder and *Niche* designer, Philomena Schwab.

Professor Anantha Duraiappah, the director of UNESCO MGIEP in New Delhi, India.



Players can encounter all manner of biomes when playing *Niche*, and will have to endure extreme weather and other harsh conditions to stay alive.

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▲ The writings of Philip K. Dick and the unique art of futurist Syd Mead all went into *Nascent Prophecy* in some form, Caplin tells us.

▼ To keep costs low, it's Caplin's voice you'll hear through the game's first chapter.

# Interactive

## Nascent Prophecy

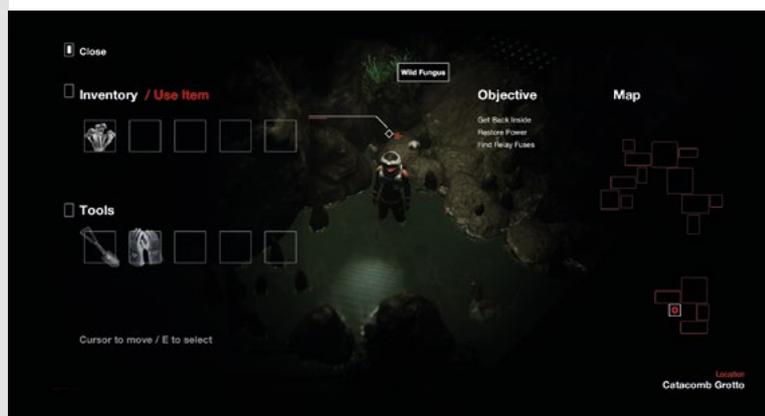
Designer Jon Caplin takes us inside his isometric sci-fi thriller

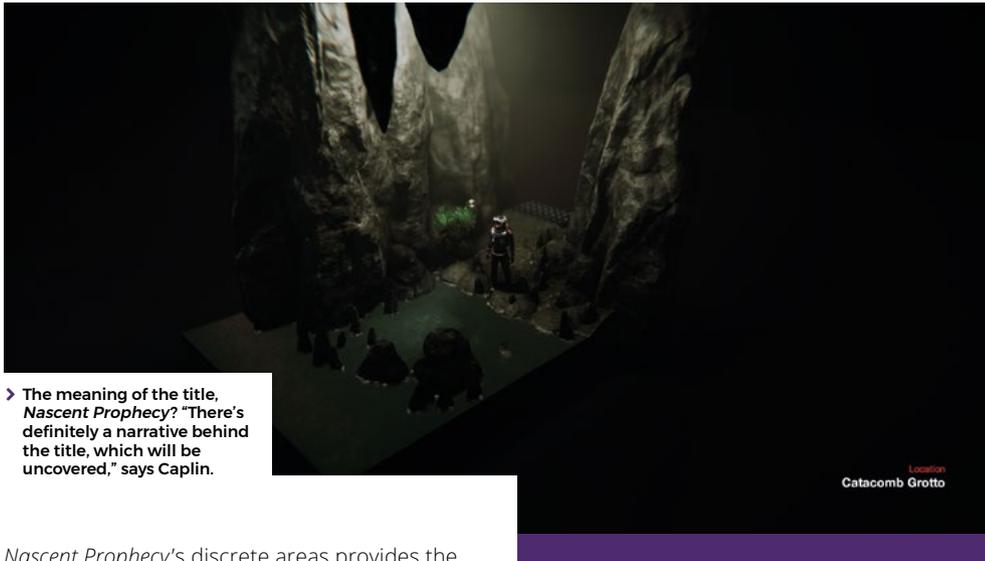
So much of indie game development is about doing less with more. Case in point: *Nascent Prophecy*, a darkly atmospheric sci-fi adventure that looks so polished and so detailed, you'd hardly think it was the product of just one designer. With cunning use of sound and lighting, though, British graphic designer and developer Jon Caplin has constructed a tense, claustrophobic off-world thriller: you control Sam, who wakes up on the muddy bank of an alien planet with no idea why the nearby outpost, called Spire, has suddenly gone into lockdown.

Investigating further, Sam realises something's gone awry: there are dead bodies strewn around, a malfunctioning robot on the war-path, while doors into the base are sealed shut.

Drawing on isometric adventure games from the past – most prominently, Amiga-era classic, *Cadaver* – *Nascent Prophecy* requires you to scour the landscape for items, and figure out how each will help you progress. The choice of perspective is a brilliant one: through a clever use of lighting and depth-of-field effects, Caplin creates the illusion of a much bigger, dangerous alien world. Again, he found ways of doing less with more here: by taking pre-existing 3D models and 'kitbashing' them into new forms, he was able to quickly build-up his alien planet and eerily still base. "I was thinking back to the kitbashing videos I'd been watching that involve taking seemingly random pieces of model kits and sticking them together to create new models," Caplin tells us. "I took the same approach in *Nascent Prophecy*. Using bought and downloaded models, I trimmed, edited, merged, and retextured them to create new models, which allowed me to rapidly build-up environments and scenes. By doing this and seeing results quickly, it also helps to develop story arcs and think up puzzle designs."

Caplin's interest in physical model kits also informed the use of focus: exploring each of





► The meaning of the title, *Nascent Prophecy*? “There’s definitely a narrative behind the title, which will be uncovered,” says Caplin.

*Nascent Prophecy*’s discrete areas provides the feeling of looking down on a tiny diorama. “As a kid, I used to make Airfix models, and more recently I found myself watching YouTube tutorial videos on painting miniatures and kit building,” he says. “The depth of field serves to heighten that sense of miniature models.”

Far from making the game’s world feel implausible, the depth-of-field effect adds to its claustrophobia – of a dangerous planet where you’re never sure what the next screen will bring. Caplin’s use of ambient sound adds to this – it’s a tactic that he says helps the player “fill in the gaps” without stretching the game’s budget. “Sound is so important in an experience, and something I love,” says Caplin. “At the beginning of the game you start

in an area that has a muddy shore and reeds. Creating the VFX of the water was out of my reach, but by adding the sound of the water bubbling and wind blowing with sand being kicked up, your brain fills in all the gaps. The audio is working as hard as the visuals, in some cases, more so.”

## BACK TO THE FUTURE

Not that *Nascent Prophecy* was always an isometric game, or even a sci-fi story: early on in its development, the project began as a free-roaming adventure, with a warrior in 18th-century garb exploring a craggy desert environment. That desert soon became an alien planet, and when Caplin hit a “slump” with his over-the-shoulder camera viewpoint, he moved over to an isometric perspective he’d already experimented with in an earlier project. “Changing the camera and slicing up the open world into rooms, there was a eureka moment.

*Nascent Prophecy* was born, with its new room-by-room challenges and inventory.”

Caplin’s background as a graphic designer, as well as a game developer, allowed him to come up with a consistent art direction and tone for *Nascent Prophecy*, while using Unity as a platform allowed him to come up with atmospheric lighting “straight out of the box”. “Lighting not only sets mood – but it also covers up any modelling misgivings,” Caplin jokes. “I use a classic three-point lighting setup, and these core lights are fixed to a lighting rig that frames

each room as you move between them. Other tools also allow this rig to be offset to help create particular looks if rooms require it.”

Caplin spent over a year creating *Nascent Prophecy*’s first chapter, which you can download for free at [wfmag.cc/nascent](http://wfmag.cc/nascent). But with the important groundwork all done, he says the rest of the saga, which will unfold over four to five chapters, released episodically, will be completed far more quickly. This is just as well because, like the game’s luckless protagonist, we’re keen to find out what dreadful secrets are lurking inside the Spire. “It’s now down to filling in all the details from gameplay, puzzle design, and narrative,” Caplin says. “The first chapter starts on the outskirts of Spire’s complex and tasks you with getting back in as the outpost has mysteriously gone into lockdown. Finding the answer to why this has happened will become the driving narrative. Who were they keeping out? Or in, even?”

## POINTS OF VIEW

One of the most pleasing things about *Nascent Prophecy* is the way it uses its isometric perspective to create intimate, self-contained areas – a design idea common in the eighties and nineties, but seen less often today, as Caplin himself notes. “I think Supergiant games are championing an isometric [perspective] in their games – most recently in the excellent *Hades* – but I think the big difference is older games would be very ‘room’-based,” he says. “They would have black space surrounding and hugging the scene so that your focus was very much on what was there in front of you. Today’s games that use an isometric view generally exploit full screen, full bleed, and gameplay areas that scroll with the player, which in turn gives you a very different feel.”

**“The audio is working as hard as the visuals, in some cases, more so”**

▼ An early build of *Nascent Prophecy*, before the isometric perspective came in.





# Interactive

## Skycadia

Developer Ian Snyder channels the spirit of *Starwing* in his colourful arcade combat game

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If, like us, you think the world needs more arcade flying games like *Starwing* and *Crimson Skies*, then take a look at *Skycadia*. It wears its affection for those earlier titles proudly, with its 320×240 resolution even echoing that of *Starwing*'s host platform, the Super Nintendo. Earlier in its life, however, *Skycadia* was a much bigger project, with a world map and even a fishing minigame – there's a clue to its origins in its title, which is a nod to the aerial-themed action-RPG, *Skies of Arcadia*. "The earliest idea I had for *Skycadia* was a mix of the depth of *Mount & Blade* with the arcade

gameplay of *Star Fox*," explains Nebraska-based developer Ian Snyder, referring to *Starwing*'s title outside Europe. "After creating a simple prototype flying around shooting enemies with colourful spacey visuals, I felt I was on to something interesting. I started adding things to do between combat, navigating a world map with item shops and enemies, but after playtesting, it was clear that the real fun was the flying and shooting."

From just a few minutes in *Skycadia*'s company, it's clear that Snyder's nailed the speed and responsive controls an aerial combat game needs – if anything, it feels more like our memories of *Starwing* rather than the cold reality, with *Skycadia* moving at a far smoother frame rate than the Super Nintendo could manage back in 1993. Before you know it, the skies are swarming with insectoid enemies, while armoured motherships hover in the distance. Thankfully, your craft is nimble enough to dodge all but the heaviest barrages of enemy fire – though if you want a chance of stemming the flow of the smaller enemies buzzing around, you'll have to take out those motherships. This last bit could be a nod, we thought, to the structure of Sega's classic *Fantasy Zone*. "Absolutely!" Snyder says when we ask about the possible influence of that 2D shooter series.



^ *Skycadia* looked quite different earlier on in its development, with hand-crafted planes and puppets.



◀ Soar through the skies, gun down enemies, and collect cash bounties. It's a simple yet satisfying game loop.

"I teach game development full-time, and my students learn about the arcade classics and their influence on games even today. When I introduce students to prototyping games, we usually create a simple version of *Asteroids*, and then see how that can be modified into racers and all sorts of stuff."

Snyder's 15-plus years as a game designer explain how he's managed to create such a slick action game: before he became a full-time game design teacher, he worked as a 3D artist and developer at such studios as Gameloft Montreal and NCSOFT in California. And since he's well-versed in Unity, he was soon

**"It was a dream come true to be developing my own game for a major console"**

able to get that early prototype up and running. Making *Skycadia* in his spare time, however, meant a development of around four years. "It's mostly my *very* patient wife and kids that make it possible," he says. "Typically, I just try to make slow and steady progress on *Skycadia* and other personal projects, so that usually looks like 30 minutes to an hour each day, and then longer sprints when I have some free time."

It wasn't until the game was almost finished that Snyder began to think about releasing *Skycadia* commercially, partly thanks to the fresh impetus from one of Snyder's former students, McGuire Leiting, who worked on the game's art ("McGuire developed the distinct visual style... he also kept me on track to finally finish the project!"). It was around here that Snyder took *Skycadia* to the Game Developers Conference in San Francisco, and the project got

its biggest boost: interest from Microsoft. "I was nervous, but they were encouraging and liked the concept, so they gave me the go-ahead to develop *Skycadia* for Xbox One. It was a dream come true to be developing my own game for a major console!"

Porting the game to consoles would, however, provide Snyder with his biggest challenge so far. "The biggest difficulty has been handling how the console manages users and play sessions – who's playing the game, who's using which

controller, making sure the game responds to a player signing out, etc," he says. "It sounds simple, but there's lots of weird edge cases

that all have to be accounted for or the game won't work right – and won't pass certification."

With *Skycadia* out now on Steam and Xbox One, though, Snyder's ready to start thinking about the next steps for the game: a Nintendo Switch port is in the works, and there are also plans to add a split-screen co-op mode that he was forced to drop earlier in development. "To get it finished, I knew I had to cut it down to the core of what made it fun to play," Snyder says, "so I removed lots of features like picking up and swapping items, a world map, split-screen co-op, allies flying in formation with you, and more. Some of these will show up as free updates, especially the split-screen co-op, but some of them will be saved for future titles. I'm also officially announcing a Nintendo Switch port. I just have to find the time to get it ported, so I hope to have that in the coming months." ❧



**THE ART OF EXPLOSIONS**

One aspect that caught our eye in *Skycadia* is the quality of its explosions: big, pixelated bursts of orange that make gunning enemy craft out of the sky a satisfying pastime. Surprisingly, though, Snyder reveals that the explosion was something he purchased from the Unity Asset Store. But by resizing it to give it a "pixel art feel", Snyder made the effect his own – punchy and arcade-like, not unlike those in *Metal Slug*, a game he singles out as a game with truly great explosions. "The *Metal Slug* series has some of the best explosion effects in video games. If you take a look at their explosion animation frames, some of them use a single frame of a black circle, followed by a single frame of white, then the actual fiery explosion. That adds a lot of impact – you can almost hear it."

# Online Diary

## GITTIN' GUD

Oh no, it's four years old as of this month: heading back for some PlayerUnknown's Battlegrounds

WRITTEN BY IAN 'VEGAN CHKN DINNER' DRANSFIELD

**T**he plan was, for the first time, to go back to a game already covered before on these pages – to live up to the whole premise of actually trying to 'git gud' at things through repeat efforts. But: the world happened. People are hard to corral, especially when you need three of them at once, and the good intentions fell apart when it became clear *GTA Online's* heists would have to wait a while. And so it was I turned back to the warm embrace of an old friend in the shape of *PlayerUnknown's Battlegrounds*. *PUBG*. Pubby Gee. The ollllll' royale with battle. The big kahuna. The game I haven't actually played in about 18 months. Hmm.

*PUBG* is the origin story of the battle royale genre – no, it didn't invent it, but it popularised it to a ridiculous degree. 100 people drop onto an

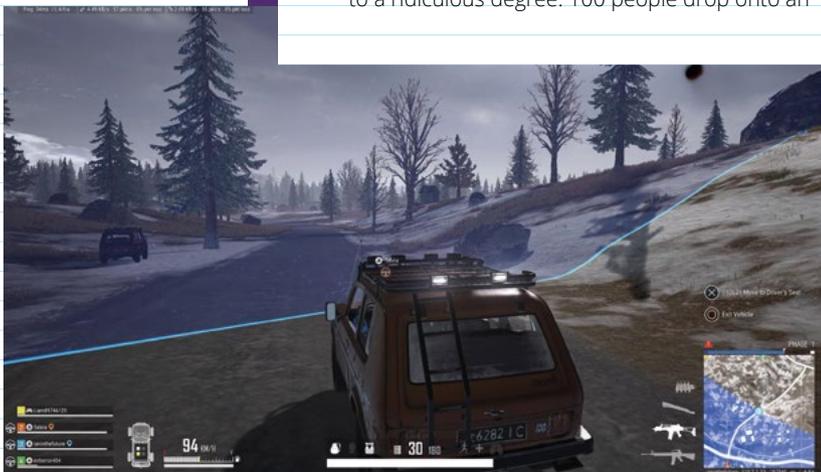
island, one (team or individual) leaves as winner. You start with nothing, you find weapons and equipment on the ground. And the play area is ever-shrinking. That's all there is to the entire concept, and that's really the main reason it's been so massively ripped off by *Fortnite*, *Apex Legends*, *COD: Warzone*, and everything else.

Leaping back into the world of *PUBG* is like a... well, not a warm hug. It's like an awkward-but-friendly hug, the type you might get from an old workmate who you got on with well enough but haven't actually seen or spoken to in five years. Remember hugs? Nah, me neither. I jump straight into a squad-based match, teaming up with three random players and heading into the unknown (mainly because I don't know any maps beyond the original one). We search house-to-house, keeping tabs on any potential movement and listening out for footsteps, picking our way through the caches of weapons and other equipment, making our way... and I've been knocked out. By my own bloody teammate, obviously a bit twitchy on the old trigger finger. He revives me with an apology, and we carry on.

I get it, though. *PUBG* is capable of being tense; when you're skittish to begin with, someone suddenly rushing around a corner might well set off your blast-'em response. Even if squadmates do have massive names and numbers above their heads, visible at all times at any distance and through any obstacles. *But hey*.

That first round results in a seventh-place finish – solid for a 50-team start – but no kills on my part; not even a shot fired. The second match is

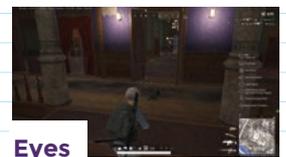
▼ Outrunning the blue wall of doom shouldn't be something you end up doing all the time, but it is undoubtedly fun.





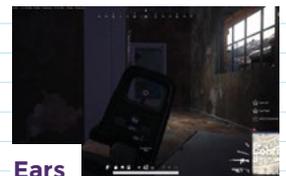
◀ We didn't win, but we bonded over the inadequacy of a two-space buggy with a three-person team.

## Old dog, old tips



### Eyes

Three things: look for any movement, shiny things inside houses and structures, and doors that have been opened. What you're seeing is enemies, weapons/equipment, and more enemies, in that order.



### Ears

PUBG is a surprisingly quiet game, so lends itself to the use of headphones. You'll be able to gauge where gunshots are coming from, as well as hear footsteps, vehicles, and doors opening/closing in the vicinity.



### Legs

Most of the game's maps are big, so don't feel limited to the main (ex-)population centres. Jump immediately or very late and stick to the outskirts of the environment if you don't want head-on clashes.

a much poorer effort, our jump into a small town meaning plenty of other players are in the vicinity from the get-go, and our survival is whatever the word for 'anti-guaranteed' is. I then pivot to solo games, trying to go back to how I used to play things on PC back in 2017 – staying absolutely on the outskirts and avoiding population centres as much as possible lest I encounter another human. Also: in the game! Ho ho.

Again, a half-decent finish, and again, an entire round without a shot fired in anger. Just a couple by accident when trying to use an energy drink. It might feel different

– old-fashioned, in a way, and not quite as thrilling as it once was – and I can't quite put my finger on it. I bag a few kills; it seems a bit too easy. I have to check something, and there it is: the game is heavily populated by bots these days, introduced both to help ease newer players into things, and to make sure there's a regular stream of games to get into... but simultaneously making it so that out of 100 players, you often end up with 80-plus of them being AI-controlled. That's... not great.

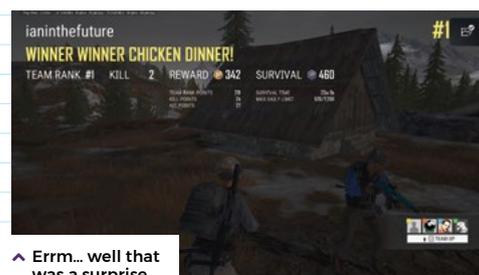
So naturally, the fifth match saw me take down six enemies – two kills, four assists – and the tension had all but melted away knowing most of the time I wasn't facing off against real people. *PUBG* plods along, maintaining popularity but blighted by cheaters and those automated fake people littering the place, but there's still something about the game that's *worth* it. It's still

tense and exciting, considered in its pace and able to escalate massively in the blink of an eye.

It doesn't feel as fresh anymore – in fact, *PUBG* feels outright clunky at times, with navigation particularly sluggish. Mantling? Forget about it: you'll be dead before you've got a leg over. It's now at the point where it's plain to see all the *other* battle royales have mined the good ideas from the OG and pumped the overall

experience(s) up on their own games, so *PUBG* does have a staleness to it. But, being a fundamentally stale person, I don't mind all that much. We bagged a chicken dinner with relative ease just when I was planning to switch off for the evening, and there was a familiar pang of joy that came with it. It might not be next month – it might not be for a while – but *PUBG* will likely be back on these pages at some point. For now, though, it's back to trying to set up a heist. 🍷

**“It's still tense and exciting, still considered in its pace”**



^ Errm... well that was a surprise.

## Developer Profile

# Curve Digital

In a little over 15 years, the London-based developer and publisher has grown into one of the most indie-friendly companies in the UK. Ryan finds out more



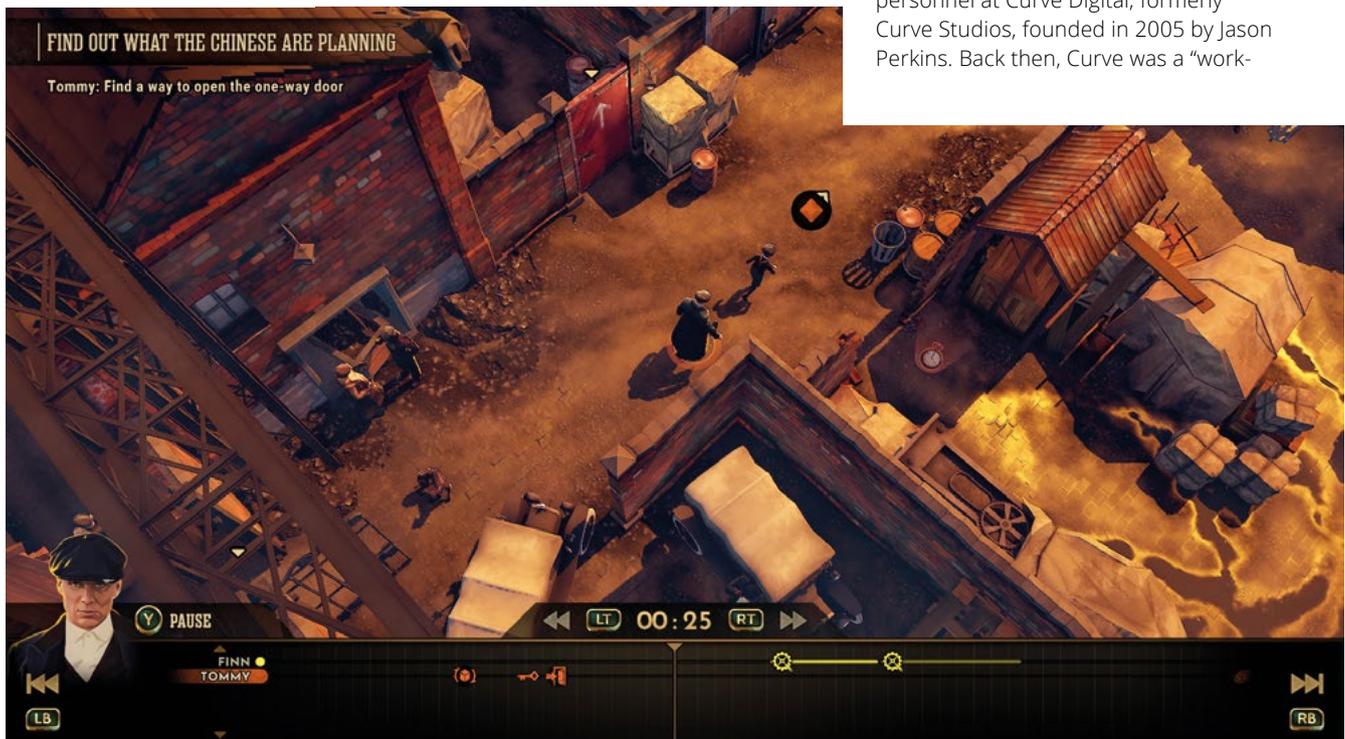
In 2016, a tiny game from Lithuania became an unexpected indie darling. A physics-based puzzler about an endearingly frail character's attempts to climb, leap, and bash through hazard-filled stages, *Human: Fall Flat* evidently captured gamers' imaginations – in the years since its release, the game's sold over five million copies across its various platforms. Its success not only put the solo developer behind it on the map – take a bow, Tomas Sakalauskas – but also

raised the profile of the British publisher that helped bring it to the masses. "*Human: Fall Flat* is really the game that propelled Curve into the stratosphere," enthuses Simon Byron, the garrulous publishing director at London's Curve Digital. "It's done phenomenally well globally since we released it in 2016. And every year, it gets bigger and bigger in terms of units sold and revenue generated, so it's really exciting."

## PORT OF CALL

Byron's one of the longer-serving personnel at Curve Digital, formerly Curve Studios, founded in 2005 by Jason Perkins. Back then, Curve was a "work-

▼ *Peaky Blinders: Mastermind* didn't actually start out as a licensed game, which might partly explain why it's so dang good.





▲ One of Curve's big games for 2021 is *The Ascent*, a gorgeous-looking cyberpunk action-RPG from Sweden.

for-hire" outfit, with its early projects including development on the hit *Buzz!* series of quiz games, as well as original titles like *Explodemon* and *Fluidity*. According to Byron, Curve "accidentally" fell into publishing when Sony began casting about for new titles it could market for its then-new PlayStation Vita handheld. "Can you imagine that?" Byron marvels. "A console that needed more content. So through conversations [with Sony], we said, 'Look, you know, we can find some titles to bring across to Vita. We'll help you get them onto the console.' And so Curve accidentally became a publisher. [We] went out and

**"We found games that had been successful on Steam, and made by small teams"**



▲ Publishing director, Simon Byron.

found games that had been successful on Steam, that had typically been created by very small teams, and often part-time."

The early 2010s was a rather different era for game development; the likes of Unity and Unreal Engine hadn't yet broken through, which meant that smaller indie teams working on tight budgets didn't always have the time, energy, or finances to port their games to other platforms – which is where Curve could step in. "Often these small developers had spent so long working on the PC version of a game that the thought of bringing it to additional consoles was just slightly too much," Byron tells us. "So Curve found titles like *Thomas Was Alone*, *Lone Survivor*, *The Swapper*, *Proteus* – games that had been really successful on Steam – and ported them internally, using our own engine at the time, called Nucleus. Then we were porting them to formats like PS3, Xbox, Wii U, etc etc. That went really well for the first range of titles, so it was those games, plus an original game that Curve developed, *Stealth Bastard*." ➔

## CASE STUDY: THE ASCENT

Another release for Curve in 2021, *The Ascent* is a stunning-looking sci-fi action-RPG created by the bantam-sized Swedish indie developer, Neon Giant. "It doesn't say 'eleven [person] team' to me," observes Curve's VP of development, Marcus Fielding. "It says, 'My God, is that from a studio of 60 – and are they using outsourced art?'"

For a game like *The Ascent*, Fielding adds, Curve steps in to help with things like QA testing and other technical areas, which gives Neon Giant more space to work on the creative aspects of development. "[Neon Giant] have a very wide ambition for that game, and what we can do is [provide] feedback that allows them to focus on parts of the game that are important. QA processes are essential for a game like this. It's a very challenging game, but where we've helped a lot is that we don't micromanage – we allow them to work on their own creative [ideas], but we can certainly help on steering priorities and help with first-party relationships, so that's been our core strength. But how eleven people do that game and make it look like that is tremendous."



▲ Hailing from Lithuania, physics-based action puzzler *Human: Fall Flat* was a defining success for Curve Digital.

▼ Ben Payne, vice president of global marketing.



In January 2016, Curve was acquired by digital content firm the Catalis Group, bringing it under the same company banner as Testronic, which specialises in QA testing, and Surrey-based game developer Kuju. By this point, Curve was in a position where it had a little money to invest in upcoming indie games, Byron explains. “Curve handling ports actually stopped being as relevant as it was in the early days. Actually, devs were looking for funding, which at the time we were unable to give. But then in very early 2016, we were acquired by the Catalis Group, and that gave us some small sums of money that we were able to start investing in original titles. But prior to that, if anybody asked me for any funding, I’d look at my shoes, make my excuses, and leave. But after 2016, we had little bits of money that we were able to invest in games from other studios. And that’s really where the company [started] growing fast.”

## AHEAD OF THE CURVE

Over the past five years, Curve has flourished into one of the UK’s foremost indie-friendly publishers, having successfully brought the likes of *Bomber Crew*, *For the King*, and *Velocity 2X* out for PCs and consoles. At the same time, however, the barrier to entry for new developers has only fallen – as regular readers of this magazine will know, it’s now easier than ever to make a game and put it online. So what role does a traditional publisher play in a climate where it’s quite possible to put a game on Steam or itch.io by yourself? “As publisher, I think we bring comfort to an indie developer that we actually know what we’re doing,” argues Marcus Fielding, Curve’s vice president of development. “We know the challenges, and we’re with [the developers] every step of the way. At every milestone, we’re helping you go through quality control. We also have Testronic, which



has 1600 QA staff, that we can build on and specialise with our multiplayer games. So that's important to me – that Curve understands development processes, and nurtures the developer from milestone one to shipping."

For Ben Payne, Curve's vice president of global marketing, a publisher like Curve can take some of the weight off an indie developer's shoulders, allowing them to concentrate on the creative side of game development rather than publicity or, say, the vagaries of getting a game on the Nintendo eShop. "It's the muscle that Curve delivers on the publishing side – it allows the developer to focus on developing, which is what they love doing," Payne tells us. "We can help them with their storefronts and their submissions and their trailer creation and their game capture and their content creator relationships and their community conversations... all that stuff is a weight off their mind, and allows everybody to focus on their own expertise."

### CUTTING THROUGH

Curve's years of experience as a developer and publisher also means it knows a thing or two about getting the timing of an indie release just right – an important consideration, given the sheer volume of games being released each month. "I think with timing, it's

often about having the confidence to be bold and move the timing if it feels right," Byron says. "Often, you can become obsessed with dates. So, looking at our titles, we generally try to publish all of our games by the end of October, because the triple-A market

starts kicking in from FIFA's release in September. We try and get a lot of stuff out then. But actually, it's not necessarily about whether the date's

right, but is everything in place for it to be successful? Really, publishing on PC and consoles isn't quite as sophisticated as it is on mobile, where you can get an awful lot of data about what people are doing. So we grab onto what we're able to see, and that's basically store traffic and wish lists. Wish lists don't mean anything per se, but they are an indication as to whether you're ➔

**"If anybody asked for any funding, I'd look at my shoes, make my excuses, and leave"**

### CASE STUDY: PEAKY BLINDERS

One of Curve Digital's big 2020 successes was *Peaky Blinders: Mastermind* – an adventure-puzzler based on the TV series of the same name. It was far from just another dull licensed tie-in – and that's partly because its design was conceived long before it was connected to the television series. Instead, it began as *Sync* – an idea that developer FuturLab pitched to Curve Digital some three years earlier. "It was an action game in which you played four characters, each of which had a unique skill," Byron explains. "It was side-on, and you basically had to move a character into position, rewind, and then move another character as the [previous] character was doing what you just played. It was really, really smart."

Curve didn't sign *Sync* up right away, and the project lay dormant until the *Peaky Blinders* licence emerged. "We looked at the licence, and then we put a request for proposals out to a number of studios, and said, 'If we gave you *Peaky Blinders* to make a game, what would you do with it?' James [Marsden] at FuturLab called me up and he said, 'You know that idea that you liked? It's perfect for *Peaky Blinders*, because in the show, Tommy's the mastermind. He's the engineer of everything, it's all about his plans and what's going on his head, and actually that time rewind mechanic is hugely appropriate here. Would you mind if we pitched that back?' I said, 'Absolutely.' It's what we ended up with. Licensed games often don't have the best reputation, but it's a game idea that we loved, which is appropriate for the licence. It's two things that could potentially have existed at different times, that have come together perfectly and actually created a really good game."





▲ Marcus Fielding, vice president of development.

cutting through. It's having that market awareness and expertise."

As Wireframe was talking to Curve Digital in late 2020, *Cyberpunk 2077* had just been released, ensuring that any indie game coming out at the same time would have one of the most anticipated titles of the year to contend with. It's something Curve would definitely try to avoid, Byron says. "I've seen games coming out today and yesterday. I'm like, 'Why would you do that?'"

*Cyberpunk's* out and we've seen before that often, when you get these blockbusting titles – *Cyberpunk*, *GTA*, *Red Dead Redemption* – the market often inhales. People will get ready – they've pre-ordered the game, and they won't buy something now because they're getting ready to spend two months playing *Cyberpunk*. You see games coming out now that are just going to disappear,

and I think, 'I wish somebody had told you not to do that.'"

While Curve Digital concentrates on the indie end of the market, it doesn't stick rigidly to any particular genre or style of game – over the course of its growth, it's published everything from pick-up-and-play puzzlers to intense 2D shooters to low-key adventures.

For Byron, this diverse approach is one

of the company's strengths. "I think there's a danger that if you concentrate on one specific niche, or

one specific style, you could just exclude working with something that you really love," Byron explains. "The example that I give is *Fall Guys* and [publisher] Devolver. That's not a style of game they've built their reputation on, but it's a style of game that they absolutely brought their publishing muscle to. If they'd just stuck to the type of games that people know,

**"There is nowhere to hide anymore, and that's what I like"**

▼ Looking ahead to a dark future in *The Ascent*.





^ Co-op firefighting simulator *Embr* is another of Curve's hot releases for 2021.

they wouldn't have published *Fall Guys*. So that's illustration. Being open-minded, being flexible, and not necessarily nailing your flag to one mast I think can be really beneficial."

### TIME AND MONEY

The game industry has, as Payne points out, "changed more in the past ten, twelve months than it has in the last ten years". But as technology evolves, and the discourse around games constantly shifts with the rise of new platforms like Twitch and Discord, Curve is still agile enough to move with the times, he argues. "I think the pandemic has really shaken the landscape," Payne says. "Whether that's the [number] of people being paid to write about video games in whatever capacity – that has been a real squeeze, not only on the journalists themselves, but also the outlets that they're writing for – and then the

publishers, who are trying to get people to find out about their games. So there's an immediacy there – it's about making sure your game is able to be playable by those outlets, whether that's press, or content creators, or influencers."

Just as the industry's changing, there's also been change within Curve Digital; founder Jason Perkins stepped away in 2020, and in his place came former Sega and Tencent executive John Clark. But with the continued success of such games as *Human: Fall Flat* and *For the King*, and with five games scheduled so far for 2021, Byron argues that the "future's bright" for the company. Citing the well-received licensed game *Peaky Blinders* as an example [see box, page 87], Byron argues that the key for Curve – or any publisher that wants to compete in an aggressive, fast-moving market – is quality. "With the changing media landscape, there is no way to hide anymore, and that's what I like about it – that there's a lot more honesty in terms of people having access to information and resources online. The old tricks that people used in order to hoodwink consumers into buying games off the strength of a licence is completely gone... In the old days, we were fighting for people's money. Now, we're competing for their time – and that's much, much more valuable." 🗨

### CASE STUDY: EMBR

A title we previewed back in Wireframe #12, *Embr* is both a physics-based co-op game and a delicious skewering of the modern gig economy. In it, you play a hapless part-time firefighter, tasked with completing rescue missions as efficiently as possible – at the end of each one, your performance is rated, like an Uber driver. Currently in Early Access on Steam and Stadia, it's due for a full launch later this year. "We've worked closely with Muse Games to tease this brilliant firefighting multiplayer game," says Ben Payne. "It has a great sense of humour – it's just translated everywhere. We work with our teams in China, for example, and sometimes there's stuff that basically gets lost [in translation], but actually, *Embr's* warmth and heart has sort of shone through. So that's been a good journey of audience and community engagement to make sure that the game purrs through until we release it on multiple formats next year."



# Forever-Gen



## STEVE MCNEIL

Steve just wants every game ever. Is that really so much to ask?

**“Do I need it? No. Does it make me smile every time I see it? Yes.”**

In a previous life, I created a TV show called *Go 8 Bit*. When we got it commissioned, I did what anyone cool would do – I bought a refurbished Amstrad CPC 464 on eBay and then drove to Great Yarmouth with my dad to collect it. By way of contrast, the show's host, Dara Ó Briain, got an arcade cabinet from Bespoke Arcades that can basically play every game ever. Which, if nothing else, gives you some insight into the differing fees our respective levels of fame afforded us at the time.

Over the years, like many of you no doubt, I've dabbled with emulation. It's an appealing, but often frustrating, experience. Fiddling with settings, searching for ROMs that match the emulator version you have and then, ultimately, it not quite feeling *THE SAME* when played on a PC with a modern controller.

Even before Dara made me sad forever by getting the toy I wanted, I'd periodically got drunk enough to hover my mouse pointer over the 'buy an arcade cabinet' button of Bespoke Arcades' website, but never been quite bold/drunk enough to commit. Recently though, the opportunity arose to do some work for them in exchange for one of their sexy gaming monoliths, and I am here to tell you, if you love retro gaming, get an arcade cabinet. You won't regret it.

Of course, I need to acknowledge that's easy to say when I've not had to shell out full whack for one – I am nothing if not a horrible shill – but the pleasure it has given me is above and beyond what I ever hoped for. And I really hoped it would be pretty good.

Do I need it? No. Does it make me smile every time I see it? Yes. Is ten-year-old-me permanently screaming “WE DID IT” in my dreams? Well, no. But you get my point. And it's an 'investment', right? Consoles have a shelf life of a few years. An arcade cabinet will last forever, and you'll be able to play all your favourites with proper arcade sticks and buttons and even spinners, trackballs, lightguns, and, dear God, I love it so much I could cry.

Of course, you don't have to go for the pimped-to-heck version. Depending on your budget, you can get arcade machines for under £1000. I blew that last year on a PS5 and an Xbox Series X. Which makes even less sense when you realise all these arcade cabinets essentially have gaming PCs in them, and there's hardly any console exclusives these days.

Anyway, the point is, if you're in two minds, but could potentially find the money and the space, do it. I love it, my kid loves it and, when we've all had our Bill Gates Vaccine Chips implanted, I will have so much fun with my friends on it.

I swear to God I'm not on commission. 🙄



^ Steve with his fancy arcade cabinet.



^ Some other people playing on fancy arcade cabinets.

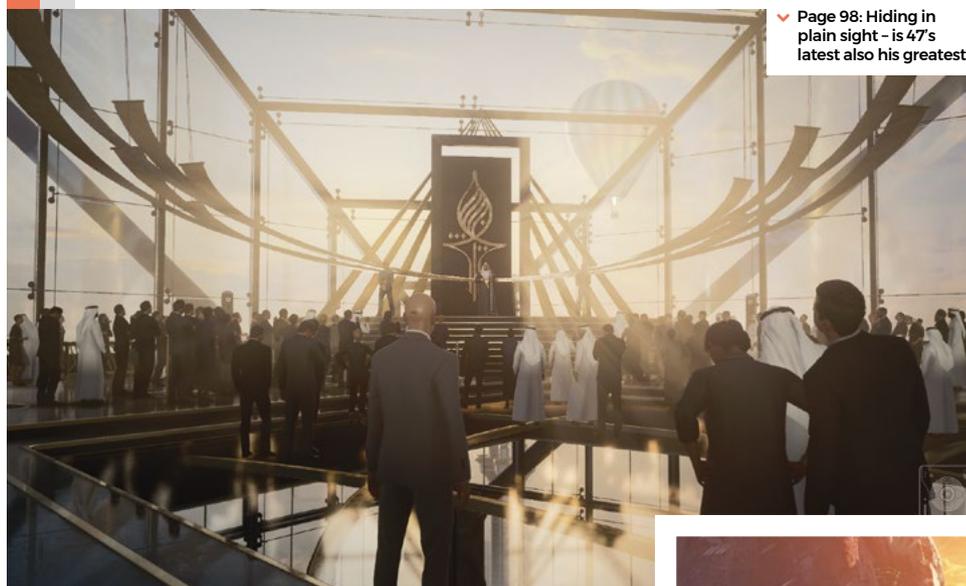
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Reviews, retro games, and lots more besides

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- 1-9**  
Trash. Unplayable; a broken mess.
- 10-19**  
A truly bad game, though not necessarily utterly broken.
- 20-29**  
Still awful, but at a push could be fun for two minutes.
- 30-39**  
Might have a redeeming feature, but otherwise very poor.
- 40-49**  
Adds in more redeeming features, but still not worth your time.
- 50-59**  
Average. Decent at best. 'Just about OK'.
- 60-69**  
Held back by glitches, bugs, or a lack of originality, but can be good fun.
- 70-79**  
A very good game, but one lacking spit and polish or uniqueness.
- 80-89**  
Brilliant. Fabulous fun. Everyone should at least try it.
- 90-99**  
Cutting edge, original, unique, and/or pushes the medium forward.
- 100**  
Never say never, eh?



✓ Page 98: Hiding in plain sight - is 47's latest also his greatest?

## PLUS

- 104. Backwards compatible**  
Discovering old greats, and a continued Game Gear repair
- 108. Now playing**  
Heading into the wastes of the future, and more in our monthly playlist



> Page 110: Yet another futuristic sci-fi RPG that's buggy as all heck - though this one's good.

# Little Nightmares II

Exquisite squalor

## Info

### GENRE

Puzzle-platformer

### FORMAT

PC (tested) / PS4 /  
PS5 / XBO / XB X/S  
/ Switch / Stadia

### DEVELOPER

Tarsier Studios

### PUBLISHER

Bandai Namco  
Entertainment

### PRICE

£24.99

### RELEASE

Out now

### REVIEWED BY

Alexander Chatziioannou

**F**or a work so obsessed with the iconography of out-of-tune televisions, made by an industry still shackled to cinematic aspirations, it's refreshing to discover that Tarsier's sequel takes

its cues from a more time-honoured narrative medium: *Little Nightmares II* is one of the most theatrical games ever made. Rare is the scene where a single element doesn't dominate, positioned centre-stage and lit by a flickering bulb, hazy TV static, or moonlight from an open window. Meanwhile, the edges of the screen remain in shadow, like a stage set for the protagonist to deliver some near-death soliloquy.

Complemented by the developer's extraordinary ability to conjure memorable images that combine the childlike and the grotesque, the fairy tale and the horror story, this stylistic choice results in another interesting side effect: it foregrounds said elements' already heavy symbolic connotations. In the opening's forest, you don't use a rope to cross a gaping chasm, you use a hangman's noose.

Later on, inside a wooden shack, the key you need to escape isn't left lying on top of some drawer, but dangles from a meat hook. To get there, you have to climb what elsewhere might be a harmless rolled-up carpet, but here looks like a bulging chrysalis ready to burst with life at the slightest mishap. Under the spotlight, props ascend to the status of symbols, platforming challenges are reframed as existential struggles; everything is supercharged with meaning.

Which makes sense. Isn't that how both Mono, our new lead, and Six, beloved heroine of the original who joins him, would view this oppressive, brutal universe through their adolescent eyes?

Not that innocence is an option in a world where every room hides a decomposing corpse, plastic mannequins come alive with murderous intent, and mesmerised citizens fly into fits of destructive rage the moment their TV-induced oblivion gets interrupted. Adding limited offensive options to your repertoire of abilities, the most shocking violence in *Little Nightmares II* isn't the kind visited on you, but the kind you inflict upon others, like shattering the pupils of the second level's twisted academy into porcelain fragments with a lead pipe, or finally serving the hunter in the woods with a taste of his own medicine. Still, for the most part, you're as helpless as in the first game, and these intermittent moments of morally ambiguous empowerment do more to highlight your vulnerability than deflate it.

Occasional bouts of armed resistance aside, most of your time will be spent with light

◀ Once she retrieves her iconic costume, Six cuts a striking figure among the drab backgrounds.



▲ **Stealth required!** Most of the game's bosses will search for you, each in their own unique ways.

platforming and rudimentary puzzle-solving, and it's here that an otherwise dazzling audio-visual package falters. As if anxious to share its stunning imagery, *Little Nightmares II* shirks from challenging you in the slightest, letting you cruise through considerable chunks of the game by simply moving from left to right, with the occasional button press to grab an overhead ledge or dive behind piles of scenery to evade the stare of each area's prowling stalker. Worse, when navigation does become a problem, it's not due to devious spatial design making demands of your skills, but because of frequent hitches in the controls, like the way Mono tends to cling to background objects, slowing his pace to a crawl – a disaster when chased down a cluttered corridor.

Environmental puzzles tend to be similarly trivial: pulley, meet analogue stick. Later levels, at least, add some sophistication, and there are some great, panic-inducing sequences in the creepy Hospital area involving your flashlight, but even near the endgame, you'll rarely need more time to come up with solutions than it takes for a glance at the screen and, perhaps, a quick test with available objects of interaction. While the lack of challenge might be useful in securing a relatively unimpeded narrative flow, it comes with a loss of achievement, the feeling that, rather than an integral part of the triumph-over-adversity story being told, you're just someone along for the ride.

Nevertheless, it's hard to complain about trouble-free progress when the rewards are so enticing. Improving on the original's already exquisite squalor and expanding its gallery of claymation monstrosities means that *Little Nightmares II* appeals primarily as a never-ending stream of visual delights. Interiors are richly detailed monuments to neglect, rooms filled with

faded memorabilia, abandoned toys, and broken appliances, signifiers of lives suspended, now covered with a coat of fine dust. But even those sights can't compare to the sprawling vistas and ominous towers of the Pale City, usually glimpsed in-between levels in all its concrete grandeur. Sound is also masterfully deployed to flesh out this menacing realm in more subtle ways, adding a layer of physicality to the bear traps or the piano whose keys feebly thud, stringless, as you step on them to reach higher ground.

The journey doesn't last long, which counts among the game's merits as you're barely given the time to register its flaws: the lack

of challenge, the unwieldy controls, and even a certain thematic laxity, the fact that, for all of their symbolic charge, its ciphers never congeal into a full metaphor. Instead, *Little Nightmares II* is happy to take you on a brisk tour of its beautifully decaying world before letting go with an emotionally savage final act. After all, you've come to know these characters (or so you think) and finding out how their harrowing experience has shaped them makes for a last, shocking flourish before the curtain call. 🗣️

**“Interiors are richly detailed monuments to neglect”**

▼ **Innocence lost, a central theme in the game, is reflected in the decrepit state of this room.**



**HIGHLIGHT**

The Hospital, packed to the rafters with plastic limbs and inhabited by a throng of headless dummies that grow restless in the dark, isn't just the creepiest level in the game, but also one where the flashlight gimmick provides the kind of engagement to match the peerless audio-visual presentation.

**VERDICT**

**A gorgeous world to visit, even if the game built around it is anodyne.**

**64%**



- > The mysterious story is told enigmatically; all part of *Olija's* charm, it has to be said.
- > Combat is quick-paced and can be surprisingly technical... or you can just mash the buttons if you want.



Review

## HIGHLIGHT

My head says combat, but my heart goes atmosphere: *Olija* is positively dripping with character, with the mysteries of the islands you explore sitting front, middle, and back of the screen, teasing you to want to know more.

# Olija

Choppy waters in another world

## Info

**GENRE**  
Adventure-exploration-combat

**FORMAT**  
Switch (tested) / PC / PS4 / XBO

**DEVELOPER**  
Skeleton Crew Studio, Thomas Olsson

**PUBLISHER**  
Devolver Digital

**PRICE**  
£13.49

**RELEASE**  
Out now

REVIEWED BY  
Ian Dransfield

## VERDICT

A wonderfully crafted mix of platforming, exploration, combat, and narrative, well worth the price of entry.

81%

**O**lija – that’s oh-lee-ya, pronunciation fans – sees our player character Faraday shipwrecked and whisked away to a mysterious land of islands, dour-faced locals, trapped shipwreckees, and nefarious beasts to battle as you explore. It evokes the spirit of *Another World*, mixing an enigmatic, alien atmosphere with an undercurrent of narrative driving the whole process – but where *Éric Chahi’s* 1991 classic was hardly a step beyond *Dragon’s Lair* in the action it offered, *Olija* has an often brilliant set of combat mechanics bolted on to the whole thing.

You start off fairly simply, tackling enemies with a basic sword and a bit of jumping and dodging. Soon enough, you’ve grabbed a ranged weapon; great for... well, taking out enemies at range, as you’d hope. You unlock new hats that give special powers, like a damage-dealing feather that follows the path of your dash after you’ve done it, adding a bit of pain to your avoidance techniques. Then there’s the magical spear, which can be used as a regular melee weapon as well as thrown as a ranged attack, and it can be teleported, too, once it sticks into certain things. *Olija* builds up the elements around you as you play, so while it may look like a fair chunk on this page, it’s actually easy and straightforward to get your head around it while playing.

But the ever-increasing challenge – especially in boss fights – means you’re kept on your toes, never feeling overpowered even with the steady stream of new stuff coming your way. That’s not to say *Olija* is particularly Hardcore™ – there was no risk of me flinging my Switch against any walls while playing, even if I did die a fair few times – but it’s certainly a solid challenge when it wants to be. That just helps to double down on the fact that those combat mechanics are really well done; snappy and satisfying, and the sort of thing you never feel like you’re out of control with. If you press it, you do it.

Conveyor-belt the whole thing along is that narrative: it doesn’t push it too hard, but you’re rarely confused as to what’s going on.

As with the abilities you unlock, there’s enough going on, story-wise – and enough with the new areas unlocked and secrets revealed as you play – to

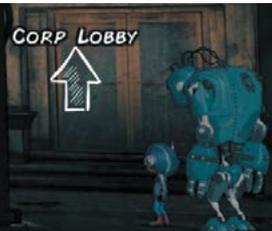
push you forward. It’s fair to say no element alone is truly standout. Taken together though, it makes for a fantastic experience.

One playthrough isn’t going to take you forever – a handful of hours, maybe – but the experience you have in those hours is a fantastic one, full of creative twists and surprising turns, as well as that ever-changing combat to keep you on your toes. Sometimes there’s only one real way of saying it, and here it is: *Olija* is a very good video game. 🎮

**“There was no risk of flinging my Switch at the wall while playing”**

HIGHLIGHT

*Encodya* is stuffed with so many tributes it suggests confusion about what the game is meant to be. But there's a handful which are quite fun. You can use a floppy disk to summon a familiar character in one dark alley and pick up a retro button which pixelates everything.



Review

# Encodya

## Foundling narrative

**N**ine-year-old orphan Tina's mission to save the citizens of dystopian Neo-Berlin with her robot SAM-53 is the subject of *Encodya*, a 2.5D point-and-click adventure inspired by classic LucasArts games.

Tina embraces the cyberpunk lifestyle, which is to say she's a misfit living off-grid, alienated from the technological world around her yet dependent on her robot guardian, and she wears a deeply unfashionable helmet. SAM is a benevolent brick, and I love the way he lurches through Neo-Berlin's streets. You switch between them to solve puzzles. Tina has no qualms stealing a set of keys, while robots prefer to chat with SAM. They share an inventory, keeping things simple, and on the 'Easy' difficulty, Tina can ask him for hints.

Initially, you need to furnish supplies for Tina's rooftop shelter from the city's dark crevices. After finding the place trashed by police, Tina learns how her father left a secret code inside SAM. This code is vital to rescuing humanity from their enthrallment to cyberspace which protects the tyrannical

mayor. Unpicking this mystery involves using your deductive reasoning and cobbling objects together to solve puzzles. You'll access new areas and ultimately finish the mission Tina's father left for her.

There's a satisfying variety to *Encodya's* puzzles, including searching through a glitchy digital phone book and finding RAM for a droid, and they always service the story. *Encodya* does uphold some annoying adventure game habits, though. Some solutions I simply wouldn't find without a walkthrough, while exits and interfaces get lost.

*Encodya* conjures a convincing atmosphere and sense of place, so skulking in Neo-Berlin is fun. It's painted in a handsome style that

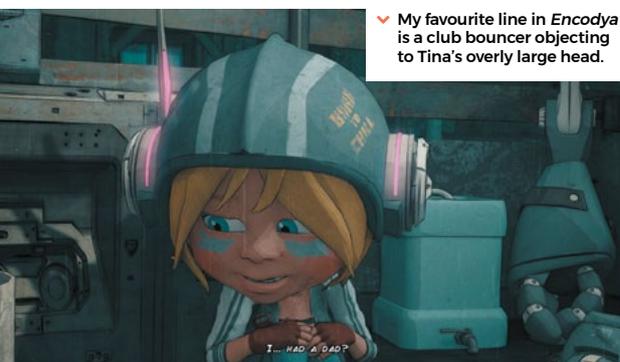
captures the city's daytime gloom and the tension of its rainy nights. Flying cars are chased by the neon glow of their tail-lights, and an understated Vangelis-like score by Yann Latour drones over its high rises and slummy bars.

While most of the writing is solid, way too much is reserved for self-aware parodies and tributes. Sam notes that "in adventure games, X marks the spot to dig". Maybe this is *Encodya's* pitch to genre fans, but it upsets the earnest tone of its story. It's as if, mid-flow, the characters drop the script to work the crowd.

If *Encodya's* mission is to resurrect some love for the genre, though, it's successful. When progression isn't reduced to rote inspection, marshalling the clues you've absorbed from Neo-Berlin's streets feels rewarding. *Encodya's* is a cohesive world, with cheerful characters and a hopeful story. 🌍

**"There's a satisfying variety to *Encodya's* puzzles"**

✓ My favourite line in *Encodya* is a club bouncer objecting to Tina's overly large head.



## Info

- GENRE**  
Point-and-click adventure
- FORMAT**  
PC (tested)
- DEVELOPER**  
Chaosmonger Studio
- PUBLISHER**  
Assemble Entertainment
- PRICE**  
£21.99
- RELEASE**  
Out now

REVIEWED BY  
Kyle Hoekstra

## VERDICT

Evocative world-building harbouring a syrupy story and bad jokes. But in a good way.

62%

## HIGHLIGHT

There are a couple of great puzzles in the game that test your logic in a satisfying way, and make you feel like a clever and canny detective uncovering secrets with nothing but a sharp mind.

## Review

# Oniria Crimes

### The detective game of your dreams?

^ Though the game has its failings, there is something satisfying about poking around in its diorama-like rooms.

## Info

### GENRE

Adventure

### FORMAT

PC (tested) / XBO / PS4 / Switch / XB X/S / PS5 / Linux / Mac

### DEVELOPER

cKolmos Game Studios

### PUBLISHER

BadLand Publishing

### PRICE

£15.49

### RELEASE

Out now

### REVIEWED BY

Paul Walker-Emig

## VERDICT

Frustrations that take the focus away from deductive elements undermine a great detective concept.

# 57%

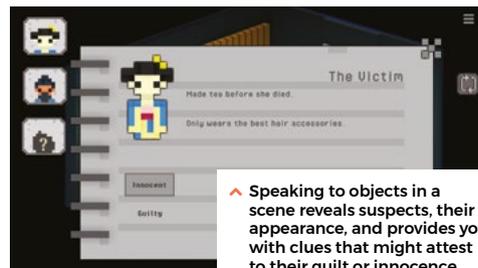
The fiction that underpins *Oniria Crimes* is an appealing one given the year we've collectively endured. In this game, people are able to escape from the horrors they face in the real world and spend time living in an alternate dream reality. Unfortunately, this dream space isn't free of the tensions and traumas of everyday life: there is political unrest, factional fighting, and a spree of murders. This is where you come in.

Every time a murder happens, you're tasked with investigating the scene of the crime. These are pretty little puzzle rooms that require you to use nothing but what you can find within that small space to work out what happened. Objects in this dream world can be interrogated, literalising the idea that objects placed within a context can tell us a story, each offering you a little piece of testimony to help solve the case. As a concept, I love it. However, in an unfortunate case of fact mirroring fiction, the reality of how these investigations play out doesn't match the fantasy.

Investigating a crime scene is far too reliant on pixel hunting. There were many instances where I found myself hitting a roadblock in an investigation, or even failing outright, because I failed to hover my mouse over the correct bit of the screen and find a key clue. Once you've collected enough clues, you end the investigation by marking suspects as innocent or guilty and highlighting two pieces of supporting evidence to back that verdict. There are problems here too. The way a piece of evidence should be read in relation to a verdict or version of events is often unclear.

This means that though you might have worked out what happened, you may find that you didn't select the bits of evidence the developer wanted you to support that interpretation, even if it follows a logic that seems to make sense to you. You then end up having to reload the case and try different combinations of evidence to brute-force your way to the correct solution. Needless to say, this is deeply unsatisfying. The deductive element that forms the core appeal of the detective genre is overwhelmed by the sense that all you're really doing is trying to click on the right things.

*Oniria Crimes* has ideas that are rich in potential, like a narrative setup that deals with the intriguing territory of the relationship between reality and fantasy, or being able to have conversations with conscious objects, but that potential is never reached. There's a clever puzzle here, a beautiful voxel scene there, but the positives the game offers are dulled by elements that work in opposition to them. Again, it has some great ideas, but it's not the game we dreamed it could be. [W](#)



Rated  
Review

Some thoughts  
Never rest...

## HIGHLIGHT

There are plenty of moments in *The Collage Atlas* that are stunning. One involves a tree wreathed in chains falling from the sky, launching out anchors and a shower of letters. The detail is enough to take your breath away.

Review

# The Collage Atlas

A beautiful collage forms an inconsistent picture

**T**he *Collage Atlas* is a beguiling experience at times. It flows and twists in its own directions, building a world around you with a combination of sound and art. At other times it's a stodgy, directionless mess, mired with old concepts that don't quite gel together with the mesmerising aesthetic.

The game plays out in a hand-drawn, monochromatic world. It's filled with intricate line work renditions of lanterns, butterflies, and pinwheel spinners. It's undeniably beautiful, and utterly unique. You move through the world with simple controls, and change things mainly by looking at them.

Letters float in the air, and spotting them puts them into dreamy sentences that you collect in the titular atlas. As you unlock more of the story, new mechanics start to spring up. You're still moving along narrow paths, exploring the world in direct, linear chunks, but you'll be interacting with things in slightly different ways.

It's here that things start to unravel a little. One particularly unimaginative section sees you flinging balls of letters into swirling pillars of wind. It's mechanically clumsy and can get quite frustrating. But worse, it's jarring, knocking you out of the ethereal jangliness of the rest of the experience. You'll find yourself wondering why you're suddenly playing a round of haphazard golf.

And it's emblematic of the problems that prowl through *The Collage Atlas's* gorgeous world. It's a game that isn't quite sure what it wants to be. It

knows that it's beautiful, it knows that it entrances and sucks you in. But once it's got your attention, it isn't quite sure how to hold on. For all of its grace and style, the game lacks the confidence to allow you to simply explore.

Platforming sections feel floaty and loose, and often you'll tumble out of the world. The adaptive sounds are sometimes discordant, cracking together and then disappearing just as suddenly. Every attempt the game makes to try something new falls flat, leaving you longing for the simple exploratory bliss of the early parts of the experience.

This is a case of a game struggling under the weight of an identity crisis. It's never sure-footed, stumbling along

with a haphazard gait instead of striding out with the assured confidence that self-awareness brings. It builds a world you want to spend time in, but worries it doesn't have enough brazen attractions to keep you entertained.

The sad fact is that *The Collage Atlas* could have been a thing of wonder. When it hits the right notes, they're pure and perfect, like ringing crystal. When it gets things wrong, it's more like a cacophony of smashed bottles. 🗨

**“It's a game that isn't quite sure what it wants to be”**



## Info

**GENRE**  
Adventure

**FORMAT**  
iOS

**DEVELOPER**  
John William Evelyn

**PUBLISHER**  
Robot House Games

**PRICE**  
Free (Apple Arcade)

**RELEASE**  
Out now

**REVIEWED BY**  
Harry Slater

## VERDICT

*The Collage Atlas* is a beautiful piece of art, but a pretty average game.

**54%**



Review

# Hitman 3

Karma Chameleon

## Info

### GENRE

Stealth Action/  
Puzzle

### FORMAT

PC (tested) / PS5 /  
XBS S/X / PS4 /  
XBO / Switch /  
Stadia

### DEVELOPER

IO Interactive

### PUBLISHER

IO Interactive

### PRICE

£49.99

### RELEASE

Out now

### REVIEWED BY

Nic Reuben

**T**here's a point in every individual's life when they find themselves asking: who am I, and how did I get here? For Agent 47, I imagine one such moment spent crouched inside a wicker chest next to the unconscious body of a servant in a Dubai penthouse bathroom, at the very top of the tallest building in the world. 47 is a professional, of course, so he doesn't tend to ask many questions at all.

This is the beauty of modern *Hitman*. It can be a demanding stealth game, a spy thriller, a slapstick comedy, or a puzzler. It can be all of these things inside ten minutes. *Hitman 3* trains its scope on one of those areas – the thriller – leaving the others less attended to. It hasn't run out of ideas, but it does feel as if it uses up all the series' remaining ones. As a result, in most of the ways that make

this modern trilogy unique, *Hitman 3* is the weakest entry. Being the weakest in the most consistently creative stealth-puzzle hybrid series of the decade isn't exactly a damning indictment, though. *Hitman 3* is a fantastic time, regardless.

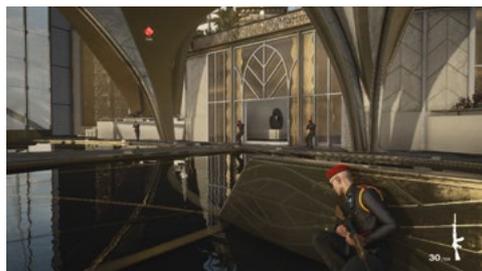
*Hitman 3* sticks with well-traced blueprints. You'll still navigate sprawling monuments to unbridled opulence and use 47's particular skill set to stake out opportunities for creative impalement. Sometimes, it's about jamming a wrench into clockwork AI patterns and seizing moments. Sometimes, it's just about passing several

real minutes in the shadows, waiting to pull off the perfect kill. As always, the stages feel at once impressively convincing as living locales and knowingly, joyfully contrived to speed along your targets' end.

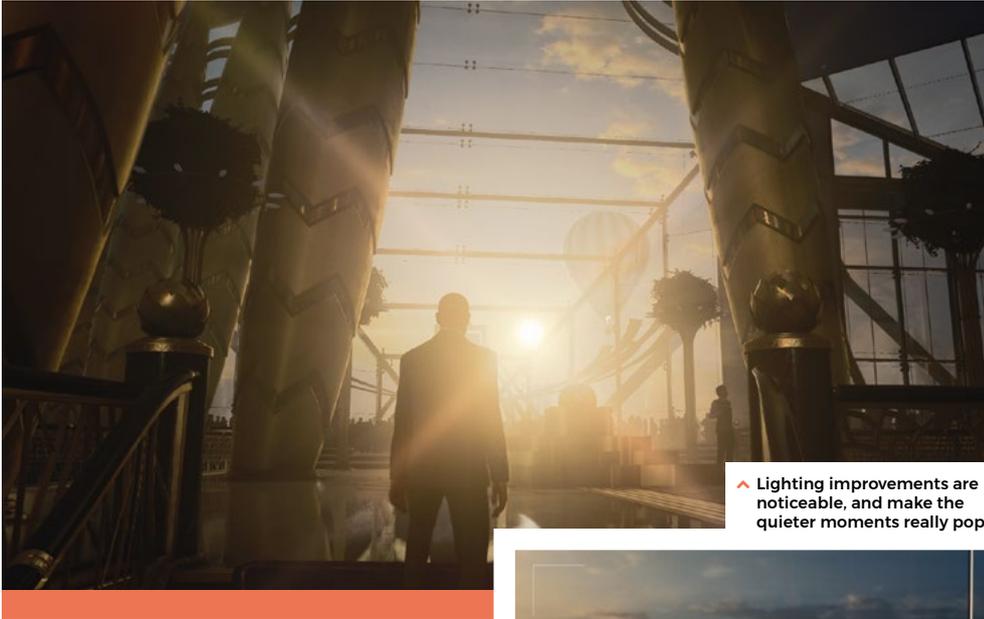
New are gadgets and graphical tweaks. Never has 47's glorious, bar-coded dome shined so angelically than in *Hitman 3*, but the hyped-up new gadget, the camera, amounts to little more than an electronic lockpick. The new *Soulslike* shortcuts that simplify level routes once unlocked are a nice touch. Just as welcome are options to skip extended story objectives on repeated playthroughs.

That *Hitman 3* retroactively adds visual touch-ups and gadgets to the first two games is grand, but better is how the tale it tells retroactively

**“Never has Agent 47’s bar-coded dome shined so angelically”**



> Guns are still plentiful, but breaking stealth is highly discouraged.



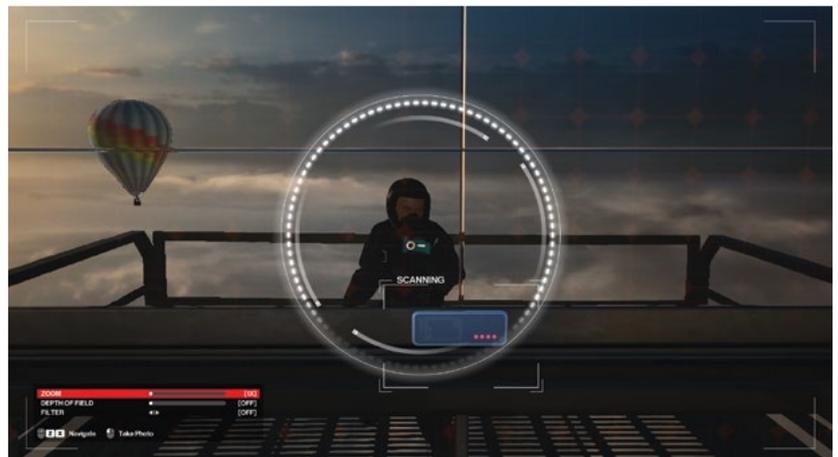
▲ Lighting improvements are noticeable, and make the quieter moments really pop.

makes those prior stories far more interesting. You'll want to revisit the legacy missions; to soak up each conspiratorial hint as much as you soak up added god rays and screen space reflections. Bizarrely, Agent 47 himself seems to have overindulged in all those bananas and muffins he keeps finding, and now looks younger and a touch fleshier in the face.

If 47's cheekbones are less defined, though, his character and purpose is certainly more so. David Bateson, playing the titular lead, is having a ball here – sometimes, quite literally – as are the rest of the cast. If *Hitman 2* was stolen by John Hopkins' Lucas Grey, then *Hitman 3* is a sweeping swansong for Jane Perry's Diana. I dearly hope IO don't look too far afield for their 007 project's Bond and M, as they already have the perfect candidates.

It's what this new attachment to the characters costs that's the issue. *Hitman* and *Hitman 2* felt like IO was fine with a big chunk of players not discovering huge sections of each stage. Great games are made timeless through the confidence to hide their best moments – *Hitman* and its second season will, I believe, stand up as timeless games. *Hitman 3* proves that the line between focus and tunnel vision is piano-wire thin, and for every set piece built, an avenue is demolished. If the first two seasons were a traveller's suitcase, stuffed with visas and costumes and murder weapons, then *Hitman 3* is a briefcase. Sleeker, more refined, but less novel.

Maybe it's the sunset that has me feeling a little melancholy about the whole thing, and *Hitman 3* is – often deliberately – a melancholy



▲ 47's new camera has lockpicking and scanning utility, but isn't a game-changer.

game. It feels like it's just decided it wants to tell a traditional story, and so squeezed 47's most desperate and most triumphant moments into the final act. The concluding level is short and linear, although this is thematically justified. The opening level too, while beautiful, feels like the introduction that a third season like this only needs when it markets itself as a brand new game.

*Hitman 3* is still a confident, creative blast to play, boasting two of the series' best levels and a handful of its best moments. If, for whatever reason, you're new to this modern *Hitman* trilogy, please know it's all I can do to not spend the majority of these pages evangelising for it. When I say that *Hitman 3* does little to change the formula, and what changes it does make are somewhat bittersweet for a long-time fan, know that I feel that formula is one that consistently produces industry-best level design, espionage, and black comedy. These are exceptional games; this concluding outing of our hairless executor is just a hair less so. 🐼

## HIGHLIGHT

The third stage subverts the established formula to great effect, resulting in one of the most visually spectacular and memorable locations of the trilogy.

## VERDICT

A briefcase to *Hitman 1* and 2's traveller's suitcase. Sleeker, more refined, but less novel.

79%

## HIGHLIGHT

Conflict on Nu-Terra is between citizens who want to return to Earth and those who don't, with both relying on the same power source. It's a premise that works through the pros and cons of insular communities, hopeful futures, and nostalgic dreams. And yes, it's a struggle between remainers and leavers, which has a certain relevance.



▲ The bickering and teasing of your friends should make you feel at home.

## Info

### GENRE

Visual novel

### FORMAT

Switch (tested) / PC

### DEVELOPER

Team Woodsalt

### PUBLISHER

Team Woodsalt

### PRICE

£19.99

### RELEASE

Out now

### REVIEWED BY

Jon Bailes

## VERDICT

A half-decent sci-fi story that falls foul of its own hubristic twists.

# 38%



# Woodsalt

## How much wood would a Woodsalt salt if a Woodsalt could salt wood?

Things aren't what they seem in *Woodsalt*. Protagonist Emcy awakes from a 1000-year stasis in Nu-Terra, a colony on a far-flung planet built by refugees from a ruined Earth. Stuck in a small, glass-domed community, he's reunited with his sister and welcomed by a melange of fellow revived escapees and individuals born in the settlement. But harmony in this suburb is as fake as its atmosphere, with a revolutionary faction agitating to overthrow the heavy-handed government. And Emcy starts seeing freakish visions and premonitions. Something's just... off.

Like Emcy, you may also take a while to adjust. Looking and sounding a bit like a PS1 *Final Fantasy* game, and sort of borrowing the confidant system from *Persona*, *Woodsalt* initially tricks the mind into JRPG mode, but it's strictly a visual novel. A daily schedule oscillates between fixed story segments and 'free roam', where you traipse through half-a-dozen locations dotted with static townsfolk and select two key characters whose personal stories you'd like to unravel.

It's not much, and not exactly charged with momentum. Emcy ambles between scenes over lilting, looping music, perhaps sifting through some lore-laden documents in the local library, before heading to another meeting, another conversation. In chat, you make dialogue choices, but few seem significant. Sometimes, the nightmarish visions are welcome to stop you from drifting off.

Still, the individual tales do have some of that *Persona* pull, and you soon find yourself prioritising favourites to see how they pan out, especially since time is limited. The script is slightly messy, but has personality, with a blunt British turn of phrase that induces a few chuckles. There's intrigue in the plot too, boosted by some fun meta moments, from parallels with *The Truman Show* and *Bandersnatch* to characters commenting on the size of their 1990s JRPG-style heads.

If that's enough to pull you through to the conclusion, the conclusion *itself* might make you regret it. With much still unresolved, the game loops back to the start, asking you to try again. Where *Hatoful Boyfriend* used multiple brief cycles to morph into something horrifyingly different, this feels more like the twist ending of *Super Ghouls 'n Ghosts* – a sadistic trial. Rather than play on what you've learned to subtly alter scenes and dialogue options, it's a crude reset that asks you to relive every ponderous step. All you can do is hang out with different NPCs this time, *maybe* getting closer to the truth at the end of another four hours.

In making such audacious demands, *Woodsalt* wildly overestimates the draw of its mystery and amiable banter. With no RPG systems to fall back on, it's an act of self-annihilation that torpedoes much of the game's earned goodwill. Something's off in Nu-Terra, but also in a narrative structure that makes finding answers needlessly laborious. 



### HIGHLIGHT

While technically written for other games, Shimomura's soundtrack is still one of the best. Majestic and emotive while also matching the tone of each Disney film it's inspired by, a whole game based on it should have been a dream come true.



▲ Revisit key moments from the games, such as the fight in the ballroom with the Beast.

# Kingdom Hearts: Melody of Memory

Simple, but not so clean

**Q**uite frankly, I'm shocked we haven't had a *Kingdom Hearts* rhythm game sooner. The series was around for the entirety of the DS, 3DS, Wii, and Wii U's lifespans – all platforms that could have been perfect for one. And yet, here we are, in the dying days of the PlayStation 4, with *Kingdom Hearts: Melody of Memory*.

As much a celebration of the *Kingdom Hearts* series as it is their composer, Yoko Shimomura, *Melody of Memory* retells the entire story so far, from the very first game through to 2019's *Kingdom Hearts 3*. Each world challenges you to whack Heartless, Nobodies, Dream Eaters, and Unversed to the beat of that world's iconic music, while also completing tasks that help unlock later stages.

The big problem is how wildly inconsistent *Melody of Memory's* rhythm gameplay is. Sometimes it fits perfectly and you fall into a state of Zen. I know *Rowdy Rumble*, *Monochrome Dreams*, or *Dearly Beloved* – they've been in my life for over half of it by now – and watching Sora and company pull off perfectly timed attacks to those iconic tracks just feels great.

But then, in other places, the beatmaps feel sloppy. They suddenly and jarringly shift which instrument you're meant to pay attention to mid-note, or worse, drift off-beat. Other times it feels like it gives up on being a rhythm game entirely and just throws a cloud of Heartless at you to button mash to.

The optional challenges that help unlock worlds also feel jammed in. Sometimes they're so easy, such as "Miss fewer than 50 notes" or "Complete the song on Beginner difficulty", while others force you to grind the same song on the hardest difficulty over and over again. It drags the game's progression down to a crawl, and if I never have to hear *Tension Rising* again, I will be ecstatic.

It isn't just in the beatmaps where *Melody of Memory* often feels like a rough first draft. The 3D environments of the early game give way to simply showing cutscenes in the background for *Kingdom Hearts 3*, and guest characters only appear for some worlds and not others. The fact you don't get Sulley in Monstropolis or Tron in Space Paranoids, but do get Peter Pan in multiple Neverland stages, is so disappointing.

Oh, and the series staple of Sora changing appearances between worlds to fit in? Nope, not here. He doesn't even upgrade costumes between the first, second, and third game's stories, he keeps his default *Kingdom Hearts* appearance for 99% of the game.

*Kingdom Hearts: Melody of Memory* succeeds where every game in the series does, by trading on nostalgia both for *Kingdom Hearts* itself and for Disney. But *Melody of Memory* feels rushed; a sometimes off-key rhythm game that cashes in on its legacy for a few quick joys before giving way to the feeling they just didn't do enough with it. Asking £49.99 for it, when you can get the entire series for less than half that, is ridiculous. 🙄

### Info

- GENRE**  
Rhythm
- FORMAT**  
PS4 / Switch
- DEVELOPER**  
Square Enix, indieszero
- PUBLISHER**  
Square Enix
- PRICE**  
£49.99
- RELEASE**  
Out now

**REVIEWED BY**  
Joe Parlock

### VERDICT

A poor rhythm game that often fails to remind us why *Kingdom Hearts* hits the right notes, this is a low point for the series.

# 49%

HIGHLIGHT

One section later in the game sees you approaching a stranded snowmobile with a rifle. It's unbelievably tense, with whipped-up snow obscuring your view, a single bullet, and a deep uncertainty about what you should do. It's heart-stopping, perfectly handled, and expresses a lot of the game's themes in a handful of seconds.

▲ There's an undeniably simple beauty to everything in the game, and its use of colours is especially noteworthy.



▲ Deeper into the experience, as past and present start to blur, you'll find yourself living through parts of both stories at the same time.

Review

# South of the Circle

A snowed-in afternoon that you're unlikely to ever forget

## Info

**GENRE**  
Adventure  
**FORMAT**  
iOS / Mac  
**DEVELOPER**  
State of Play  
**PUBLISHER**  
State of Play  
**PRICE**  
Free (Apple Arcade)  
**RELEASE**  
Out now

REVIEWED BY  
Harry Slater

## VERDICT

A wonderful story, brilliant art, a perfect soundtrack, and fantastic voice acting, to boot – there's almost nothing to dislike in *South of the Circle*.

91%

**S**outh of the Circle is a game that captures its moments perfectly. Whether that's stumbling through a blizzard, guided only by flashing red lights off in the distance, arms wrapped tight around your chest to keep out the frozen southern winds, or sitting awkwardly in a government office, reading between the lines of each question that's being put to you.

This is a nuanced, deeply engaging narrative adventure. It's emotional in all the right ways, while still weaving a tale of love and loss, plane crashes, and abandoned research bases that's going to leave you dangling precariously on the edge of your seat.

The game tells two stories.

In one, main character Peter is stranded in the Antarctic wastes, trying to find someone to help after a plane crash that left his grumpy Australian pilot with a broken leg. The other is a love story, set before Peter's journey south, and sees him wooing Clara, a fellow lecturer at Cambridge University.

Set against the backdrop of the cold war, the game weaves politics, feminism, and protest seamlessly into its narrative. Along the way you'll make choices, using a smart symbol system that tells you the general gist of what you're about to say. There are bigger decisions to make as well, that change the story in subtle ways.

Nothing in *South of the Circle* ever feels forced, whether you're hiking through the Scottish

Highlands to launch atmospheric balloons, or discovering a funfair at the top of a mountain as the cold sets in and past and present begin to blur. There's a maturity to everything here, and an overwhelming drive to see what's going to happen next.

The acting is some of the best you're ever likely to see in a video game. Motion capture performances complement the wonderful voice acting, and the gorgeous art style brings life to the tundra, the rainswept streets of Cambridge,

and the beguiling crags of northern Scotland.

You'll finish the experience in an afternoon, but it'll be an afternoon spent enthralled. *South of the Circle* feels like a classic movie, brilliantly put

together in every department and designed to be consumed in a single sitting.

This is a bright and polished game that showcases how effective interactive entertainment can be in telling stories. While there isn't a lot to do mechanically – no QTEs or jarring combat, no sudden jumps into traditional genres to try and keep players interested – *South of the Circle* doesn't need it.

Beyond all of that though, the simple fact is this is a game that's going to stay with you long after you've finished playing. *South of the Circle* is a memorable piece of video game storytelling, and a prime example of just how far the medium has come in its few decades of existence. 🎮

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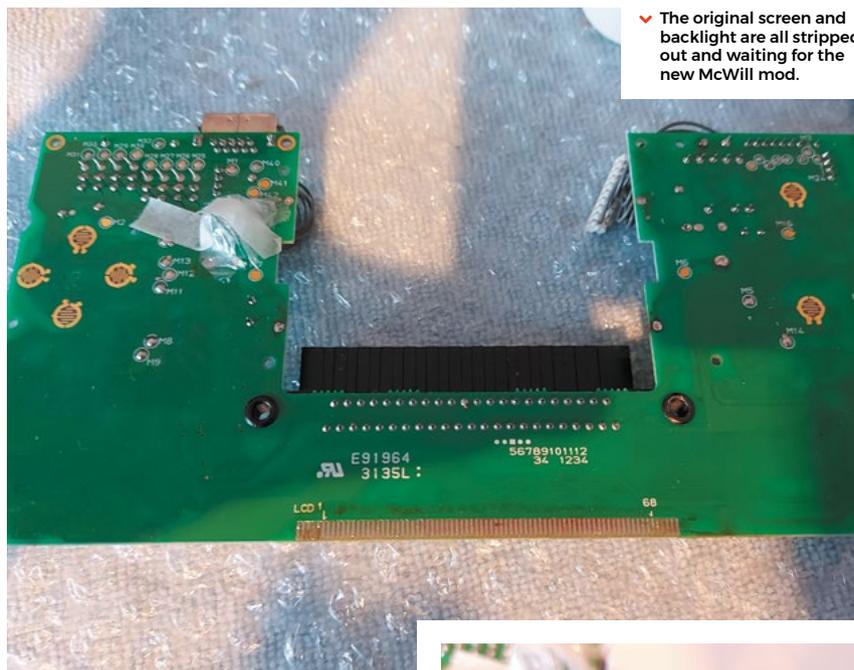
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# Backwards compatible

WRITTEN BY RYAN LAMBIE

## Ultimate Sega Game Gear: Part 2

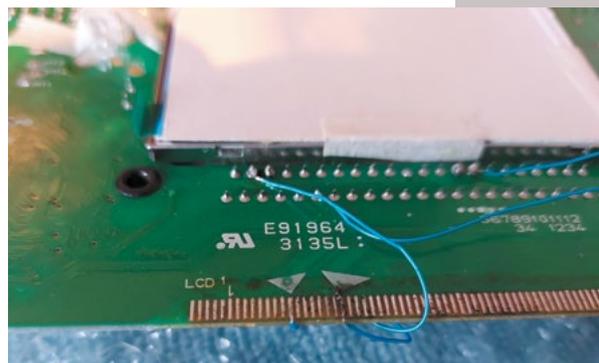
After replacing the capacitors in a tired, broken Game Gear last month, my quest to breathe new life into this 30-year-old bit of tech continues. Next: install a new LCD screen designed by McWill – and provided to us by the fine folks at Retro Six ([retrosix.co.uk](http://retrosix.co.uk)). First emerging in 2014, the McWill is a replacement for the Game Gear's stock display: where the old panel provided washed-out colours and some dreadful ghosting that threatened to obscure small objects like projectiles, the McWill screen offers the clarity and crisp pixels that 1990s Game Gear owners could only dream of. The downside? The McWill screen isn't the easiest install, and I'm hardly a trained electronics genius. So can a relative novice like me upgrade the screen without making a total hash of it? That was what I was asking myself, at any rate, as I started reading the A4 page of instructions that came with the mod. First, there's the task of removing a quite bewildering number of components, including nine resistors, a couple of capacitors, and more besides. Then the original display has to come out, which requires gently desoldering the ribbon cable and peeling it away like a piece of sticky tape – I've seen some people on YouTube simply yank the old screen off without heating it first, which raises the possibility of tearing the tiny pads off the motherboard. Using a soldering iron at a low temperature is more time-consuming, but side-steps the need for



✓ The original screen and backlight are all stripped out and waiting for the new McWill mod.

awkward repairs later on. A couple of fuses have to be removed next, and then four resistors need to either be replaced with 0 ohm components or simply bridged (I opted for the latter, with small blobs of solder doing the trick).

With all those parts out of the way, the next job is to slide the new screen into position on the main board – a simple enough process, since the McWill screen and the driver PCB behind it slip snugly into the gap left by the original backlight and reflector. The instructions



▲ The little triangles of tape ensured I soldered wires to the correct data lines. I also recommend protecting the McWill screen with cardboard while you work.



◀ The difference in quality between the original Game Gear screen (left) and the McWill display (right) is immediately striking. These 8-bit games have never looked better.

asked me to solder the screen into position at this point, but I opted to leave this step for now so that I could make fine adjustments later if I need to. This brings us to the fiddlier bit of the whole operation: the modification requires you to solder lengths of wire from points on the McWill driver to various components on the Game Gear's main board. Six of these wires have to be soldered directly onto data lines where the old screen's ribbon cable once sat – a process made even more tense since you have to count each tiny pin to find the correct location. I found that using little triangles of electrical tape to mark each correct pin ensured I didn't accidentally solder a wire in the wrong place. It's also worth mentioning that one wire needs to bridge the two pins on the main board – something that didn't immediately jump out to me in the instructions, but was made more clear in videos I watched online.

With everything wired up, and all those wires then routed away from delicate areas like the cartridge slot and button contacts (Kapton tape was my friend here), I could give my new screen a test – and guess what? It worked first time. This must be how astrophysicists feel when they blast a rocket into space. The screen quality really is something, too: sharp, responsive, and entirely ghost-free. You can cycle through different

modes by holding down the A, B, and Start buttons, which provide scanlines (for that retro look) and a couple of resolution options.

If I were to pick some niggles with the McWill, I'd say getting it aligned perfectly with the case's screen bezel isn't exactly foolproof – although I had the screen lined up with the points marked on the board, it was still a little too low and too far to the right when I put the console back together, which required me to give the positioning a tweak. I'd also argue that it isn't the most straightforward mod to install (replacement Game Boy screens are a dream by comparison) and at just under £100, it's not cheap, especially if something goes wrong. The results, however, arguably make the effort and expense worthwhile – especially if you're a devoted fan of Sega's 8-bit portable.

Another note: when you rebuild your Game Gear after installing the mod, don't do what I did and attempt to put the security bit screw in the back of the case; doing so will damage the delicate ribbon cable occupying that area. After being greeted with a black screen on powering my Game Gear back on, I had to shamefacedly take the console apart yet again and do a tiny repair to a scratched track on the ribbon cable. Thankfully, it's in perfect working order again, and I'll be careful not to make the same rookie error again in the future. With the McWill screen safely in place, there's the next step in my Game Gear project: install a CleanPower GG power regulator to give me USB-C connectivity, and finally, replace the scratched and dirty old shell, buttons, and membrane with brand new parts from Retro Six. I'll report back again next month.



▼ There are about a dozen wires to solder in total, including six to the data lines on the main board. Don't worry, I cleaned all this flux off afterwards.

# Backwards compatible

WRITTEN BY IAN 'AGES' DRANSFIELD

## Re(Sa)turn of the Mack

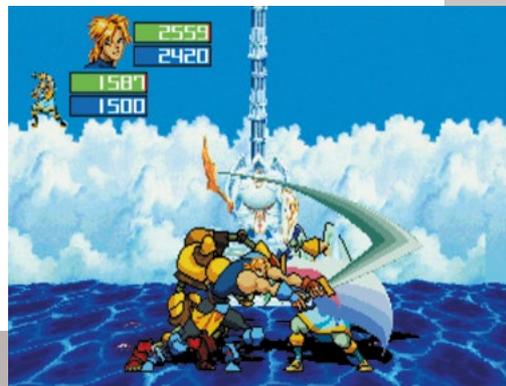
It's taken a while, but I've finally started giving it a proper go: there's a Sega Saturn set up at my desk, being played semi-regularly, with a whole new world of games I've never really touched before, ripe for the playing. Turns out this whole 'Guardian Heroes is good' lark was on the money, and there's a lot to be said for the sheer joy of snoozing my way through *Nights*. Almost as if the people beating these particular drums for so many years had reason to.

What strikes me the most about finally, finally giving the Saturn a go – after owning the console for about 20 years, I should point out – is how fresh it feels. It feels distinct, and different to the PlayStation. It's not just a different boot-up animation, or a controller layout that doesn't feel familiar under the thumbs. It's the lack of wobble on 3D textures. It's the adorably poor transparency effects. And it's playing a bunch of very Sega-ish games from an era when I was decidedly wrapped in Sony-themed garb.

Maybe it's the dulling of the senses with age – and maybe there's a lot of old

man yelling at cloud when I say this – but I do not get that feeling when switching between the Xbox Series X and the PS5. I didn't get it when jumping from PS4 to Xbox One. The only contemporary console that offers something that feels different, in more ways than one, is the Switch – and even there it's increasingly riddled with ports from the 'big' consoles, thus ever-more homogenised.

And so the experience – that of playing on a quarter-century-old console, on games I half-remember existing from a vague image in my head of some multiformat games magazine in the 1990s – is one that feels surprisingly new, and different, and special. It's not often ploughing through retro gaming elicits that sort of reaction, and I doubt it will come from many other machines – there are few big ones I've missed (*Weird flex, but OK – Ed*), so few opportunities to engage in an entirely new experience. On an old console. Unless I get big into the 3DO and Gizmondo, I don't know. Does anybody have either of those going spare?



## Street Fighter s-AGA

*Street Fighter II* on the Amiga was... a joke? A joke. Hardware constraints, time constraints, little help from Capcom, too much pressure from publisher U.S. Gold – it all came together to make one of the lesser ports of the classic brawler. What was worse, though, was how the Amiga 1200 version took no advantage of that machine's Advanced Graphics Architecture (AGA).

All we had to do was wait almost 30 years and, finally, we've got a glance at what a proper *Street Fighter II* on Amiga 1200 could have looked like. Dennis Ramberg, of indie developer Pixel Shade, worked on a proof of concept demo for a theoretical port of *SFII* to the AGA hardware – using clever tricks behind the scenes, he was able to make something that looks very much the part, and moves nicely too. It's not playable – Ramberg says it's unlikely to ever *be* playable – but it's a decidedly interesting look at the potential left on the table when it came to Commodore's less popular Amiga variant. Do have a look at the video, it's very interesting: [wfmag.cc/SFAGA](http://wfmag.cc/SFAGA).



## Make it again

What's stopping you, you cowards? Now is as good a time as any to bring back the true, proper *Syndicate* – none of this daft first-person shooter nonsense: a top-down, strategic, squad-based shooter/persuader/tronner. It's been 25 years since the last proper *Syndicate* game – it's been five and a half years since spiritual spin-off *Satellite Reign* – it's been a long time, is what I'm saying, since I've had my fill of squads of cyborgs mowing everything in its way down with nihilistic aplomb. Or persuading everyone, of course.

EA owns everything Bullfrog, including *Syndicate*, and its attention is obviously turned elsewhere – *Star Wars*, *FIFA*, the things that can be endlessly monetised up the wazoo and will sell millions of copies to begin with. But handing the licence out to a studio that could just go to town on a new version of the all-time classic(s) – that wouldn't be too hard, would it? All I ask is, EA – I know you're reading this – please, just give the *Syndicate* licence to Larian. You know it makes sense.

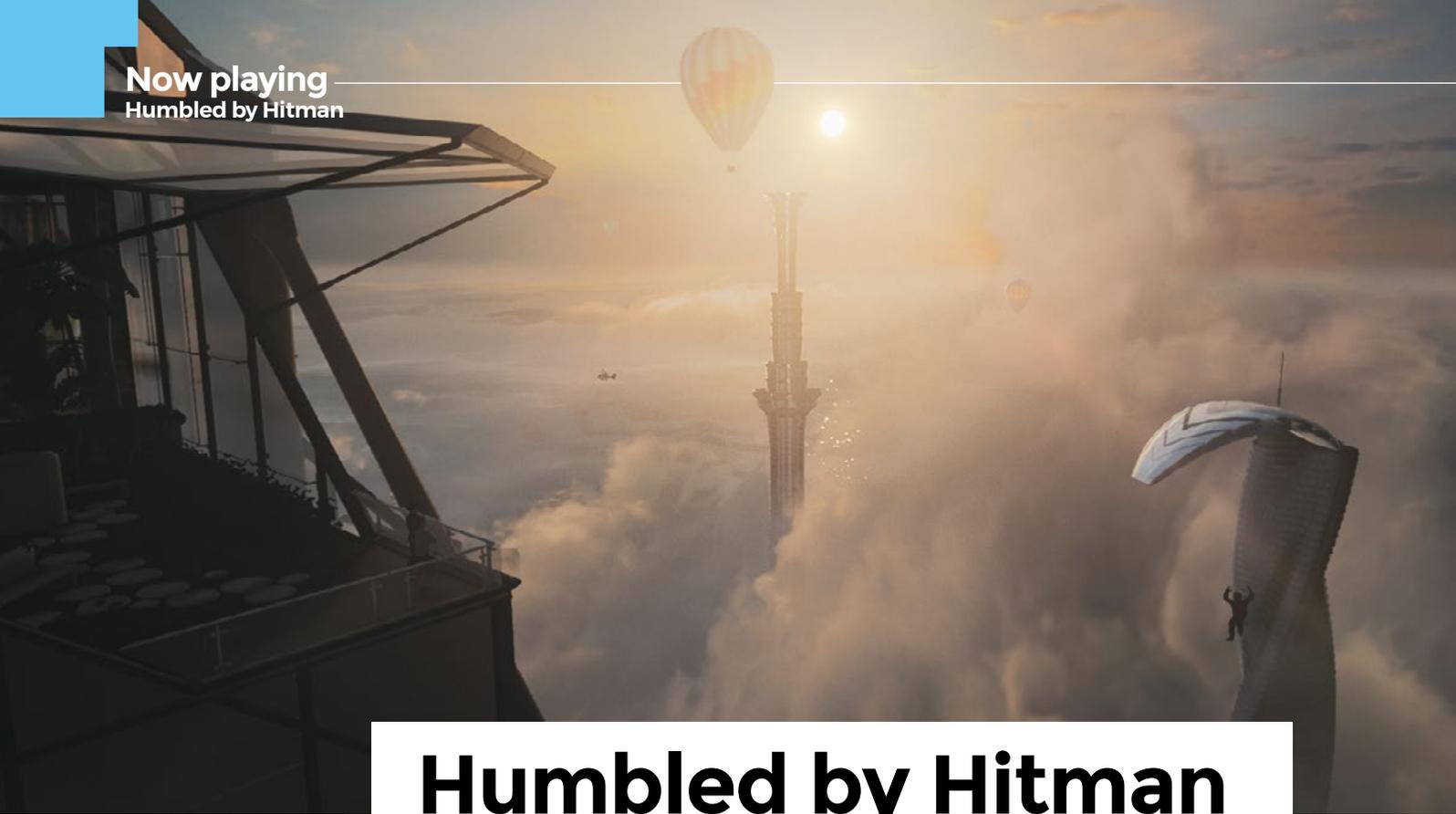


## Scrolling Unity

*The Elder Scrolls*, as regular readers might have realised, is a series I hold fondly in my heart. But I've never played the second game, *Daggerfall* – the one that took the first *real* steps towards making the series what it is today. This has changed, or *is changing*, thanks to the content-complete release of *Daggerfall Unity*, a project by Australian hobbyist dev Gavin 'Interkarma' Clayton.

There are still things to add and fix, but ostensibly the entire game is playable from start to finish – and it's not just easily compatible with modern operating systems via Unity, there are other useful additions, too: a wider variety of resolutions; controller support; integrated mod support; and plenty of other quality-of-life improvements. It does nothing to the core game – this is still pure *Daggerfall* – it's just been made significantly easier to play in a modern setting. So yeah, I've jumped in. And you know what? It's clunky – as in the game, its systems – but I can see why Bethesda knew it was onto something with this all the way back in 1996. Check it out for yourself here: [wfmag.cc/DagUn](http://wfmag.cc/DagUn).





# Humbled by Hitman

Ryan spends far too long trying to assassinate posh people in Hitman 3

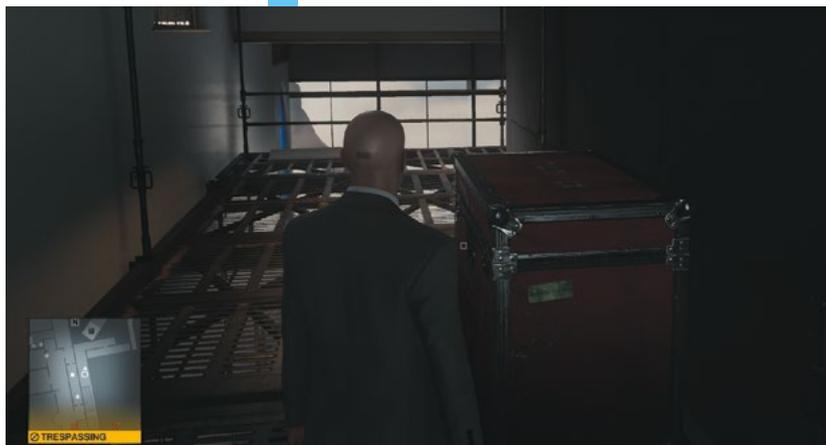
^ Success is - just about - mine. Let's never speak of this again.

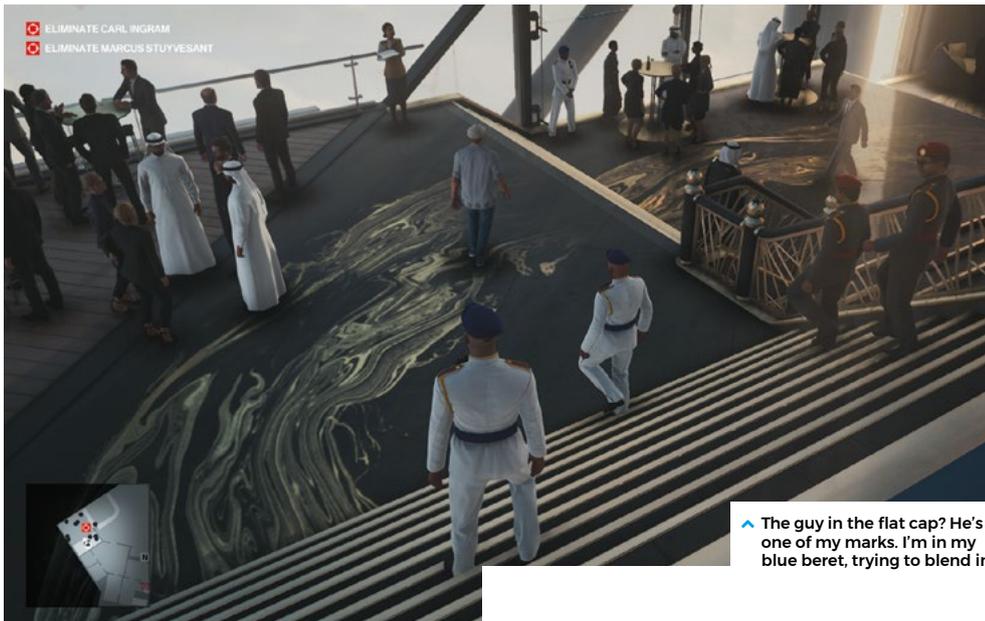
**P**laying *Hitman 3* has, it must be said, been a humbling experience. I'm used to being slightly rubbish at all kinds of games, but it's rare to find one that so coldly lays bare all my personality flaws and shortcomings. I've played *Hitman* games in the past, and I've been not-that-great at those too, but there's something about *Hitman 3*'s opening stage - a simple-seeming 'assassinate these two rich guys in a fancy Dubai high-rise building' gambit - that has left my lack of patience and dreadful spatial awareness blatantly exposed. In previous *Hitman* games, I've always

blundered through the stages, finding ways to adapt their need for planning, observation, and patience to my own way of playing things. But *Hitman 3*'s Dubai level, for what felt like ages, resisted my attempts to blag, stumble, and generally brute-force my way through its glitzy environs. There's something about its design that didn't leave me with much margin for error - and boy have I made a lot of errors.

At least I started out with the best intentions. After parachuting my way in through the top of the building - a scene blatantly borrowed from the last *Mission: Impossible* movie - I began sneaking around the building, attempting to get a feel for how everything was laid out. There's a glamorous party going on, and assorted dignitaries are standing around enjoying drinks under the watchful gaze of various security details. I discover that it's fairly easy to work my way into otherwise security-laden areas by taking one of the emergency exit doors tucked away in a pretentious art exhibit, and I can then blend in by subduing a cleaner and borrowing their clothes. But then, as I do this, one of their co-workers spots me crouching over the first cleaner's unconscious body, freaks out, and rushes off to get help. I make a sharp exit and try to hide as armed security guards start hunting around for me, and I eventually get shot. My subsequent, mishap-strewn attempt to hack a security

^ A *Hitman* game wouldn't be the same without conveniently placed boxes and lockers to hide in.





mainframe results in me getting caught up in a screaming gun battle with some very angry men in berets – a battle that I inevitably lost.

Pulling myself together, I tried again, and managed to find one of the men I was meant to assassinate loitering in one corner of the party, flanked by two heavies. I overheard a conversation about a third security person coming in to take over from one of the others, so I quickly snuck off, found a guard hanging around on his own, subdued him, and stole his uniform. I then headed back to my mark and followed him, expecting I'd be able to take over as his bogus bodyguard and quietly take him out when we have a few seconds alone together. But then my quarry walks off on a path I'm not expecting, opens a pair of doors and... reveals the half-naked body of the guard I'd previously subdued and that, in my haste, had completely forgotten to hide from view. Needless to say, the rich guy freaked out, I was quickly surrounded by yet more guards with machine guns, and I was filled with lead. Again. Sigh.

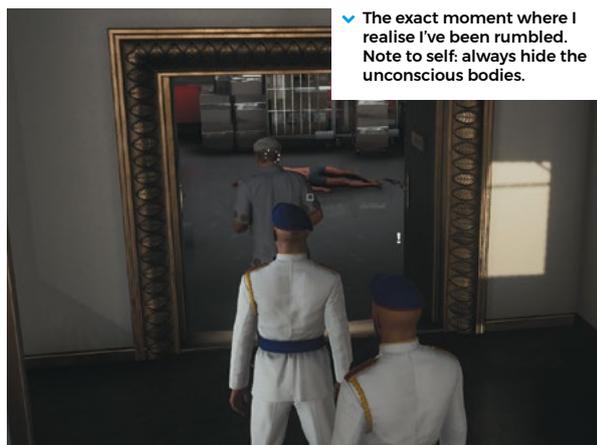
You get the idea by now. I started again, observed things, made plans based on those observations, but then made a silly mistake while executing those plans and got myself executed in the process. But here's the important thing to note in all this: I may be rubbish, and if I were

### “A screaming gun battle with some very angry men in berets”

to attempt a Twitch stream of all these antics, I'd probably get shouted off the internet, but I'm really, really enjoying myself at the same time. With each spectacular screw-up and mission failure, I learned something more about the layout of the level, and got a better idea of how to avoid those mistakes next time. I successfully grabbed the key card I needed from a cleaner without alerting

his co-worker. I figured out how to hack a mainframe properly without attracting an army of irritable guards. And eventually, I did manage to take out both of my targets

and complete the mission. Sure, I completed the mission with bullets whizzing past my ears as I donned a parachute and hurled myself off the side of the building, but still: a win's a win. *Hitman 3* is a humbling experience, for sure, but it's undoubtedly a rewarding one. 🍷



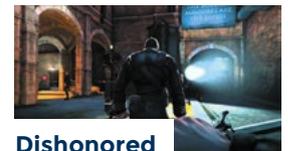
## Wireframe Recommends



### Alien: Isolation

PC, VARIOUS

This is another one of those games that I wasn't great at but enjoyed persevering with nonetheless. Well, I say 'enjoyed' – *Isolation* is a stressful survive-'em-up, but one made with real skill and attention to detail.



### Dishonored

PC, VARIOUS

Arkane's series debut was so satisfying because it was so flexible. Sneaking was always an option, but if you messed up, as I inevitably did, violence was always a reliable fallback.



### Aragami

PC, VARIOUS

A fun throwback to earlier stealth games like *Tenchu*, *Aragami* turned assassination into a high-stakes puzzle game, where choosing inconspicuous paths and remaining tucked away in the shadows were key to victory.



# Desperately seeking apocalypse

Ian's moved on to another buggy sci-fi RPG: *Wasteland 3*

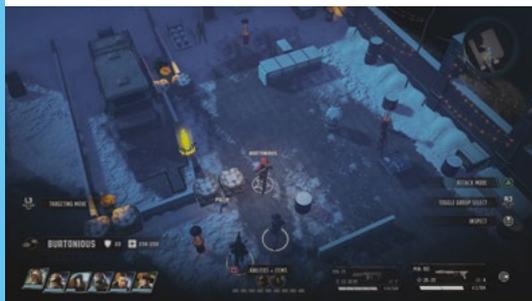
**T**here was a game just a few months ago – a futuristic, sci-fi-tinged RPG set in a large mass of land showing a potential future USA, where society had moved beyond a point of no return and you, the player, were there to engage in it in (almost) any way you saw fit. Buggy and fundamentally flawed, *Cyberpunk 2077* was a massive let-down. I needed a hit of something similar, then remembered I had backed *Wasteland 3* on the crowdfunding site Fig about 13,000 years ago, then promptly forgot about it when it actually came out in the middle of 2020. Other things going on, you know?

So what is *Wasteland 3*? Well, it's a futuristic, sci-fi-tinged RPG set in a large mass of land showing a potential future USA, where society

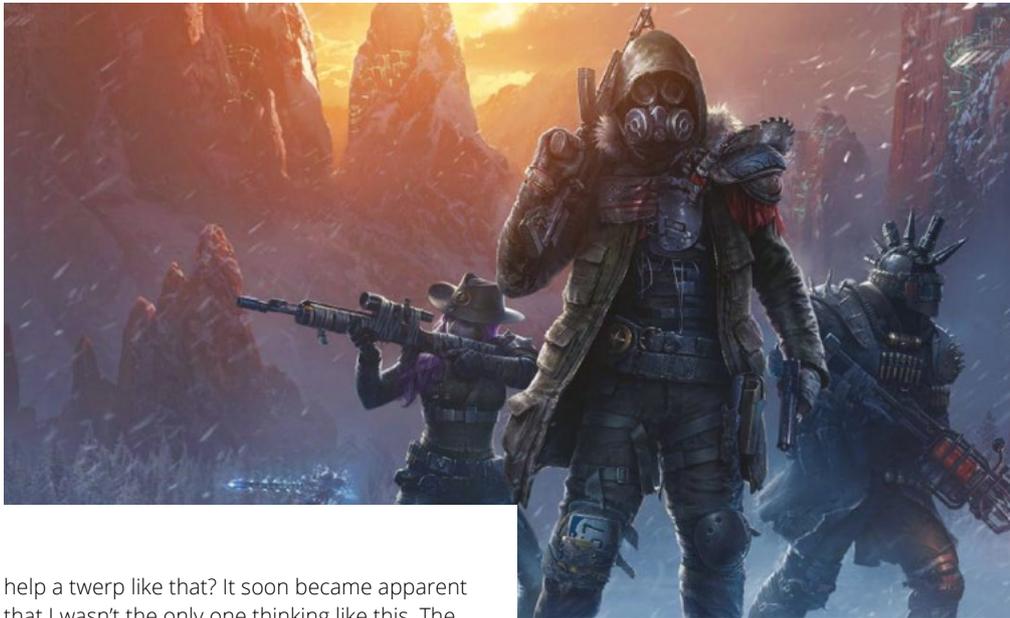
has moved beyond a point of no return and you, the player, can engage in it in (almost) any way you see fit. Buggy and somewhat flawed, *Wasteland 3* is actually a bloody good time. Especially if you're into dark-and-depressing takes on a post-apocalyptic world that sprinkle things with hints of humour and silliness with some frequency.

Ideally, you'll have played the classic original game and the fantastic follow-up from a few years ago before getting to this point, but honestly, *Wasteland 3* is enough of a reset of the story and world (at least that which you explore) to be welcoming to newcomers. You'll pick up on the tales of the previous games from chatting to people, and this is very much a self-contained yarn. Arriving in Colorado, my team of Desert Rangers (now in the Arctic tundra) is ambushed by local... vagabonds, let's go with. Mostly killed, the survivors are left spread out and told to continue their mission: to aid a local leader known as the Patriarch in his quest to bring order to the chaos of a world where the bombs have dropped.

It's a solid start, and it dragged me in with ease. I immediately hated the Patriarch, because he's everything that's wrong with figures of authority and 'stability' in the modern world – off-putting at first, because who wants to actively



► Our Polly, the foul-mouthed parrot, died horribly, needlessly, and completely by accident. As it should be.



help a twerp like that? It soon became apparent that I wasn't the only one thinking like this. The game's characters were – well, some of them – meaning the game's writers were. I expected no less, of course, as I wasn't coming in blind, and the last *Wasteland* was as cynical and smart as it was silly and chucklesome – but it's still ever-pleasing to be presented with characters who have a bit more to them than just good or bad.

The Patriarch believes his mission, see: to bring peace to Colorado Springs and the surrounding area. But his version of peace is through order, which is through control, which comes via his iron fist. You're free under his reign, but only within the strict boundaries he sets. In many ways, this is a legitimate approach to a post-nuclear destruction world: chaos needs authoritarians to bring things in line. But it's not a fair system, and it's not a just system, and it's not a free system. And you're free to discuss all of this with the Patriarch, with other characters, with dissenters and believers, with a cadre of 'Gippers' nearby who worship a computer construct modelled on Ronald Reagan – with anyone. And you're free to make up your own mind.

*Wasteland 3* is 'mature' in the best possible way, presenting not just its main questline, but everything else around it with varying levels of complexity and an ever-spinning moral compass. You will make genuinely *hard* decisions – do you return a woman to slavers in order to gain access to stores of significantly more powerful weapons and armour than you have, knowing that sacrificing her liberty will help your drive to bring

**“Wasteland 3 presents everything with varying levels of complexity and an ever-spinning moral compass”**

order to Colorado? Or do you warn her, get her to go into hiding, knowing this shuts off access to those items permanently *and* that the woman is considerably less safe and secure in having to fend for herself in this tough world? And there are so many other elements beyond that.

Back on the Gippers for a second, I was near overjoyed with Reagan's representation in the game – coming as it did off the heels of playing a *Call of Duty* title that presented Ronnie in the most uncritical light such a contentious figure could ever be presented in. *Wasteland 3* expects you to know *something* about Reagan, and it

makes jokes with that assumed knowledge, and references you will pick up on if you're up to speed on your neolib history, and *damn* it felt good to turn on

that group and blow up their laser-shooting Reagan statue. But even then, even committed as I was to removing the Gippers' influence from the world, I still ended up saving the Reagan AI construct and handing it over to a settlement comprised entirely of artificial lifeforms. Because it felt like the right thing to do.

*Wasteland 3* is outright shoddy at times, but unlike *Cyberpunk 2077*, inXile's game easily transcends its bugs and presents a game that offers choice – real choice – alongside smart writing and an engaging slice of post-apocalyptic Americana. Plus you get cyborg chickens in your party, which is always a boon. 🐔

## Wireframe Recommends



### Wasteland 2

PC, PS4, XBO, SWITCH  
More stable and less buggy, the second *Wasteland* enjoys some fantastic writing and world-building, alongside some genuinely difficult decisions to make along the way. However you play, at times you will be *made* to feel bad.



### Fallout: New Vegas

PC, X360, PS3  
Nope, never going to stop recommending this one. Littered with true moral quandaries alongside genuinely good writing, it's one of the absolute best RPGs ever made.



### Star Wars: Knights of the Old Republic 2 – The Sith Lords

PC, XBOX, MOBILE  
Sticking with the morality theme, there's a bit in Obsidian's sometimes overlooked sequel where you can stop a shakedown by tricking the aggressors into jumping off a nearby ledge to their deaths. Problem solved: with added evil.



# Sexy Parodius

Konami's febrile shooter sequel had an ingenious idea hidden away under its saucy exterior, Ryan writes

KONAMI / 1996 / ARCADE, SEGA SATURN, PSONE

Let's get the awkward bit out of the way first: this late entry in Konami's parody shooter series had some mildly lewd moments in it. Nothing too smutty – imagine the sort of bawdy stuff you used to see in pier-end postcards and you're someway there – but that's not why we picked this particular oddity from the archives in any case. No, beneath *Sexy Parodius's* surreal sight gags and saucy cutscenes lurks yet another superbly made shoot-'em-up from a company at the height of its creative powers. And, to spice the series' formula up even further, *Sexy Parodius* added a new idea so clever, we're surprised more developers haven't stolen it for their own shooters.

Where earlier *Parodius* games followed the typical genre mode – fly through a level, defeat a boss, fly through the next – *Sexy Parodius* introduced a kind of mission system. At the start of each stage, you'd be given an objective: on the first, you have to take out a monstrous corn on the cob; on the second, you need to collect a certain number of coins dotted around a maze of deadly tunnels and outcroppings. Your success or failure would then determine which stage you went to next. It's a simple concept that not only gives

the game more variety, since picking out ten specific targets or trying to collect so many coins requires a different type of concentration from simply shooting stuff and avoiding projectiles, but also ups the replay factor considerably: grab enough coins on stage two, for example, and you'll be sent off on one weird mission in an undersea palace; mess that second stage up, however, and you'll be whisked off to a haunted castle where you have to destroy a certain quota of rats.

The differences between these branching missions is so huge, in fact, that it's worth deliberately failing a stage (or trying extremely hard to complete its objectives) to ensure you see everything the game has

to offer. If you really suck at finding all those coins on stage two, for instance, you won't get to sample the weirdness of stage 3A, where dragons emerge from soup bowls as a rendition of Konami's pioneering brawler *Yie Ar Kung-Fu* jangles away in the background.

Admittedly, *Sexy Parodius's* designers didn't exactly push these ideas as far as they could have. The missions mostly boil down to the same 'collect X number of this item' or 'kill X number of this enemy', and there are only ten stages in total (or eight if you discount a late boss rush round and the final

**"Your success or failure would then determine which stage you went to next"**



boss encounter, the latter only appearing if you successfully complete all the earlier objectives). It should also be noted that other developers in the eighties and nineties dabbled in somewhat similar concepts from time to time – *U.N. Squadron* (also known as *Area 88*) on the Super Nintendo saw you completing missions to earn cash which could then be exchanged for upgrades, for instance, while Taito's *Darius* franchise prominently featured branching stages. No other game put all this together quite like Konami's designers did with *Sexy Parodius*, though, and it's possible they might have explored their branching missions concept further in later entries. Unfortunately, the shoot-'em-up was falling out of fashion by the second half of the nineties, as the ascent of Capcom's *Street Fighter 2* and its updates muscled the genre aside in arcades.

Still, this only makes us think that contemporary developers really ought to take what Konami established in *Sexy Parodius* and explore it all further. We'd happily play a modern take on the traditional 2D spaceship shooter with a more varied array of missions – taking out buildings, pulling off rescues, and so forth – and where completing those objectives, in turn, affects our path through the game. If there are any modern studios reading this, please make this happen – and no, you don't have to include the randy octopuses. 🐧

## Bringing Sexy Back

*Sexy Parodius* was the last proper shooter in the series, but that didn't mean it died out completely in 1996. Its whimsical animals and offbeat humour lingered on in *Paro Wars*, a curious strategy spin-off released for the PSone in 1997, while the series' assorted penguins and octopuses adorned a number of pachinko machines released between 1998 and 2010. As Konami gradually moved away from exploring its back catalogue, however – it doesn't look like we'll get a new *TwinBee*, *Gradius*, or *Castlevania* entry soon, either – the *Parodius* name has been allowed to gradually gather dust. A half-baked shooter by the name of *Otomedi* dribbled out of Konami's doors in 2007, and featured the odd cartoon penguin here and there, but the old *Parodius* magic was well and truly gone by then. Now, if only Konami would license the *Parodius* name to another company – like the supremely talented M2 – then maybe it could regain some of its imaginative, nutty lustre. Here's hoping.



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Wireframe magazine is published by Raspberry Pi (Trading) Ltd, Maurice Wilkes Building, St. John's Innovation Park, Cowley Road, Cambridge, CB4 0DS. The publisher, editor, and contributors accept no responsibility in respect of any omissions or errors relating to goods, products or services referred to or advertised in the magazine. Except where otherwise noted, content in this magazine is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0).  
ISSN: 2631-6722 (print), 2631-6730 (online).



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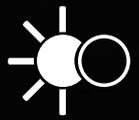
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